CASE 7313: PHILLIPS PETROLEUM COMPANY FOR DOWNHOLE COMMINCLING, EDDY COUNTY, NEW MEXICO

# Case No.

# 7313

Application

Transcripts

Small Exhibits

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO

29 July 1981

# EXAMINER HEARING

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IN THE MATTER OF:

Application of Phillips Petroleum Company for downhole commingling, Eddy County, New Mexico.

CASE 7313

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Division:

Ernest L. Padilla, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 37501

For the Applicant:

W. Thomas Kellahin, Esq. KELLAHIN & KELLAHIN 500 Don Gaspar Santa Fe, New Mexico 87501

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| JERRY I                               | . BLEVINS                        |      |
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|                                       | Cross Examination by Mr. Stamets | 13   |
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| Applica                               | nt Exhibit Three, Schematic      | 8    |
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|                                       |                                  |      |
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MR. STAMETS: We'll call next Case 7313.

MR. PADILLA: Application of Phillips

Petroleum Company for downhole commingling, Eddy County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant.

I'd like the record to reflect that Mr. Blevins has previously been sworn and qualified as an expert engineer in the previous case and is so tendered as an expert in this case.

MR. STAMETS: The record will so show.

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# JERRY L. BLEVINS

being called as a witness and being previously sworn upon his oath, testified as follows, to-wit:

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#### DIRECT EXAMINATION

BY MR. KELLAHIN:

Mr. Blevins, let me direct your attention to Phillips' Exhibit Number One and have you identify that for us and tell us what you're seeking to accomplish in this application.

This is a lease plat showing our Drag A No. 1 Well with the yellow arrow in Carlsbad South Field. We

2 plan to commingle the Morrow and Atoka zones in this well. 3 We have the cumulative productions listed for each zone, designated by colors as far as what they have produced in, not necessarily producing in that formation right 5 6 7 All right, what's the proration unit 8 assigned to the Atoka and the Morrow for this well? It's the north half of Section 18. And is the ownership common between those 10 11 two formations? 12 Yes, sir, it is. 13 Let me ask you if there are any other 14 wells in the area that have been approved as Atoka/Morrow 15 downhole commingled wells? Yes, sir. In Section 8 you'll notice 16 the Tidwell "A" No. 1 is a strange orange color. It was by 17 18 Order No. R-5027, dated May 22nd, 1975, that this well was 19 approved for downhole commingling. How does the cumulative production 20 compare to the well that has been approved with your proposed 21 22 well? Overall the cumulative production is 23 basically the same. You'll see that the Morrow in both zones 24 has 1.9 Bcf and the Atoka has .8 in our Drag "A" and the Tid-

well has .9 Bcf.

Q. In your opinion is the production from both formations in the proposed well significantly low enough to justify downhole commingling?

A. Yes, sir, it is.

Q In your opinion will the downhole commingling result in the production of gas that would not otherwise be recovered?

A. Yes, sir.

Q. Anything else about Exhibit Number One?

No, sir.

Q Let's go to Exhibit Number Two. Would you identify that for us?

A. Exhibit Number Two is a lease name and location of our well. It has the completion intervals of the Atoka zone and of the Morrow zone. The dual completion was authorized by Commission Order No. MC-1993. It has our latest well test from the wells. You'll see that the latest well test was November of 1972 for the Atoka, which at that time we shut-in the casing due to the inability of the well to flow up the casing, and the Morrow in June was making about 6 Mcf a day.

We calculated the bottom hole pressures again from both zones from shut-in wellhead pressures.

We also took a fluid level on the casing 3 side and estimated, based on the fluid, what the actual bottom hole pressure of that zone would be, which was 887 pounds. 5 The bottom hole pressure of the Morrow was about 520 pounds. 6 Do either one of these formations make 7 water or oil? 8 No, sir. All right, both of them are dry gas wells? 10 Yes, sir. MR. STAMETS: Well, while we're on that, 11 12 then, this fluid level, what is the fluid that makes the 13 fluid level? 14 Well, the fluid, it will fall out of the 15 gas. It will not produce it but it's just accumulated down 16 there over the years. 17 Gas condensate is what you're talking 18 about? 19 I don't know. I didn't catch a sample 20 I won't say whether it's water. I won't say whether 21 it's condensate. But it falls out with it -- the gas will 22 hold so much water when it's flowing. Temperature differ-23 ential and pressure differential, it will come out and with this shut-in, I'm not for sure whether that fluid was down

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| 1    |                    |  |
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| 2    | it, or if it's con | ming out of the formation.               |
| 3    | Q.                 | Now explain to me this, out of what      |
| 4    | formation do you   | think or what formation do you encounter |
| 5    | the liquid product | tion in? This is the Atoka?              |
| 6    | A.                 | Well                                     |
| 7    | Q                  | That you're talking about?               |
| 8    | Å,                 | There's no production of liquids but     |
| 9    | Q.                 | I understand. The liquids are not pro-   |
| 10   | duced at the surfa | ace, are they?                           |
| 11 . | A.                 | No, they're not produced at the surface. |
| 12   | Q.                 | All right. In what formation are you     |
| 13   | encountering liqui | id?                                      |
| 14   | Д.                 | It's in the Atoka zone.                  |
| 15   | Q.                 | It's in the Atoka, and you're trying to  |
| 16   | lift the Atoka nov | v up through the casing?                 |
| 17   | А.                 | Yes, sir.                                |
| 18   | Q                  | All right.                               |
| 19   |                    | Your proposed downhole commingling will  |
| 20   | produce the gases  | how?                                     |
| 21   | A.                 | Through the tubing                       |
| 22   | Q.                 | All right.                               |
| 23   | A.                 | jointly.                                 |
| 24   | Q.                 | What, if any, affect will that have upon |
| 25   | the liquid?        |  |

Me would be able to flow greater amounts of gas due to the reduced diameters.

Q. Are you able to measure the volume of the liquid? How much are we talking about?

There's no -- there's no liquid production that we -- that we have, so we don't measure the liquid after the fluid level measurements sonic log that they shoot in the wells. It's just build-up of fluid. It not necessarily would be produced. It would more than likely fall to the bottom of the hole and with the production we wouldn't ever see it again.

Q I understand. Let's go on to Exhibit
Number Three.

A. Exhibit Number Three is a well schematic of what the proposed completion would be. We would hang our tubing in. Again, this is if the current completion, the sliding sleeve wouldn't open or we determine that stimulation is needed. Currently there's a packer that separates the two zones from each other. This shows our Morrow perforations, where we would hang our tubing at. It shows our Atoka perforations and the casing and how they were cemented in.

Q. You propose to have the bottom of the tubing string below the lowest perforations in the Morrow?

A. Yes, sir.

| 1  |                       | 9   |
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| 2  | Q.                    | Is that the way this is drawn?            |
| 3  | A.                    | Essentially, yes, sir.                    |
| 4  | Q.                    | Why have you done that?                   |
| 5  | <b>ħ.</b>             | To get a siphon effect. It will lift      |
| 6  | more gas below if     | we set our tubing below the perforations. |
| 7  | We have less back pr  | essure, therefor, more gas will flow into |
| 8  | the tubing.           |   |
| 9  | Q.                    | Okay, Exhibit Number Four.                |
| 10 | Α.                    | Exhibit Four is a log of the subject well |
| 11 | I included this for   | their benefit.                            |
| 12 | Q                     | All right, sir, and Exhibit Number Five.  |
| 13 | А.                    | Exhibit Five is a production graph on     |
| 14 | the Morrow zone of t  | he production since we began in November  |
| 15 | of 1972 through June  | no, through May of 1981. This is          |
| 16 | what the production   | that we've recorded and sent into the     |
| 17 | State.                |   |
| 18 | Q.                    | Six?                                      |
| 19 | <b>A.</b>             | Exhibit Six is a listing by month of      |
| 20 | the well and the cum  | ulative. You'll notice we produced the    |
| 21 | Atoka zone for two me | onths in November and December of 1972,   |
| 22 | then shut the well is | n. It was unable to flow up the casing    |
| 23 | any more.             |   |
| 24 | Q                     | This is when you attempted production as  |
| 25 | a dual completion?    |   |

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| 2   | A. It was as a dual completion from its                        |
| 3   | beginning and we had to shut her in.                           |
| 4   | Q. All right, sir, and Exhibit Number Seven                    |
| 5   | A. Exhibit Seven is the Atoka 4-point test                     |
| 6   | sent in to the State in 1972 and a graphic computation of it   |
| 7   | on the second page.  |
| 8   | All right, Exhibit Number Eight.                               |
| . 9 | A. The other test. Again, the initial                          |
| 10  | 4-point test for the Morrow zone that was sent in to the State |
| 11  | back in 1972. Anything, the absolute open flows and the        |
| 12  | actual rating of the gas well itself.                          |
| 13  | Q. Is information from Exhibits Seven and                      |
| 14  | Eight the information you used to make the calculated bottom   |
| 15  | hole pressure  |
| 16  | A. No, sir   |
| 17  | Q calculations?  |
| 18  | A it's not. We measured these pressures                        |
| 19  | earlier this month. We shut the wells in and got a pressure    |
| 20  | measurement.   |
| 21  | Q. For purposes of Exhibit Two and the botto                   |
| 22  | hole pressures you calculated for that exhibit, you've taken   |
| 23  | other pressure information?                                    |
| 24  | A. Other pressure information, yes, sir.                       |
| 25  | Q. All right. Exhibit Number Nine.                             |

| 1  | 11   |
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| 2  | Nine and Ten.  |
| 3  | Nine and Ten are gas analyses of the wel                       |
| 4  | to show that the Morrow and the Atoka are essentially the same |
| 5  | compatible fluids. You'll see most of it is methane. It's      |
| 6  | 96.4 in the Morrow; 95.3 in the Atoka.                         |
| 7  | Q. What's the BTU content?                                     |
| 8  | A. On the Morrow   |
| 9  | Q. It's compatible, also, isn't it?                            |
| 10 | A. Yes, sir, it sure is.                                       |
| 11 | Q All right, sir, Exhibit Eleven.                              |
| 12 | A. Eleven is the economics of our commingli                    |
| 13 | for the Morrow. Page one is the commingled production which    |
| 14 | would last for seven years. Page two shows the individual      |
| 15 | production for twelve years. The difference is increase in     |
| 16 | reserves. We'd increase it by about 4MMCF and increase in      |
| 17 | cash flow would be about \$20,700.                             |
| 18 | Q Exhibit Number Twelve.                                       |
| 19 | A. Twelve is a well history of what has                        |
| 20 | happened to the well during its life with all our treatments   |
| 21 | in the Atoka and in the Morrow.                                |
| 22 | Q All right, sir, and Exhibit Number Thir-                     |
| 23 | teen.  |
| 24 | A. Thirteen is the estimated production                        |

for the Atoka and for the Morrow and Atoka, with the recom-

| 1        |                      | 12   |
|----------|----------------------|--|
| 2        | mended allotment of  | 25 percent to the Morrow and 75 percent    |
| <b>3</b> | allotted to the Atok | ca.  |
| 4        | Q.                   | All right, what is your proposed allo-     |
| 5        | cation percentages a | gain?                                      |
| 6        | A.                   | 25 percent for the Morrow and 75 percent   |
| 7        | for the Atoka.       |  |
| 8        | Q                    | And you propose those as percentages for   |
| <b>9</b> | allocation on the pr | oduction based upon the estimated recover- |
| 10       | able reserves?       |  |
| 11,      | <b>A.</b>            | Yes, sir.                                  |
| 12       | Q                    | All right. Were Exhibits One through       |
| 13       | Thirteen prepared or | compiled under your direction and super-   |
| 14       | vision, Mr. Blevins? |  |
| 15       | <b>A.</b>            | Yes, sir.                                  |
| 16       | Q.                   | And in your opinion will approval of this  |
| 17       | application be in th | e best interest of conservation, the       |
| 18       | prevention of waste, | and the protection of correlative rights?  |
| 19       | A.                   | Yes, sir.                                  |
| 20       |                      | MR. KELLAHIN: We move the introduction     |
| 21       | of Exhibits One thro | ugh Thirteen.                              |
| 22       |                      | MR. STAMETS: These exhibits will be        |
| 23       | admitted.            |  |
| 24       | 1 <b>3</b> 4         |  |
| 25       |                      |  |

| 1  | 13  |
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| 2  | CROSS EXAMINATION   |
| 3  | BY MR. STAMETS:   |
| 4  | Q. Mr. Blevins, you indicated that it may                     |
| 5  | be necessary to pull the existing tubular goods out of the    |
| 6  | hole.   |
| 7  | A. Yes, sir.  |
| 8  | Q. And you also might stimulate one or both                   |
| 9  | of these zones.   |
| 10 | A. Yes, sir.  |
| 11 | Q. Would you anticipate attempting to open                    |
| 12 | up any zones which are not currently open in this well?       |
| 13 | A. I don't believe so, sir.                                   |
| 14 | Q. Okay. The evidence is a little unclear                     |
| 15 | relative to Atoka liquids, exactly what may be produced.      |
| 16 | Would Phillips have any problem with testing this well for    |
| 17 | a 90-day period, reporting any liquid production to the Divi- |
| 18 | sion so we can evaluate that, whether there ought to be some  |
| 19 | sort of separation between the two zones?                     |
| 20 | A. I don't think we'd have a problem with                     |
| 21 | that.   |
| 22 | Q. Okay.  |
| 23 | Any other questions of this witness?                          |
| 24 | MR. KELLAHIN: No, sir.  |
| 25 | MR. STAMETS: He may be excused. If                            |

CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Solly W. Royd CSR

I do her cay car we that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7313, Examiner

Oil Conservation Division

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO 29 July 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Phillips Petroleum Company for downhole commingling, Eddy

County, New Mexico.

CASE 7313

BEFORE: Richard L. Stamets

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TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Division:

Frnest L. Padilla, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501

For the Applicant:

W. Thomas Kellahin, Esq. KELLAHIN & KELLAHIN 500 Don Gaspar Santa Fe, New Mexico 87501

1 2 MR. STAMETS: We'll call next Case 7313. MR. PADILLA: Application of Phillips 3 4 Petroleum Company for downhole commingling, Eddy County, New 5 Mexico. 6 MR. KELLAHIN: Tom Kellahin of Santa Fe, 7 New Mexico, appearing on behalf of the applicant. I'd like the record to reflect that Mr. 9 Blevins has previously been sworn and qualified as an expert 10 engineer in the previous case and is so tendered as an expert 11 in this case. 12 MR. STAMETS: The record will so show. 13 14 JERRY L. BLEVINS 15 being called as a witness and being previously sworn upon his 16 oath, testified as follows, to-wit: 17 18 DIRECT EXAMINATION 19 BY MR. KELLAHIN: Mr. Blevins, let me direct your attention 20 to Phillips' Exhibit Number One and have you identify that 21 22 for us and tell us what you're seeking to accomplish in this 23 application. This is a lease plat showing our Drag A

No. 1 Well with the yellow arrow in Carlsbad South Field. We

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well has .9 Bcf.

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A. Yes, sir, it is.

In your opinion will the downhole commingling result in the production of gas that would not otherwise be recovered?

A. Yes, sir.

Anything else about Exhibit Number One?

A. No, sir.

Q Let's go to Exhibit Number Two. Would you identify that for us?

A, Exhibit Number Two is a lease name and location of our well. It has the completion intervals of the Atoka zone and of the Morrow zone. The dual completion was authorized by Commission Order No. MC-1993. It has our latest well test from the wells. You'll see that the latest well test was November of 1972 for the Atoka, which at that time we shut-in the casing due to the inability of the well to flow up the casing, and the Morrow in June was making about 6 Mcf a day.

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| 2          | it, or if it's com  | ing out of the formation.                |
| 3          | Q.                  | Now emplain to me this, out of what      |
| 4          | formation do you th | nink or what formation do you encounter  |
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| 6          | ħ.                  | Well                                     |
| , <b>7</b> | ()                  | That you're talking about?               |
| 8          | A.                  | There's no production of liquids but     |
| 9          | Q                   | I understand. The liquids are not pro-   |
| 10         | duced at the surfac | e, are they?                             |
| 11         | A.                  | No, they're not produced at the surface. |
| 12         | Q.                  | All right. In what formation are you     |
| 13         | encountering liquid |  |
| 14         | A.                  | It's in the Atoka zone.                  |
| 15         | ΰ                   | It's in the Atoka, and you're trying to  |
| 16         | lift the Atoka now  | up through the casing?                   |
| 17         | A.                  | Yes, sir.                                |
| 18         | Q.                  | All right.                               |
| 19         |                     | Your proposed downhole commingling will  |
| 20         | produce the gases h | ow?                                      |
| 21         | Α.                  | Through the tubing                       |
| 22         | Q.                  | All right.                               |
| 23         |                     | jointly.                                 |
| 24         | <b>Q</b>            | What, if any, affect will that have upon |
| 25         | the liquid?         |  |

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We still probably won't produce liquids. We would be able to flow greater amounts of gas due to the reduced diameters.

Are you able to measure the volume of the liquid? How much are we talking about?

There's no -- there's no liquid production that we -- that we have, so we don't measure the liquid after the fluid level measurements sonic log that they shoot in the wells. It's just build-up of fluid. It not necessarily would be produced. It would more than likely fall to the bottom of the hole and with the production we wouldn't ever see it again.

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You propose to have the bottom of the tubing string below the lowest perforations in the Morrow?

Yes, sir.

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This is when you attempted production as a dual completion?

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|------|-----------------------|--|
| 2    | A,                    | It was as a dual completion from its       |
| 3    | beginning and we had  | to shut her in.                            |
| 4    | Ω                     | All right, sir, and Exhibit Number Seven.  |
| 5    | A.                    | Exhibit Seven is the Atoka 4-point test    |
| 6    | sent in to the State  | in 1972 and a graphic computation of it    |
| 7    | on the second page.   |  |
| 8    | Q.                    | All right, Exhibit Number Eight.           |
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| 11   | back in 1972. Anyth:  | ing, the absolute open flows and the       |
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| 16   | A.                    | No, sir                                    |
| 17   | Q                     | calculations?                              |
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| 19   | earlier this month.   | We shut the wells in and got a pressure    |
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| 21   | Q.                    | For purposes of Exhibit Two and the bottom |
| 22   | hole pressures you ca | lculated for that exhibit, you've taken    |
| 23   | other pressure inform | ation?                                     |
| 24   | <b>A.</b>             | Other pressure information, yes, sir.      |
| 25   | Q.                    | All right. Exhibit Number Nine.            |

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| 2   | Nine and Ten.   |
| 3   | h. Nine and Ton are gas analyses of the wells   |
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| 20  | happened to the well during its life with all our treatments  |
| 21  | in the Atoka and in the Morrow.   |
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| 4              | Q All right, what is your proposed allo-                       |
| 5              | cation percentages again?                                      |
| 6              | A. 25 percent for the Morrow and 75 percent                    |
| 7              | for the Atoka.   |
| 8              | Q. And you propose those as percentages for                    |
| 9              | allocation on the production based upon the estimated recover- |
| 10             | able reserves?   |
| 11             | A. Yes, sir.   |
| 12             | ρ All right. Were Exhibits One through                         |
| 13             | Thirteen prepared or compiled under your direction and super-  |
| 14             | vision, Mr. Blevins?   |
| 15             | A. Yes, sir.   |
| 16             | And in your opinion will approval of this                      |
| 17             | application be in the best interest of conservation, the       |
| 18             | prevention of waste, and the protection of correlative rights? |
| 19             | A. Yes, sir.   |
| 20             |  |
| 21             |  |
| 22             | of Exhibits One through Thirteen.                              |
| 23             | MR. STAMETS: These exhibits will be                            |
| and the second | admitted.  |
| 24             |  |
| 25             |  |

# 1 13 2 CROSS EKAMINATION 3 BY MR. STAMÉTS: 4 Mr. Blevins, you indicated that it may 5 be necessary to pull the existing tubular goods out of the 6 hole. 7 Yes, sir. 8 and you also might stimulate one or both 9 of these zones. 10 Yes, six. 11 Would you anticipate attempting to open 12 up any zones which are not currently open in this well? 13 I don't believe so, sir. 14 Okay. The evidence is a little unclear 15 relative to Atoka liquids, exactly what may be produced. 16 Would Phillips have any problem with testing this well for 17 a 90-day period, reporting any liquid production to the Divi-18 sion so we can evaluate that, whether there ought to be some 19 sort of separation between the two zones? 20 I don't think we'd have a problem with 21 that. 22 Okay. 23 Any other questions of this witness? 24 MR. KELLAHIN: No, sir. 25 MR. STAMETS: He may be excused.

there is nothing further, we'll take the case under advisement. (Hearing concluded.) 

CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sary W. Royd CSE

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. heard by me on\_ Examiner Oil Conservation Division



# STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO B7501 (505) 827-2434

August 7, 1981

| Mr.  | Thoma  | s Ke | llahin  |
|------|--------|------|---------|
| Kel: | lahin  | & Ke | llahin  |
|      | rneys  |      |         |
| Post | t Offi | ce B | ox 1769 |
| Sant | ta Fe, | New  | Mexico  |

CASE NO. ORDER NO.R-6755

Applicant:

Phillips Petroleum Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly, JOE D. RAMEY Director

JDR/fd

Copy of order also sent to:

Hobbs OCD Artesia OCD Aztec OCD

Other

# STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT GIL CONSERVATION DIVISION

IN THE HATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7313 Order No. R-6755

APPLICATION OF PHILLIPS PETROLEUM COMPANY FOR DOWNHOLE COMMINGLING, EDDY COUNTY, NEW MEXICO.

# ORDER OF THE DIVISION

# BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 29, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 7th day of August, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

# FINDS:

- (I) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Phillips Petroleum Company, is the owner and operator of the Drag A Well No. 1, located in Unit C of Section 18, Township 23 South, Range 27 East, NMPM, South Carlsbad Field, Eddy County, New Mexico.
- (3) That the applicant seeks authority to commingle Atoka and Morrow production within the wellbore of the above-described well.
- (4) That from the Atoka zone, the subject well is capable of low marginal production only.
- (3) That from the Morrow zone, the subject well is capable of low marginal production only.
- (6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

-2-Ceae No. 7313 Order No. R-6755

- (7) That the reservoir characteristics of each of the subject zones appear to be such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.
- (8) That the applicant should determine the rate of liquida production 90 days after commingling.
- (9) That the Director of the Division should require the installation of a standing valve or other zone separation equipment if the rate of liquids production should appear excessive.
- (10) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Artesia district office of the Division any time the subject well is shut-in for 7 consecutive days.
- (ll) That in order to allocate the commingled production to each of the commingled zones in the well, applicant should consult with the supervisor of the Artesia district office of the Division and determine an allocation formula for each of the production zones.

# IT IS THEREFORE ORDERED:

- (1) That the applicant, Phillips Petroleum Company, is hereby authorized to commingle Atoka and Morrow production within the wellbore of the Drag A Well No. 1, located in Unit C of Section 18, Township 23 South, Range 27 East, NHPM, South Carlsbad Field, Eddy County, New Mexico.
- (2) That the applicant shall consult with the Supervisor of the Artesia district office of the Division and determine an allocation formula for the allocation of production to each zone in the subject well.
- (3) That approximately 90 days following the date of downhole commingling the applicant shall conduct a production test on said well to determine its volume of liquids production.
- (4) That the applicant shall notify the Artesia district office of the Division of the date and time of such test in order that it may, at the option of the Division, be witnessed.

-3... Cupe No. 7313 Order No. R-6755

- (5) That the results of such test shall be reported to the Director of the Division within 15 days following the date thereof.
- (6) That based upon the evidence from such test the Director of the Division may require the installation of a standing valve or other zone separation equipment in said well.
- (7) That the operator of the subject well shall immediately notify the Division's Artesia district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.
- (8) That jurisdiction of this cause is retained for the entry of such further orders as the Division may doen necessary.

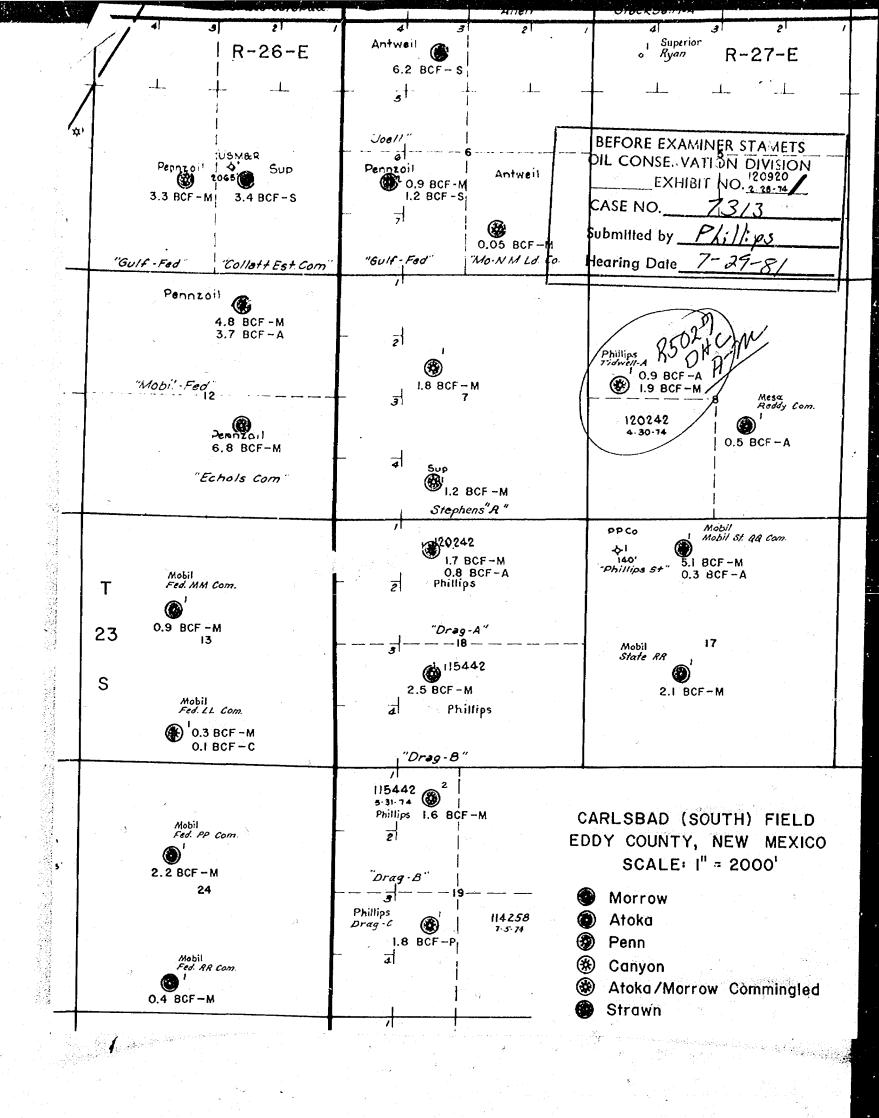
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

S E A

STATE OF NEW MEXICO
OLL CONSERVATION DIVISION

JOE D. RAMEY Director

fd/



#### PHILLIPS PETROLEUM COMPANY 4001 Penbrook Street Odessa, Texas 79762

1. Lease Name: Drag-A

2. Well No.:

3. Well Location: Unit C, 660 feet from North line, 1980 feet from West line of Section 18, Township 23-S Range 27-E, Eddy County, New Mexico.

4. Upper Zone: Carlsbad, South (Atoka)

5. Completion Interval: 10,688'-10,799'.

6. Lower Zone: Carlsbad, South (Morrow).

7. Completion Interval: 11,550'-11,676'.

8. Dual Completion Authorized by Commision Order No. MC-1993.

9. Latest Well Test Summary

| • • • • • • • • • • • • • • • • • • • | Carlsbad, South<br>(Atoka) | Carlsbad, South<br>(Morrow) |
|---------------------------------------|----------------------------|-----------------------------|
|                                       | (Upper Zone)               | (Lower Zone)                |
| Current Status                        | SI                         | Flowing                     |
| Gas Mcf/day                           | 104                        | 6 0 4 4                     |
| Cond. Bbls/day                        | 0                          | <b>0</b>                    |
| Water Bhls/day                        | 0                          | 0                           |
| Date                                  | November, 1972             | June 6, 1981                |

10. Calculated Bottom-hole Pressure from SIWHP of Upper Zone: 637 psi. F1 @ 10111' (887 psi).

11. Calculated Bottom-hole Pressure from SIWHP of Lower Zone: 519 psi.

By: J. L. Blevins

Date: 7-22-81

EEFORI E A INER JAMETS
CIL CONSE VATION DIVISION
EXHIBIT NO. 2

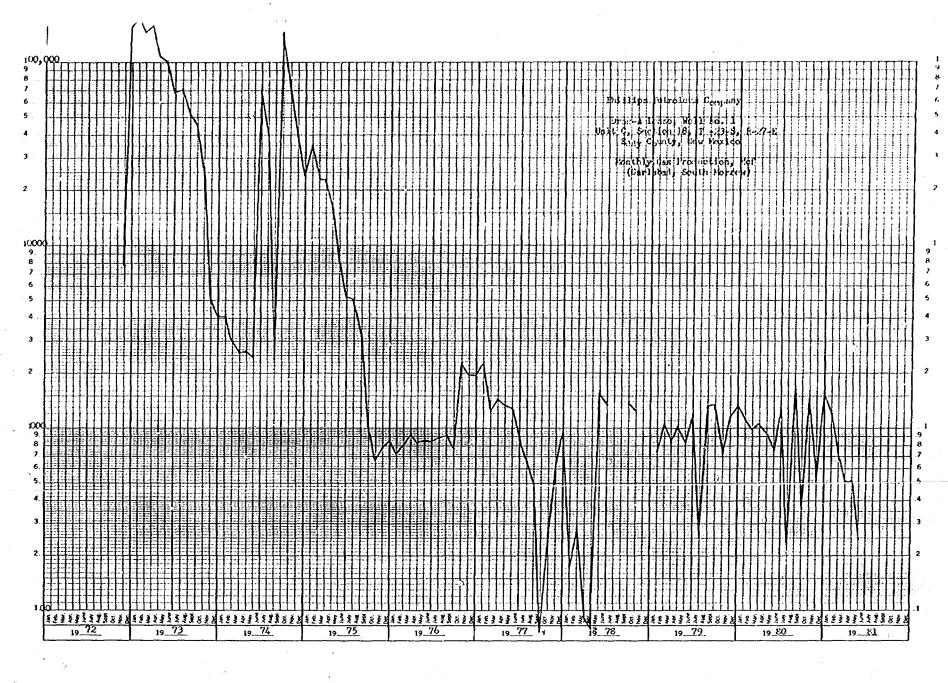
CASE NO. 23/3

Submitted by Philips

Hearing Date 7-29-8/

3217' GL 13-3/8" Csg set @ 370' W/450 sx class H cement W/2% CaCl2. Circulated 30 sx. \_ 3701 8-5/8" Csg set @ 5468' W/1,000 sx Tr. LW and 250 sx Class H cement, casing rotated. TOC @ 2150' by temperature survey. BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION jexhibit no. 🔞 CASE NO. Submitted by Phillips Hearing Date 7-29-81 54681 5-1/2" Csg set @ 11,875! W/550 sx Class H W/3/4% CFR2 W/8# salt/sack, casing rotated. TOC @ 7950! by temperature survey. Atoka Zone is perforated with 42 holes, 10,688-10,799 feet. Morrow Zone is perforated with 50 holes, 11,550-11,676 feet. 2-7/8" tubing to be set at about 11,670' \_ 11,806' PTD \_\_ 11,875' TD REVISION CHKD APP'D FOR BIDS AFE NO. FILE CODE PHILLIPS PETROLEUM COMPANY 66 **66** FOR APPR BARTLESVILLE, OKLAHOMA SCALE None FOR CONST UNLESS OTHERWISE NOTED Drag-A No. 1 DWG 660' FNL & 1980' FWL, Section 18, T23S, R27E NO. 7-21-81 DRAWN Eddy County, New Mexico CHECKED SH PROPOSED COMPLETION APP'D FORM 1779 6-76

47 6740



### PHILLIPS PETROLEUM COMPANY

DRAG-A LEASE, WELL NO. 1
UNIT C, SECTION 18, T-23-S, R-35-E
EDDY COUNTY, NEW MEXICO

## PRODUCTION HISTORY CARLSBAD, SOUTH FIELD

| YEAR &    | MORROW    | ATOKA    |  | YEAR &    | MORROW    | ATOKA                                 |
|-----------|-----------|----------|--|-----------|-----------|---------------------------------------|
| MONTH     | GAS, Mcf  | GAS, Mcf |  | MONTH     | GAS, Mcf  | GAS, Mcf                              |
| 1972      | ero.      |          |  | 1974      |           |                                       |
| JAN       |           |          |  | JAN       | 4,022     | ZONE                                  |
| FEB       |           |          |  | FEB       | 3,046     | SHUT-IN                               |
| MAR       |           |          |  | MAR       | 2,639     | 01-74                                 |
| APR       |           |          |  | APR       | 2,655     | 0                                     |
| MAY       | 600       | 233      |  | MAY       | 2,467     | o o                                   |
| JUN       | 0         | 0        |  | JUN       | 71,422    | ŏ                                     |
| JUL       | ŏ         | ŏ        |  | JUL.      | 41,314    | ŏ                                     |
| AUG       | ŏ         | ő        |  | AUG       | 2,437     | ŏ                                     |
| SEP       | ŏ         | ŏ        |  | SEP       | 143,392   | ő                                     |
| OCT       | ő         | ŏ        | <u> </u>   | OCT       | 77,341    | ŏ                                     |
| NOV       | 7,828     | 978      |  | NOV       | 41,265    | ŏ                                     |
| DEC       | 155,384   | 8,280    |  | DEC       | 24,835    | ŏ                                     |
|           |           |          | The second secon |           |           | · · · · · · · · · · · · · · · · · · · |
| TOTAL YR. |           | 9,491    |  | TOTAL YR. | 416,835   | 0                                     |
| ACCUM.    | 163,812   | 9,491    |  | ACCUM.    | 1,557,178 | 9,491                                 |
|           |           |          |  |           |           |                                       |
| 1973      |           |          |  | 1975      |           |                                       |
| JAN       | 182,892   | 0        |  | JAN       | 36,914    | 0                                     |
| FEB       | 141,641   | 0        |  | FEB       | 23,891    | 0                                     |
| MAR       | 156,274   | 4 0      |  | MAR       | 22,954    | 0                                     |
| APR       | 117,260   | 0        | 2  | APR       | 16,305    | 0                                     |
| MAY       | 102,748   | 0        |  | MAY       | 8,300     | 0                                     |
| JUN       | 70,615    | 0        |  | JUN       | 5,374     | 0                                     |
| JUL       | 71,094    | 0        |  | JUL       | 5,112     | 0                                     |
| AUG       | 53,146    | 0        |  | AUG       | 3,350     | , 0                                   |
| SEP       | 46,774    | 0        |  | SEP       | 1,044     | . 0                                   |
| OCT       | 24,983    | 0        |  | OCT       | 685       | 0                                     |
| NOV       | 5,001     | 0        |  | NOV       | 781       | . 0                                   |
| DEC       | 4,103     | 0        |  | DEC       | 872       | . 0                                   |
| TOTAL YR. | 976,531   | 0        |  | TOTAL YR. | 125,582   | 0                                     |
| ACCUM.    | 1,140,343 | 9,491    |  | ACCUM.    | 1,682,760 | 9,491                                 |
|           |           | •        |  |           |           | -                                     |

| BEFORE EXAMINER STAMETS   |
|---------------------------|
| OIL CONSE VATION DIVISION |
| EXHIBIT NO. 6             |
| CASE NO. 73/3             |
| Submitted by Phillips     |
| Hearing Date 7-29-8/      |
|                           |

DRAG-A LEASE, WELL NO. 1

## PRODUCTION HISTORY, CONTINUED

| YEAR & MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |   | YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |
|--------------|--------------------|-------------------|---|-----------------|--------------------|-------------------|
| 1976         |                    |                   |   | 1978            |                    |                   |
| JAÑ          | 733                | 0                 |   | JAN             | 175                | 0                 |
| FEB          | 808                | 0                 |   | FEB             | 285                | 0                 |
| MAR          | 924                | 0                 |   | MAR             | 72                 | 0                 |
| APR          | 830                | 0                 |   | APR             | 36                 | 0                 |
| MAY          | 849                | 0                 |   | MAY             | 1,598              | 0                 |
| JUN          | 852                | 0                 |   | JUN             | 1,358              | . 0               |
| JUL          | 887                | . 0               |   | JUL             |                    | 0                 |
| AUG          | 914                | 0                 |   | AUG             |                    | 0                 |
| SEP          | 779                | 0                 |   | SEP             | 1,384              | 0                 |
| OCT          | 2,238              | 0                 |   | OCT             | 1,261              | 0                 |
| NOV          | 1,984              | 0                 |   | NOV             |                    | 0                 |
| DEC          | 1,976              | 0                 |   | DEC             |                    | 0                 |
| TOTAL YR.    |                    | 0                 |   | TOTAL YR.       | 6,169              | 0                 |
| ACCUM.       | 1,696,574          | 9,491             | 3 | ACCUM.          | 1,714,035          | 9,491             |
| <u>1977</u>  |                    |                   |   | 1979            |                    |                   |
| JAN          | 2,214              | 0                 |   | JAN             | 758                | 0                 |
| FEB          | 1,226              | 0                 |   | FEB             | 1,050              | 0                 |
| MAR          | 1,436              | .0                |   | MAR             | 851                | 0                 |
| APR          | 1,343              | 0                 |   | APR             | 1,029              | 0                 |
| MAY          | 1,291              | 0                 |   | MAY             | 829                | 0                 |
| JUN          | 858                | . 0               |   | JUN             | 1,141              | 0                 |
| JUL          | 655                | 0                 |   | JUL             | 254                | 0                 |
| AUG          | 489                | 0                 |   | AUG             | 1,316              | 0                 |
| SEP          | 4                  | 0                 |   | SEP             | 1,324              | 0                 |
| OCT          | 257                | 0                 | 1 | OCT             | 728                | 0                 |
| NOV          | 587                | 0                 |   | NOV             | 1,172              | 0                 |
| DEC          | 932                | 0                 |   | DEC             | 1,338              | 0                 |
| TOTAL YR.    | 11,292             | 0                 |   | TOTAL YR.       | 11,790             | 0                 |
| ACCUM.       | 1,707,866          | 9,491             |   | ACCUM.          | 1,725,825          | 9,491             |

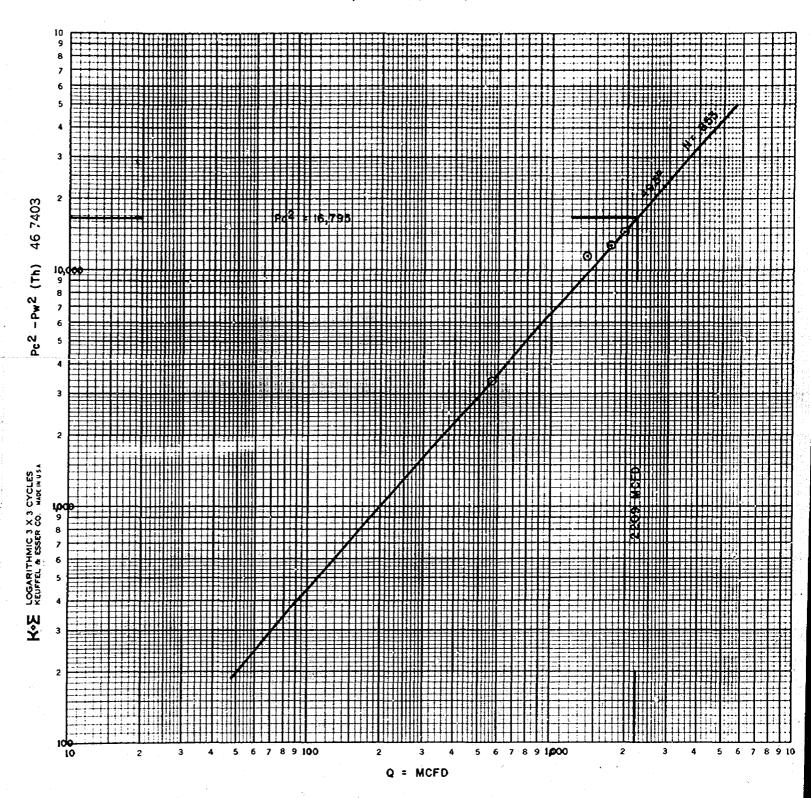
DRAG-A LEASE, WELL NO. 1
PRODUCTION HISTORY, CONTINUED

| YEAR &    | MORROW      | ATOKA    |
|-----------|-------------|----------|
| MONTH     | GAS, Mcf    | GAS, Mcf |
| 1980      |             |          |
| JAN       | 1,103       | 0        |
| FEB       | 997         | . 0      |
| MAR       | 1,055       | 0        |
| APR       | 959         | 0        |
| MAY       | 771         | 0        |
| JUN       | 1,293       | 0        |
| JUL       | 238         | 0        |
| AUG       | 1,647       | 0        |
| SEP       | <b>´387</b> | 0        |
| OCT       | 1,482       | 0        |
| NOV       | 648         | 0        |
| DEC       | 1,547       | 0        |
| TOTAL YR. | 12,127      | 0        |
| ACCUM.    | 1,737,952   | 9,491    |
| 1981      |             |          |
| JAN       | 1,245       | 0        |
| FEB       | 749         | 0        |
| MAR       | 513         | 0        |
| APR       | 512         | 0        |
| MAY       | 249         | 0        |
| TOTAL YR. | 3,268       | 0        |
| ACCUM.    | 1.741.220   | 9,491    |

## NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| 7              | ype Test  |  |             |                                |       | <del></del>                   |                 |               |                            | 7                  | Test Date    | <del></del>    | <u> </u>    |  | · · · · · · · · · · · · · · · · · · · |
|----------------|---|--|-------------|--------------------------------|-------|-------------------------------|-----------------|---------------|----------------------------|--------------------|--------------|----------------|-------------|--|---------------------------------------|
| - 1            |   | nitial 🖟   | }           | •                              |       | Annual                        |                 |               | Spe                        | cial               | 5-25-        | 72             | Fed.        | Lse.#N                                 | M0540701-A                            |
|                | Company Connection                                      |  |             |                                |       |                               |                 |               |                            |                    |              |                |             |  |                                       |
|                | Phillips Petroleum Company   Shut in pending connection |  |             |                                |       |                               |                 | _             |                            |                    |              |                |             |  |                                       |
| Po             | ool   | <del></del>                                      |             |                                |       |                               | ation           | <del></del>   |                            |                    |              | **********     | Unit        | <del></del>                            |                                       |
| ·   (          | Carsbad,  | South  | (Ato        | oka) Ga                        | s     | At                            | oka             | *             |                            |                    |              |                |             | •                                      |                                       |
| Co             | empletion Date  | ;  | 7           | Fotal Depth                    |       |                               |                 | Plug Back     | TD.                        |                    | 3217 G       |                | Farm o      | Lease Na                               | we                                    |
|                | 5-16-72   |  |             | 1187                           | 5     |                               |                 | 11            | .806                       | - 1                | 3217 G       | r.             | Dr          | ag-A                                   |                                       |
| Cs             | g. Sizo   | Wi.  | <del></del> | d                              | Se    | t At                          |                 | Perforatio    | ns;                        |                    | Well No.     |                |             | 95 <u>-0</u>                           |                                       |
|                | 5-1/2"  | 17#,   | 20#         | 3.434                          | 1     | 11875                         |                 | From          | 10686                      | To                 | 10799        |                |             | 1                                      |                                       |
| 77             | og. Sizo  | Wt.  | . 1         | d                              | Se    | LAL                           |                 | Perioralia    | ne:                        |                    |              |                | Unit        | Sec.                                   | Twp. Rg€.                             |
| L              |   |  |             |                                |       |                               |                 | From          | ** **                      | T                  |              |                | C           | 18 2                                   | 3-S 27-E                              |
| T              | re Well - Sing  | le – Brad  | enhead      | -G.G. or G                     | .о. м | ultiple                       |                 |               | Packer S                   | ot At              |              |                | County      |  | ,                                     |
|                | G. G. Mul   |  |             |                                |       |                               |                 |               |                            | 114                |              |                | ,           | Eddy                                   |                                       |
| Fr             | oducing Thru  |  |             | oir Temp. *F                   | •     | Mean A                        | nnual           | Temp, *F      | Baro, Pre                  | 88                 | Pa           |                | State       |  |                                       |
| *              | nnulus  |  | 176         | 9 11800                        |       |                               | 60              |               |                            | 13.2               |              |                | N           | ew Mex                                 | ico                                   |
|                | L   | H  | _           | Gq                             |       | % CO 2                        |                 | % N 2         |                            | % н <sub>2</sub> ѕ | Pro          | AGI            | Meter       |  | Taps                                  |
|                | L0688   | 1068   |             | .6003                          |       | .01                           | 47              | .0            | 07                         | -                  |              |                | 3           | 11                                     | Flange                                |
|                |   |  | FL          | OW DATA                        | 4     |                               |                 |               | TUE                        | ING                | DATA         | CA             | SING        | DATA                                   | Duration                              |
| NO             | Prover  | ^  | rifice      | Press.                         |       | Diff                          | .               | Temp.         | Pres                       |                    | Temp.        | Pres           |             | Temp.                                  | 10                                    |
| _              | Size  |  | Size        | p.s.i.g.                       |       | μ <sup>M</sup>                | ]               | *F            | p.s.i.                     |                    | •F           | p.e.i          |             | * F                                    | Flow                                  |
| SI             |   |  |             |                                | -     |                               |                 |               | 4098                       |                    |              | 408            |             | 81                                     |                                       |
| 1.             | 3.068   |  | 1.00        | 160                            |       | 50                            |                 | 92            | Morro                      |                    |              | 367            |             | 81                                     | 1 hr.                                 |
| 2.             | <del> ;;</del>  |  | L.75        | 450                            |       | 10                            |                 | 84            | Comp 1                     |                    | <b>p</b>     | 229            |             | 82                                     | 11                                    |
| 3.             | <del>  "</del>  |  | L. 75       | 410                            |       | 17                            |                 | 80            | Shut-                      | n                  | ļ            | 196            |             | 82                                     | 17                                    |
| 4.             | - <del></del>   | ]  | 1.75        | 410                            |       | 22                            |                 | 86            |                            |                    | <u> </u>     | 151            | 4           | 83                                     | 11                                    |
| 5.             | 5.  |  |             |                                |       |                               |                 |               |                            |                    |              |                |             |  |                                       |
| ļ,             | RATE OF FLOW CALCULATIONS                               |  |             |                                |       |                               |                 |               |                            |                    |              |                |             |  |                                       |
| ĺ              | Coeffic   | ient   |             | _ /                            | -     | Pres                          | eane            | į.            | v Temp.                    |                    | Gravity      | į.             | neer        | R                                      | te of Flow                            |
| NO.            | [24 Ho  | ur)  |             | √հ <sub>w</sub> ₽ <sub>m</sub> | ı     | F                             | m               | F             | actor<br>Ft.               |                    | Factor<br>Fa | I.             | or, Fpv     |  | Q, Meid                               |
| 1              | 4.789   |  |             | 93.06                          |       | 173.                          |                 | <del>- </del> | <del></del>                |                    |              |                | F. (1       |  |                                       |
| 2.             | 15.61   |  |             | 68.06                          |       | 463.                          |                 |               |                            |                    |              | 013            |             | 561                                    |                                       |
| 3.             | 1 13.01   |  |             | 84.82                          |       | 423.                          |                 |               |                            |                    |              | 1.035<br>1.033 |             | 376<br>718                             |                                       |
| 4.             | 1   |  |             | 96.49                          |       | 423.                          |                 |               | 759                        | -                  | <u> </u>     | 1.033          |             |  | 944                                   |
| 5.             | <del> </del>  |  |             | 70.47                          |       | 423.                          | <u> </u>        | <del> </del>  | 7.7                        | <del></del>        |              | <del> </del>   | <i>)</i>    |  | 944                                   |
| \ <u> </u>     |   | <del>,                                    </del> |             |                                | l.    |                               | ~               |               |                            |                    |              | <del></del>    | <del></del> |  |                                       |
| NO.            | Pr  | Temp.  | *R          | T <sub>i</sub>                 |       | z                             | i               | Liquid Hy     |                            |                    | artons       |                | -           | ······································ | McI/bbl.                              |
| 1.             | Calcula   | ions   | made        | by E14                         | ctr   | onic                          | Snee            | iffe Gravity  | vi Liquid f<br>v Senaralar | · Cas              | .60          |                |             | 1 4 4 4                                | XXXXXX                                |
| 2.             | Calcula   |  |             |                                |       |                               |                 | ille Gravii   |                            |                    |              | XXXX           |             | 1000                                   |                                       |
| 3.             | New Mex   | r  |             |                                |       |                               |                 | ical Pressu   |                            |                    |              |                | P.S.I.      |  | P.S.I.A.                              |
| 4.             | Pressur   |  |             |                                |       |                               |                 | ical Tempe    |                            |                    |              |                |             | R                                      | я                                     |
| 5              |   | >  |             |                                |       |                               |                 |               |                            |                    |              |                |             |  |                                       |
| F <sub>C</sub> | 4098.2  | _P <sub>c</sub> 2                                | 1679        |                                |       |                               |                 | р 2           |                            | 147                | 105          | Г              | D 2         | ٦'n                                    | 1 136/                                |
| NO             | P <sub>1</sub> 2  | P <sub>w</sub>                                   |             | P <sub>w</sub> <sup>2</sup>    | Pc2.  | - P <sub>w</sub> <sup>2</sup> | (1).            |               | =                          | 17.7.              | 95<br>57     | (2)            | 2 2         | -                                      | 1.1304                                |
| 1              | 13,610  | 3689   | .3 1        | 3.611                          | 3     | 184                           |                 | Pc" - PW      |                            | 144                | 137          | L P            | - W         | ٦                                      |                                       |
| 2              | 53,278  | 2308   |             | 5 331                          | 11 4  | 464                           |                 | -             |                            | ٦.                 |              |                |             |  |                                       |
| 3              | 39,014  | 1976   | .3          | 3,906                          | 12,   | 889                           | AOF             | = 0           | Pc2                        | .   n =            | 2209         |                |             |  | ·                                     |
| 4              | 23,323  | 1529   | .2          | 2,338                          | 14,4  | 457                           |                 | . [           | $P_c^2 - P_w^2$            | J                  |              |                |             |  |                                       |
| 5              | <u> </u>  | <u> </u>   |             |                                |       |                               |                 |               |                            |                    |              |                |             |  |                                       |
| Sho            | olute Open Fl   | low.   |             | 2209                           |       |                               |                 | الماملان      | ,,,,,,                     | An-1-              | of Store 6   | 49.            | 5           | S                                      | .853                                  |
| Abs            |   |  |             |                                |       |                               | <b>3</b> € 26 € | McId 6        |                            |                    | of Slope & _ |                |             | {Slope,                                | "                                     |
| Hen            |   |  |             | ouble b                        |       |                               |                 |               |                            |                    | s            | <del></del>    |             |  |                                       |
|                | ^ 10  | be pr  | oauce       | ed thro                        | ugn   | cas1                          | ng/1            | tubing        | annutu                     | <u>s.</u>          |              |                |             |  |                                       |
| App            | roved By Com  | mission:   |             | Conduct                        | ed By |                               |                 | <del></del>   | Calculated                 | By:                |              | 10             | hecked      | By:                                    |                                       |
| 1              |   |  |             | (                              | -     | Simps                         | on              | 1             |                            |                    | impson       |                |             | J. Mue                                 | ller                                  |
|                |   |  |             |                                |       |                               |                 |               |                            | <del></del>        |              |                |             |  | <del></del>                           |

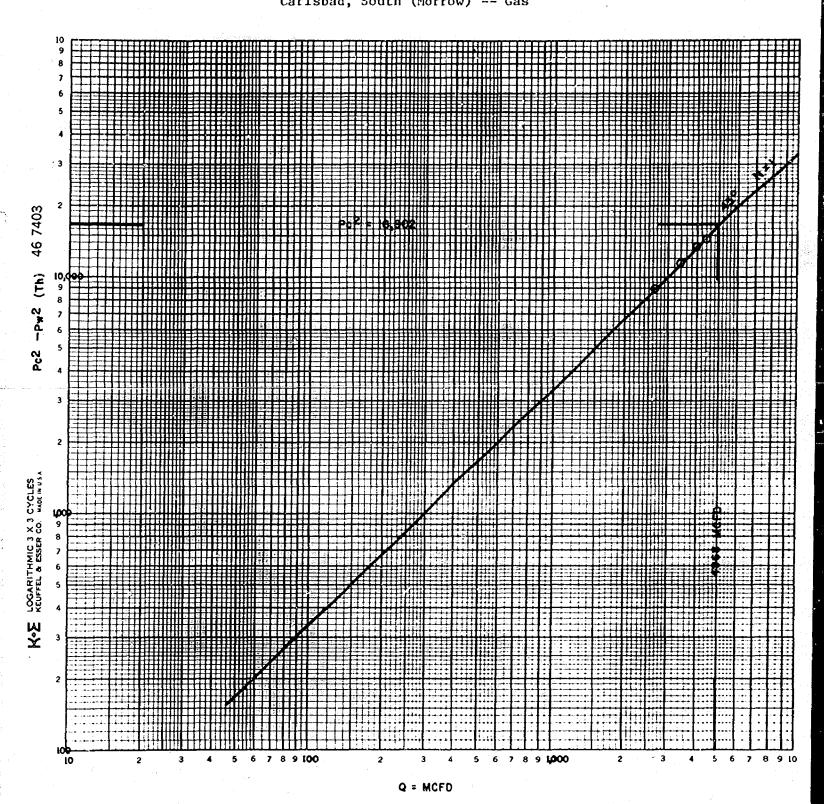
Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Atoka) -- Gas



## NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| Ty                                     | pe Test              | رت. ا  | T.,, J       |          |                             |               |                               |             |                          | (                             | , , i              | Test Dat         |               |              |               |             |                  |
|--|----------------------|--------|--------------|----------|-----------------------------|---------------|-------------------------------|-------------|--------------------------|-------------------------------|--------------------|------------------|---------------|--------------|---------------|-------------|------------------|
| <u></u>                                | mpany                | للا    | Initial      |          |                             |               | Annual                        | ection      |                          | ☐ Spe                         | ecial              | 5-25             | 5-72          | Fed.         | Lse.          | NMO         | 540701-A         |
|  |                      | 1      | 0. +         | 1        | Camaaa                      |               |                               |             |                          | المناسبة                      |                    |                  |               |              |               | •           |                  |
| Po                                     |                      | 95     | retro        | Tem      | Compan                      | <u>y</u>      |                               | ation       | ut in pending connection |                               |                    |                  | Linti         | Unit         |               |             |                  |
|  |                      | id.    | Sout         | h (Mo    | orrow)                      | Gas           | 1                             | rro         | J                        |                               |                    |                  |               |              | عند جند       |             |                  |
| _                                      | npletion [           |        |              |          | otal Depth                  |               |                               |             | Plug Bac                 | k TD                          |                    | 512171en         |               | Farm o       | r Lease I     | Name        |                  |
|  | -21-72               |        |              |          | 11,875                      | 1             |                               |             | 11,8                     | 306'                          |                    | 32371            | or.           | Dra          | Drag-A        |             |                  |
| Cs                                     | g. Size              | T      | vi.          |          | 1                           | TS.           | I At                          |             | Perforati                | ona;                          |                    |                  |               | Well No      |               |             | <del></del>      |
| 5                                      | -1/2"                | _ [ ]  | 17#,         | 20#      | 3.434                       | 1             | 1,875                         |             | From 1]                  | ,550 to                       | T                  | $0.11, \epsilon$ | 576'          | <u> </u>     | 1             |             |                  |
|  |                      |        |              |          |                             |               |                               | 1           | Perforation              | ons:                          | ~                  |                  |               | Unit         | Sec.          | Tw          |                  |
| 77                                     | -//8"                | 1501   | 5.5#         | enhoad.  | 2.441<br>-G.G. or G         | $\frac{1}{1}$ | 1,470                         |             | From                     | Packer S                      | T.                 |                  | <u> </u>      | County       | 18            | 23          | -S 27-E          |
| '"                                     |                      |        |              |          | -0,0,0,0                    |               |                               |             |                          | 1                             |                    | 0.1              |               | Cominy       |               |             |                  |
| F.to                                   | ducing Th            |        | Mult         |          | oir Temp. •I                |               | Mean A                        | lounual     | Temp. *F                 | Baro, Pr                      | 1,4/<br>ess. ~     | <u>P.</u>        |               | State        | Eddy          |             | <del></del>      |
| T                                      | uhine                |        |              |          | 11800                       |               |                               | 60°         | · .                      | 1                             |                    | <b>Q</b>         |               | Nev          | Mexi          | co          |                  |
|  | L                    | T      | н            |          | G <sub>9</sub>              |               | % CO                          | <u>~~~</u>  | % N 2                    | 17                            | % H <sub>2</sub> S | <u> </u>         | 210461        | Moter        |               |             | ps               |
| 1                                      | 1550                 |        | 11550        | o        | .5782                       |               | .01                           |             |                          | 26                            |                    |                  |               | 3"           | ı             | F           | lange            |
|  |                      |        |              |          | OW DAT                      | Ą             |                               |             |                          |                               |                    | DATA             |               | ASING        |               |             | Duration         |
| NO.                                    | Prover               |        | ^            | rifice   | Press.                      | T             | DIII                          |             | Temp.                    | Pres                          |                    | Temp.            | 1             | .88          | Temp          | , ]         | oí               |
|  | Size                 |        |              | Size     | p.s.l.q.                    | _             | ħw                            |             | •F                       | p.s.f.                        | q.                 | •F               |               | .1.9.        | • F           |             | Flow             |
| SI                                     |                      |        |              |          |                             | -+            |                               |             |                          | 409                           |                    | 81               |               | 085          |               |             |                  |
| 2.                                     | 3.068                |        |              | 2.00     | 800                         | <u> </u>      | 10                            |             | 76                       | 278                           |                    | 85               |               | oka          | . <del></del> |             | l hour           |
| 3.                                     | 11                   |        |              |          | 780                         | -+            | 17<br>24                      |             | <u>72</u><br>77          | 225                           |                    | 83<br>85         |               | letion       | <u> </u>      |             | l hour           |
| 4.                                     | <del> </del> -       |        |              |          | <u>780</u><br>780           |               | 28                            |             | 74                       | 173<br>136                    |                    | 83               | Shut          | ing/ca       | cino          |             | l hour<br>l hour |
| 5.                                     |                      |        |              |          | 700                         |               |                               |             | 74                       | 130                           | <u> </u>           | 1 05             |               | ulus)        | STUE          |             | L HOUL           |
|  | L                    |        |              |          |                             |               | RAT                           | EOF         | FLOW                     | CALCUL                        | ATIO               | NS               |               | *****        |               |             |                  |
|  | Coe                  | llicie | nt           |          |                             |               | Drag                          | etuse       | Flo                      | w Temp.                       |                    | Gravity          | 7             | Super        | T             | Baie        | of Flow          |
| NO.                                    |                      | Hou    |              |          | $\sqrt{h_{w}P_{m}}$         | _             |                               |             | F                        | actor                         | İ                  | Factor           |               | mpress.      | '             |             | Meld             |
|  |                      |        | 7 3          |          |                             |               |                               | m           |                          | FI,                           |                    | Fg               |               | tor, Fpv     |               |             |                  |
| 1                                      | 21.                  | 32     |              |          | 90.18                       |               |                               | 3.2         |                          | 850                           |                    | 1.311            |               | .058         |               | 262         |                  |
| 2.<br>3.                               | <del></del>          |        |              |          | 16.12<br>37.98              |               |                               | 3.2         |                          | 887                           | <del> </del>       | 19               |               | <u>. 059</u> |               | 3398        |                  |
| 4.                                     | [1                   |        |              |          | 49.03                       |               | : 11                          |             |                          | 340 ''<br>368 ''              |                    |                  | 1.058         |              |               |             |                  |
| 5.                                     |                      |        |              |          | 7/1//                       |               |                               |             |                          | <u> </u>                      |                    |                  | _             |              | 1             | t.J.L.      | <b></b>          |
|  | Pr                   | T      | Temp.        |          | T <sub>r</sub>              |               | z                             | Gas         | Liquid Hy                | drocarbon l                   | Rallo .            |                  |               |              |               |             | Mc(/bbl.         |
| NO.                                    |                      |        |              |          |                             |               |                               | A.P.        | I. Gravity               | of Liquid 1                   | Hydroc             |                  |               | · -          |               |             | Deg.             |
| 1                                      |                      |        |              |          | by el                       |               |                               | Spec        | ille Gravii              | y Separalo                    | r Gas_             |                  | .578          |              | xx            | XX)         | CXXXX            |
| 2.                                     |                      |        |              |          | ram bas                     |               |                               |             |                          | y Flowing                     |                    |                  | XXXX          |              |               |             |                  |
| 3.<br>4.                               |                      |        |              |          | al for<br>of gas            |               |                               |             | cal Pressi               |                               |                    | 672<br>349       |               | P.S.I.       | 1             |             | P.S.I.A.         |
| 5.                                     | PT coo               |        | cest         | -"5 '    | or gas                      | WEI           | 13,                           | Critte      | cal Tempe                | tainte                        |                    | <del>,,,,</del>  | <del></del>   |              | R L           |             | R                |
| P <sub>C</sub>                         | 4111.                | 2      | $P_c^2$ 1    | 6902     |                             |               |                               |             | D 2                      |                               | 7//                | 200              | ۲             | 5.2          | 7.            | 1           | 1/15             |
| NO                                     | $P_{\mathfrak{t}}^2$ |        | Pw           |          | P <sub>w</sub> <sup>2</sup> | $P_c^2$       | - P <sub>w</sub> <sup>2</sup> | (i) _       | -2 1                     | = _                           | 103                | 206              | (2)           | *c*          | -             | <u> </u>    | 1415             |
| 1                                      | 7847                 |        | 2815.        |          | 7929                        |               | 73                            |             | Pc" - ₩                  |                               | 143                | 500              | . L           | P." - ₽%     | ١             |             | 1                |
| 2                                      | 5131                 |        | 2291.        |          | 5252                        | 116           |                               |             | r                        | 2                             | ٦٠                 |                  |               |              |               |             |                  |
| 3                                      | 3042                 |        | 1792.        |          | 3211                        | 136           |                               | AOF         | = Q                      | $\frac{P_c^2}{P_c^2 - R_c^2}$ | -   " =            | 490              | 58            | -3           |               |             | ł                |
| 5                                      | 1891                 | -      | <u>1447.</u> | <u> </u> | 2096                        | 148           | <u>ub</u>                     |             | · L                      | $P_c^2 - P_w^2$               | J                  |                  |               |              | .,            |             | İ                |
| ــــــــــــــــــــــــــــــــــــــ |                      | i_     |              |          |                             |               |                               |             |                          |                               |                    |                  |               |              | <del></del>   |             |                  |
| Absc                                   | lute Oper            | Flo    | w            | 4        | ,968                        |               |                               | <u> </u>    | McId                     | 9 15.025                      | Angle              | of Slope         | e <u>. 45</u> |              | Slop          | o, n_       | 1.00             |
| Hami                                   | rks;                 |        |              |          |                             | · · ·         |                               | <del></del> |                          |                               |                    |                  |               |              |               |             |                  |
| ,,ear                                  |                      |        |              |          |                             |               |                               |             |                          |                               |                    |                  |               |              |               |             |                  |
|  |                      |        |              |          |                             |               | 1                             |             |                          |                               |                    |                  |               |              |               |             |                  |
| Appr                                   | oved By (            | Comm   |              |          | Conduct                     |               | Arter Control                 |             | [                        | Calculated                    | 200                |                  |               | Checked      |               |             |                  |
|  |                      | •      |              |          | 1                           | D.            | E. Si                         | mpsc        | in                       | D. E                          | <u>, Si</u>        | mpson            |               | W            | J. Mue        | <u>:11e</u> | r                |

Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Morrow) -- Gas



INST 1 METH 1 FILE 28

RUN : G-434 8 : 57.3 7 / 1 / 81

| COMPONENT | FINHL MUL % |                |
|-----------|-------------|----------------|
| ≱ OS PLUS |             | 4 Possible Bem |
| 112       | .73         | Contaminant    |
| \$1       | 95,27       |                |
| 002       | -45         |                |
| ETHANE    | 2.46        |                |
| SI        | . 46        |                |
| 104       | .13         |                |
| ± N€4     | . 1         |                |
| ISS       | .37         |                |
| NC5       | .93         |                |
|           |             |                |
| TOTAL     | 128         | -              |
|           |             |                |

PRESSURE BASE AT 60 DEG. F.

|              |      | 14.595  | 14.65                   |
|--------------|------|---------|-------------------------|
| CS PLUS      | GPM  | .1291   | .1287                   |
| - ETHANE     | SPM  | . 858   | .5539                   |
| C3           | GPM  | .1262   | . 1258                  |
| 104          | GPM  | .8424   | . 0422                  |
| NC4          | GPM  | . 3314  | .8313                   |
| IC5          | SPM  | . 2255  | . 3254                  |
| HC5          | SPM  | .9108   | .3133<br>0.165<br>0.247 |
| TOTAL GPM    |      | 1.0214  | 1.8181                  |
| Z FACTOR=    |      | .997855 |                         |
| SAT. BASIS B | TU : | 327.72  | 1824.51                 |
| CAL. SP. GR. |      | .591    |                         |

BEFORE EXAMINER STAMETS

OIL CONSERVATION DIVISION

EXHIBIT NO.

ASE NO.

Smitted by A.///ps.

Ting Date 2-25-29

| INST 1          | метн       | 1          | FILE                | 48           |        |
|-----------------|------------|------------|---------------------|--------------|--------|
| RUN             | 1 5        | -429       | 2:19.3              | S 8 / 3 /    | 9      |
| · ^ .           | COMP       | ONENT      |                     | FINAL MOL %  | eta .  |
|                 | C6 P       | เบร        |                     | .09<br>.72   |        |
|                 | C1<br>CC2  | 49         |                     | 96.38<br>.67 |        |
|                 | ETHA       | NE         |                     | 1.67         | 100 mg |
|                 | 104<br>H04 |            |                     | .97<br>.96   |        |
|                 | ICS<br>MCS |            |                     | . 94         |        |
|                 | TOTA       |            |                     | .92          |        |
| Specifice       |            | · · ·      |                     | 199          |        |
| <b>ドベミランひださ</b> | anse       | ni bi      | 9 DEG. F.<br>14.696 | 14.65        | 5      |
| CS PI           |            |            | .0387               | .93          |        |
| ETHA:           | HE .       | GPM<br>GPM | .4453               | .44          | 39     |

|                         |             |            |             | )<           | 54        | 29           |      |
|-------------------------|-------------|------------|-------------|--------------|-----------|--------------|------|
| Sampler C/              | (N. 086)    | Wells . T. | Formation . | म्बर ज्य     | CountyE.S | E G          | Date |
| Sampler CARRRY. JETTAN. | 7-8/ W 18-7 |            | ///a.e.e.p. | uth CAR      | 3/2       | หั           | アルイン |
| ttan.                   | がなって        |            | ARROW Co    | CARLEDAS     | 62160     | ·            | •    |
| Bomb Press . 3.5        | 100 JOS     | 7.0.<br>8  | Eleni C     | Type of Trap | Gas Temp  | Aimos. Temp, | Samo |
| \$ CO                   |             | 800        | Day.        | Trap         | 4400      | 7.00         |      |

|   |       | 14,070  | 14.65   |
|---|-------|---------|---------|
| CS PLUS                                 | GPM   | .0387   | .9386   |
| ETHANE                                  | GPM   | .4453   | .4439   |
| 03                                      | GPM   | . 9768  | .0766   |
| IC4                                     | GPM   | .0228   | .8227   |
| NC4                                     | SPM   | . 3133  | .8138   |
| √I25                                    | GPM   | .0146   | .0145   |
| HC5                                     | GPM   | .8072   | .3872   |
| TOTAL GPM                               |       | .5242   | .5223   |
| Z FACTOR=                               |       | .997966 |         |
| SAT. BASIS BY                           | ับ 19 | 005.2   | 1992.05 |
| CAL. SP. GR.                            |       | .58     |         |
| • |       |         |         |

BEFORE EXAMINERS, OIL CONSERVATION C EXHIBIT NO. 12 CASE NO. 73/3 Submitted by Philleps Hearing Date 7-29-51

DRAG 'A' NO. 1
ECONOMICS OF COMMINGLING
MORROW AND ATOKA FORMATIONS

| Year  | Case 1: Comm  | ingled Production                             | Case 2: Indiv  | idual Production   |
|---|---|---|--|--|
|   | Gas (MCF)   | Cash Flow (\$)                                | Gas (MCF)  | Cash Flow (\$)   |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11 | 65,897<br>38,361<br>22,713<br>13,720<br>8,477<br>5,370<br>3,513 | 74,477 42,729 24,629 14,166 8,000 4,277 1,979 | 10,611<br>8,020<br>6,061<br>4,581<br>3,462<br>2,617<br>1,998<br>55,286<br>30,341<br>16,652<br>9,139<br>5,015 | 10,986<br>7,885<br>5,506<br>3,671<br>2,241<br>1,115<br>240<br>60,841<br>31,964<br>15,988<br>7,085<br>2,049 |
| Total   | 158,051 MCF   | \$170,257                                     | <br>153,783 MCF  | \$149,571  |

Increase in reserves = 4,268 MCF Increase in Cash Flow = \$20,686.

| BEFORE EXAMINER STAMETS   |
|---------------------------|
| OIL CONSERVATION DIVISION |
| EXHIBIT NO.               |
| CASE NO. 73/3             |
| Submitted by Phillips     |
| Hearing Date 7-79-81      |
|                           |

March 2, 1972

Location: 660' FNL and 1980' FWL, Sec 18, T-23-S, R-27-E, Eddy County, New Mexico.

Drld 17-1/2" hole to 370. Cmt'd 13-3/8" at 370' w/ 450 sx Class "H". Circ'd 30 sx cmt.

Cmt'd 8-5/8" csg at 5468' w/ 1000 sx Trinity LW cmt w/ 3# Gilsonite per sx followed by 250 sx Class "H" Neat cmt. Ran temp survey, top cmt outside 8-5/8" csg 2150'.

Ran 360 jts 5-1/2" csg at 11875'. Cmt'd w/ 550 sx Class "H" cmt. Ran temp survey, top cmt outside 5-1/2" csg at 7950'.

Set Baker Model F-1 prod pkr at 11470'. Schlum perf'd Atoka in 5-1/2" csg thru 2-7/8" tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot 10688-10691' 10694-10697', 10744-10750', 10794-10799'. SI 4-1/2 hrs, SICP 600#. Howco treated Atoka w/ 2500 gals 15% acid dwn tbg thru perfs 10686-10799'. Max press 4400#, min 4250#, inst SDP 4200#, 15-min SIP 3800#, 1-hr 2800#. SI 10 hrs, SITP 2200#, SICP 3400#. Flwd tbg to pit 2-3/4 hrs to clean up, FTP 2200# to 100#, rec 150 BLW, CP 3400#-500#. Flowed from csg 2 hrs, 1/4" ch, thru low press separator, gas rate 184 MCFD, FCP 500# to 700#. SI 3 hrs, SICP 700# to 1500#. Flowed thru csg 1 hr to high press separator, 10/64" ch, gas rate 795 MCFD, FCP 1700#, separator press 750# at 86° F. Flowed 2 hrs, 1/4" ch, from csg, gas rate 1400 MCFD, FCP 1150#, separator press 725# at 86° F. Flowed 3 hrs, 13/64" ch thru csg, gas rate 1000 MCFD, FCP 1200#, separator press 725# at 82° F. SI 10 hrs, SITP 3600#, SICP 3800#. SITP 4400#, CP 4600#. Howco treated Atoka down csg thru perfs 10686-10799' w/ 7500 gals 20% CRA acid. Max press 6000#, min 5000#, inj rate 6 BPM, inst SDP 4300#, 15-min 4200#, 90-min 3800#. Flowed 14 hrs thru tbg, 1/2" ch, gas rate 307 MCFD, specific gvty .599, no sulphur, 1.06 MOL CO2, 7-1/2 BLW, FTP 450#, CP 600#. SI 3 hrs, SITP 1600#, CP 1900#. 22nd, flowed thru csg 8 hrs, 13/64" ch, last 3 hrs on stabilized rate 1,300 MCFD, FCP 1150#, separator 820# at 90° F. SI 16 hrs, SICP 3700#.

May 22, 1972

Closed Baker sleeve at 11,451'. Atoka in csg annulus. Schlum perf'd Morrow in 5-1/2" csg thru tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot, 11649-11653', 11550-11554', 11669-11676', 11604-11610'. SITP 2500#. Flowed 1 hr at stabilized rate 4100 MCFD, 3/8" ch, FTP 2600#, separator 800# at 60° F, 1/2 BLW. SI 9 hrs, SITP 3900#. Atoka zone shut in 49 hrs in csg, SICP 4100#. Morrow zone shut in 43 hrs in tbg, SITP 4300#. Atoka on 4-pt BP test: SICP 4085# first rate 1 hr, 6/64" ch, gas rate 534 MCFD, FCP 3676#; 2nd rate 1 hr, 10/64" ch gas rate 1348 MCFD, FCP 2275#; 3rd rate 1 hr, 12/64" ch, gas rate 1678 MCFD, FCP 1962# 4th rate 1 hr, 15/64" ch, gas rate 1909 MCFD, FCP 1514#. Specific gvty .602, no sulphur. Flowed Morrow thru tbg on 4-pt BP test: SITP 4098#. 1st rate 1 hr, 12/64" ch gas rate 2526 MCFD, FTP 2788#; 2nd rate 1 hr, 16/64" ch, gas rate 3247 MCFD, FTP 2252#, 3rd rate 1 hr, 20/64" ch, gas rate

3937 MCFD, FTP 1731#; 4th rate 1 hr, 24/64" ch, gas rate 4400 MCFD, FTP 1362#, specific gvty .582, no sulphur. Flowed Atoka thru csg on 4-pt BP test, SICP 3887#, 1st 1-hr rate, 8/64" ch, gas rate 1360 MCFD, FCP 2906#; 2nd 1-hr rate, 10/64" ch, gas 1680 MCFD, FCP 2121#; 3rd 1-hr rate, 14/64" ch, gas rate 1580 MCFD, FCP 1496#; 4th 1-hr rate, 17/64" ch, gas 1480 MCFD, FCP 986#. Morrow zone shut in during 4-hr BP test on Atoka in tbg, SITP start test 3919#, end of test 3913#. Calculated absolute open flow pote Morrow zone 4968 MCFD, no liquid, gas gvty .578. Calculated absolute open flow pote Atoka zone 2209 MCFD, no liquid, gas gvty .6003. Morrow perfs 11550-11676'. Atoka perfs 10688-10799'. Dual completion in Atoka and Morrow formations.

May 22, 1974

Atoka zone shut down.

June 10, 1974

Perforated additional section in Morrow 11550-11676'. Treated Morrow 11550-11786' with 3150 gallons 7-1/2% MS acid in 3 stages. Drilled and pushed Baker packer to bottom. Tested Morrow, 1" ch, 2891 MCFD, 1 BW, FTP-500#.

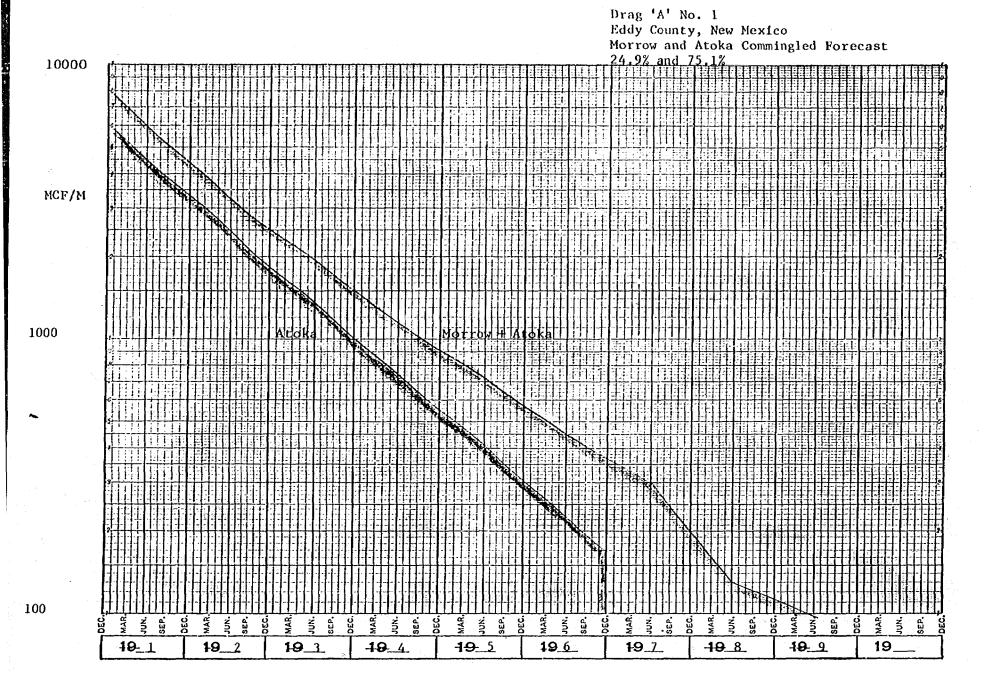
September 6, 1974

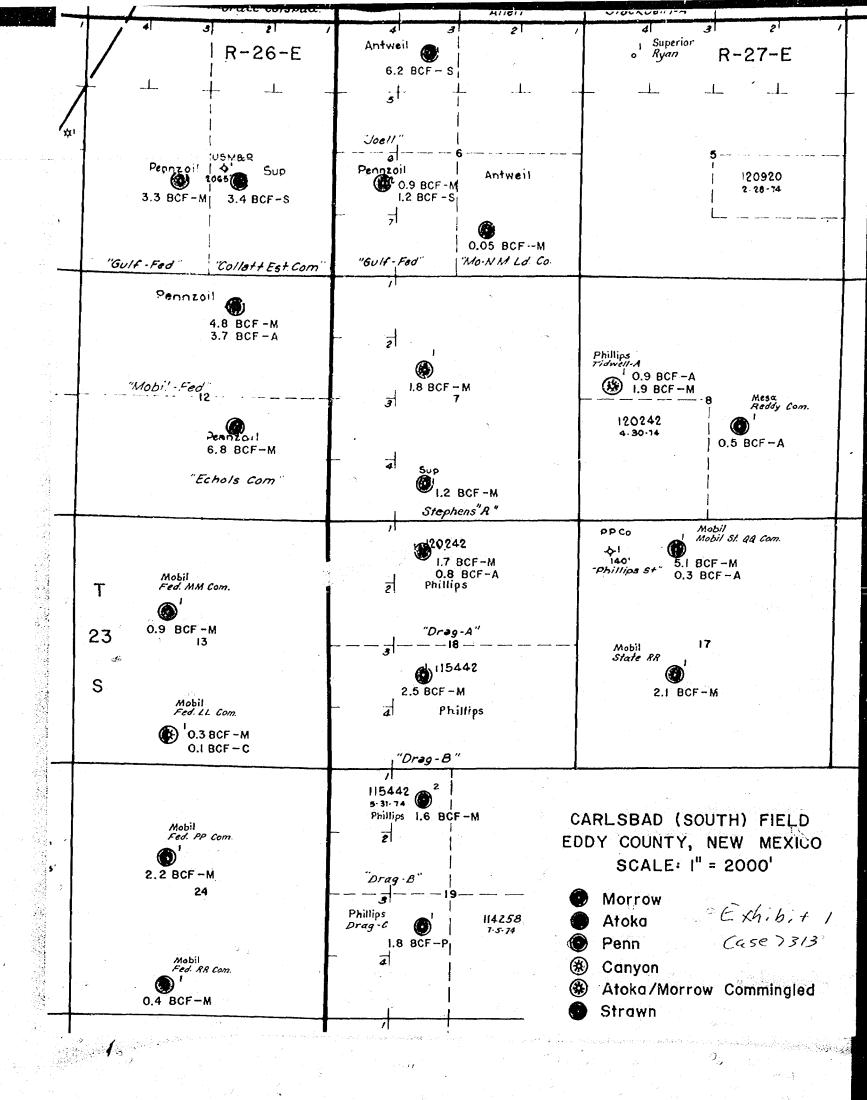
Treated Morrow thru Casing Perforations 11550-11786' with 1000 gallons 7-1/2% HCL acid and 5000 gallons 7-1/2% HCl with nigrogen. Treated thru perforations 11778-11786' with 500 gallons 7-1/2% HCL acid. Set cement retainer 11476' and squeezed perforations 11550-11786' with 40 sacks cement, top cement on retainer 11464', PBTD. Perforated Morrow with 2 jet per foot, 11406-11414, and returned to production. Tested Morrow at 7924 MCFD, 3 BW, FTP 1900# on 28/64" ch.

January 21, 1975

Dowell treated Morrow dwn 2-7/8" tbg thru csg perfs 11406-11414' w/ 500 gals 7-1/2% LST acid w/ F-2 and clay agents. Max press 4100#, min 1500#, final 3750#, inst SDP vacuum. Avg inj rate 1.5 BPM. Flowed 24 hrs, 1" chk, 2550 MCF gas, 3 BSW, FTP 475#, line press 430#, from Morrow perfs 11,406-11,414'.







#### PHILLIPS PETROLEUM COMPANY 4001 Penbrook Street Odessa, Texas 79762

- 1. Lease Name: Drag-A
- 2. Well No.: 1
- 3. Well Location: Unit C, 660 feet from North line, 1980 feet from West line of Section 18, Township 23-S Range 27-E, Eddy County, New Mexico.
- 4. Upper Zone: Carlsbad, South (Atoka)
- 5. Completion Interval: 10,688'-10,799'.
- 6. Lower Zone: Carlsbad, South (Morrow).
- 7. Completion Interval: 11,550'-11,676'.
- 8. Dual Completion Authorized by Commission Order No. MC-1993.
- 9. Latest Well Test Summary

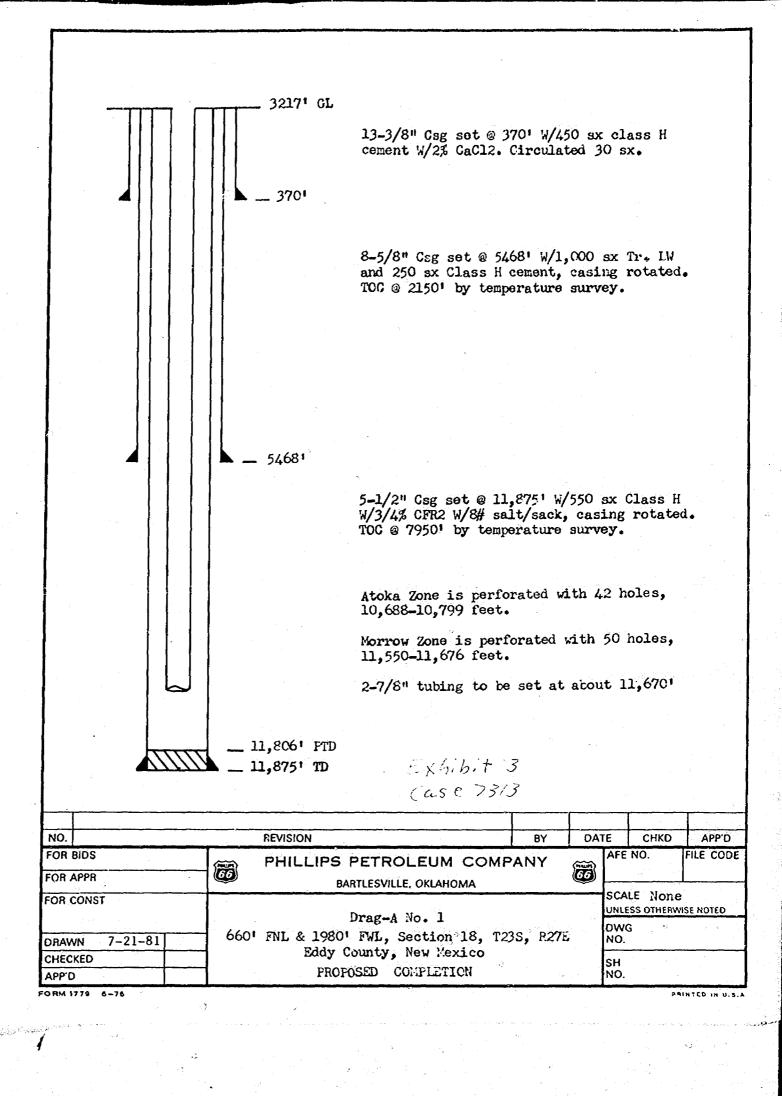
|                | Carlsbad, South (Atoka) (Upper Zone) | Carlsbad, South (Morrow) (Lower Zone) |
|----------------|--------------------------------------|---------------------------------------|
|                |                                      | ga jangan dan salah samu              |
| Current Status | SI                                   | Flowing                               |
| Gas Mcf/day    | 104                                  | 6                                     |
| Cond. Bbls/day | 0                                    | 0                                     |
| Water Bbls/day | <sup>•</sup> 0                       | 0                                     |
| Date           | November, 1972                       | June 6, 1981                          |

- Calculated Bottom-hole Pressure from SIWHP of Upper Zone: 637 psi.
   F1 @ 10111' (887 psi).
- 11. Calculated Bottom-hole Pressure from SIWHP of Lower Zone: 519 psi.

By: J. L. Blevins

Date: 7-22-81

Exhibit 2 Case 73/3



### PHILLIPS PETROLEUM COMPANY

## DRAG-A LEASE, WELL NO. 1 UNIT C, SECTION 18, T-23-S, R-35-E EDDY COUNTY, NEW MEXICO

## PRODUCTION HISTORY CARLSBAD, SOUTH FIELD

| YEAR & MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |          | YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |
|--------------|--------------------|-------------------|----------|-----------------|--------------------|-------------------|
| 1972         |                    |                   |          | 1974            |                    |                   |
| JAN          |                    |                   |          | JAN 👇           | 4,022              | ZONE              |
| FEB          |                    |                   |          | FEB             | 3,046              | SHUT-IN           |
| MAR          |                    | *                 |          | MAR             | 2,639              | 01-74             |
| APR          |                    |                   |          | APR             | 2,655              | 0                 |
| MAY          | 600                | 233               |          | MAY             | 2,467              | 0                 |
| JUN          | 0                  | O                 |          | JUN             | 71,422             | 0                 |
| JUL          | . 0                | 0                 |          | JUL             | 41,314             | 0                 |
| AUG          | 0.                 | 0                 |          | AUG             | 2,437              | 0                 |
| SEP          | <b>୦</b> ଁ ଚ       | 0                 | <i>2</i> | SEP             | 143,392            | 0                 |
| OCT          | 0                  | O                 | ,        | OCT             | 77,341             | . 0               |
| NOV          | 7,828              | 978               |          | NOV             | 41,265             | 0                 |
| DEC          | 155,384            | 8,280             |          | DEC             | 24,835             | 0                 |
| TOTAL YR.    | 163,812            | 9,491             |          | TOTAL YR.       | 416,835            | 0                 |
| ACCUM.       | 163,812            | 9,491             |          | ACCUM.          | 1,557,178          | 9,491             |
|              | 1.14               |                   | 5        |                 |                    |                   |
| 1973         |                    | 9                 |          | 1975            |                    |                   |
| JAN          | 182,892            | 0                 |          | JAN             | 36,914             | 0                 |
| FEB          | 141,641            | 0                 |          | FEB             | 23,891             | 0                 |
| MAR          | 156,274            | 0                 |          | MAR             | 22,954             | 0                 |
| APR          | 117,260            | 0                 |          | APR             | 16,305             | 0                 |
| MAY          | 102,748            | Ō                 |          | MAY             | 8,300              | 0                 |
| JUN          | 70,615             | 0                 |          | JUN             | 5,374              | 0                 |
| JUL          | 71,094             | 0                 |          | JUL             | 5,112              | 0                 |
| AUG          | 53,146             | · · · · <b>0</b>  |          | AUG             | 3,350              | 0                 |
| SEP          | 46,774             | 0                 |          | SEP             | 1,044              | 0                 |
| OCT          | 24,983             | 0                 |          | OCT             | 685                | 0                 |
| NOV          | 5,001              | 0                 |          | NOV             | 781                | 0                 |
| DEC          | 4,103              | 0                 |          | DEC             | 872                | 0                 |
| TOTAL YR.    | 976,531            | 0                 |          | TOTAL YR.       | 125,582            | 0                 |
| ACCUM.       | 1,140,343          | 9,491             | •        | ACCUM.          | 1,682,760          | 9,491             |

Exhibit 6 Case 731,3

- 174 M 45

DRAG-A LEASE, WELL NO. 1

## PRODUCTION HISTORY, CONTINUED

| YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |     | YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |
|-----------------|--------------------|-------------------|-----|-----------------|--------------------|-------------------|
| 1976            |                    |                   |     | 1978            |                    | Ond, Her          |
| JAN             | 733                | o                 |     | JAN             | 175                | 0                 |
| FEB             | 808                | 0                 |     | FEB             | 285                | Ö                 |
| MAR             | 924                | 0                 |     | MAR             | 72                 | Ŏ                 |
| APR             | 830                | 0                 |     | APR             | 36                 | ŏ                 |
| MAY             | 849                | 0                 |     | MAY             | 1,598              | ō                 |
| JUN             | 852                | 0                 |     | JUN             | 1,358              | 0                 |
| JUL             | 887                | 0                 |     | JUL             |                    | 0                 |
| AUG             | 914                | 0                 |     | AUG             | , F                | 0                 |
| SEP             | 779                | 0                 |     | SEP             | 1,384              | . 0               |
| OCT             | 2,238              | 0                 | 7.  | OCT             | 1,261              | 0                 |
| NOV             | 1,984              | 0                 |     | NOV             | -                  | 0                 |
| DEC             | 1,976              | 0                 |     | DEC             |                    | 0                 |
| TOTAL YR        |                    | 0                 | e.  | TOTAL YR.       | 6,169              | 0                 |
| ACCUM.          | 1,696,574          | 9,491             |     | ACCUM.          | 1,714,035          | 9,491             |
| 7               |                    |                   |     |                 |                    |                   |
| 1977            |                    |                   |     | 1979            |                    |                   |
| JAN             | 2,214              | 0                 |     | JAN             | 758                | 0                 |
| FEB             | 1,226              | 0                 |     | FEB             | 1,050              | ő                 |
| MAR             | 1,436              | ,                 |     | MAR             | 851                | Ö.                |
| APR             | 1,343              | 0                 |     | APR             | 1,029              | Ö                 |
| MAY             | 1,291              | 0                 | · - | MAY             | 829                | .0                |
| JUN             | 858                | 0                 |     | JUN             | 1,141              | 0                 |
| JUL             | 655                | 0                 |     | JUL             | 254                | 0                 |
| AUG             | 489                | .0                |     | AUG             | 1,316              | 0                 |
| SEP             | 4                  | 0                 |     | SEP             | 1,324              | 0                 |
| OCT             | 257                | , 0               |     | OCT             | 728                | 0                 |
| NOV             | 587                | ,0                |     | NOV             | 1,172              | 0                 |
| DEC             | 932                | 0                 |     | DEC             | 1,338              | · 0               |
| TOTAL YR.       |                    | 0                 |     | TOTAL YR.       | 11,790             | 0                 |
| ACCUM.          | 1,707,866          | 9,491             |     | ACCUM.          | 1,725,825          | 9,491             |

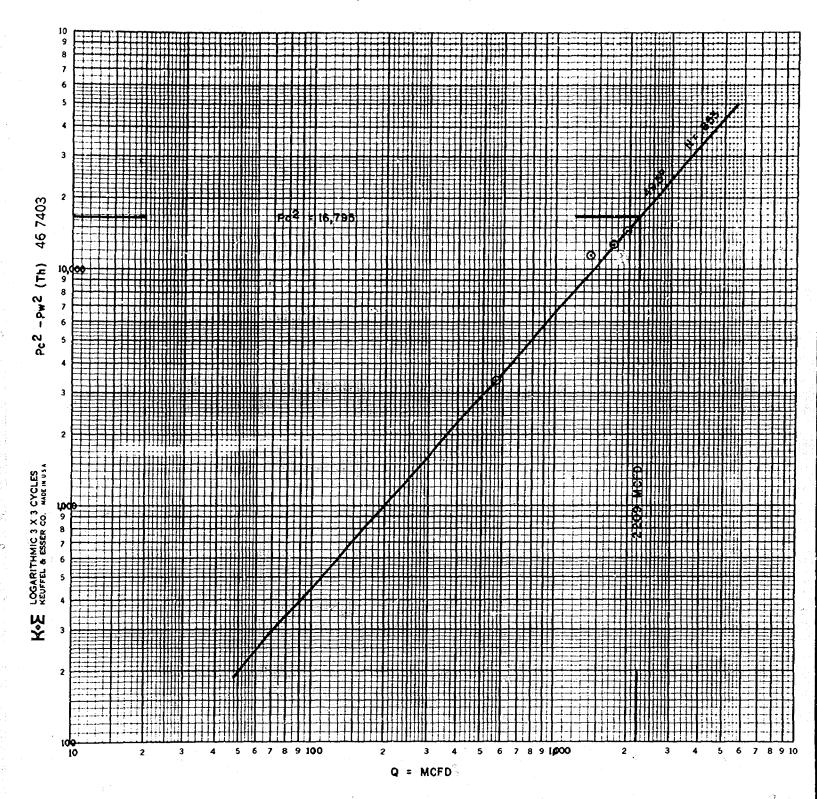
DRAG-A LEASE, WELL NO. 1
PRODUCTION HISTORY, CONTINUED

| YEAR &      | MORROW           | ATOKA    |
|-------------|------------------|----------|
| MONTH       | GAS, Mcf         | GAS, Mcf |
| 1980        |                  |          |
| JAN         | 1,103            | 0        |
| FEB         | 997              | 0        |
| MAR         | 1,055            | 0        |
| APR         | 959              | . 0      |
| MAY         | 771              | 0        |
| JUN         | 1,293            | 0        |
| JUL         | 238              | 0        |
| AUG         | 1,647            | 0        |
| SEP         | <sup>′</sup> 387 | . 0      |
| OCT         | 1,482            | 0        |
| NOV         | 648              | 0        |
| DEC         | 1,547            | 0        |
| TOTAL YR.   | 12,127           | , 0      |
| ACCUM.      | 1,737,952        | 9,491    |
|             |                  |          |
| <u>1981</u> |                  |          |
| JAN         | 1,245            | 0        |
| FEB         | 749              | . 0      |
| MAR         | 513              | 0        |
| APR         | 512              | Ö        |
| MAY         | 249              | 0        |
| TOTAL YR.   | 3,268            | • 0      |
| ACCUM.      | 1,741,220        | 9,491    |

# Exhibit? (45073/3) NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| T                    | ype Test         |                  |              |  |   |                |                    |                    |                                   | Test Date                   | <del></del>  | 1               |             | · · · · · · · · · · · · · · · · · · · |
|----------------------|------------------|------------------|--------------|--|---|----------------|--------------------|--------------------|-----------------------------------|-----------------------------|--------------|-----------------|-------------|---------------------------------------|
|                      | •                | Initial          |              | {                                      | Annua   | 1              |                    | Spe                | ecial                             | 5-25-                       | -72          | Fed             | Lse #N      | M0540701-A                            |
| C                    | ompany           |                  |              | ······································ | Con   | nection        | າ                  |                    |                                   |                             |              | 1               | 2001 111    | .,05 10/01-A                          |
|                      | Phillips         | Petrole          | eum (        | Company                                |   |                | in pend            | ding co            | nnec                              | tion                        |              |                 | -           |                                       |
|                      | ool<br>Carchad   | South 6          | (            | (0) (00                                |   | nation<br>toka |                    |                    |                                   |                             |              | Unit            |             |                                       |
|                      | Carsbad,         |                  |              | ka) Gas<br>tal Depth                   | A1  | LUKA           | Plug Bac           | k TD               |                                   | Elevation                   |              | Formo           | r Lease Na  | me                                    |
| - 1                  | 5-16-72          |                  | 1            | 11875                                  | i   |                | l -                | 806                | 1                                 | 51217 G<br>3217 G<br>3237 L | r.<br>F      | ſ               | cag-A       |                                       |
|                      | sg, Size         | W1.              | ,d           |  | Sel At  |                | Perforalle         | ons:               |                                   |                             |              | Well No         | O           |                                       |
|                      | 5-1/2"           | 17#, 20          | )#  3<br>  a | 3.434                                  | 11875<br>Set At   | 5              | From<br>Pertoralli | 10686              | То                                | 10799                       | )<br>        | Unit            | 1<br>Soc.   |                                       |
|                      |                  | "··              | .   "        |  |   |                | From               |                    | То                                |                             |              | C               |             | Twp. Rye.<br>3-S 27-E                 |
| 7                    | re Well - Sing   | lo - Braden      | read i       | G.G. or G.                             | O. Multiple   |                |                    | Packer S           | ot At                             |                             | <del></del>  | County          | 10 2.       | 3-S 27-E                              |
|                      | G. G. Mul        | tiple            |              |  |   |                |                    |                    | 114                               | 70                          |              |                 | Eddy        |                                       |
| . 1                  | oducing Theu     | -                |              | Temp. *F                               | Wean  |                | Temp. *F           | Baro, Pr           | ess 1                             | Pa                          |              | State           |             |                                       |
| *                    | nnulus<br>L      | <u> </u>  17     |              | 11800                                  | % CO  | 60             | % N 2              | <u> </u>           | <u>13.2</u><br>% н <sub>2</sub> s | 166                         | over         | Meter           | lew Mexi    | CO<br>Taps                            |
|                      | 10688            | 10688            |              | .6003                                  | .01   |                |                    | 07                 | A 1123                            | _   '''                     |              | 4               | 311         | Flange                                |
|                      |                  |                  | FLO          | W DATA                                 |   |                |                    | <del></del>        | ING C                             | DATA                        | C            | ASING           | <del></del> | Duration                              |
| NO                   | Prover<br>Line   | X Oill           |              | Press.                                 | DII   |                | Temp.              | Pres               | 8,                                | Temp.                       | Pre          | 55,             | Temp.       | 10                                    |
|                      | Size             | SI               | ze           | p.s.i.q,                               | hw  |                | •F                 | p. 6.1.            |                                   | •F                          | p.s.         | 1               | *F          | Flow                                  |
| Si<br>1.             | 3.068            | <del></del>      | 00           | 160                                    | 50  |                | 92                 | 409                |                                   | <del></del>                 | 408          |                 | 81          |                                       |
| 2.                   | 17.000           |                  | 75           | 450                                    | 10  |                | 84                 | Morro<br>Compl     |                                   | <del></del>                 | 367<br>229   |                 | 81<br>82    | 1 hr.                                 |
| 3.                   | 77               |                  | 75           | 410                                    | 17  |                | 80                 | Shut-              |                                   |                             | 196          |                 | 82          | 11                                    |
| 4.                   | "                |                  | 75           | 410                                    | 22  |                | 86                 |                    |                                   |                             | 151          |                 | 83          | 11                                    |
| 5.                   | 1                |                  |              |  |   |                |                    | <u> </u>           |                                   |                             |              |                 |             | <u></u>                               |
| -                    | <del></del>      |                  |              | <del></del>                            | RAT   | re or          |                    | CALCUL             |                                   |                             |              | <u></u>         | <del></del> | <del></del>                           |
|                      | Coeffic          | lent             |              | h <sub>w</sub> P <sub>m</sub>          | Pre   | ssure          |                    | v Temp.<br>actor   | 1                                 | Gravity<br>Factor           | · I .        | oper<br>opress. | Ro          | ite of Flow                           |
| NO.                  | (24 Ho           | ur)              | •            | w. w                                   |   | Pm             |                    | FI.                |                                   | Fg                          |              | or, Fpv         |             | Q, McId                               |
| 1                    | 4.789            |                  |              | 3.06                                   | 173   |                | .9                 | 706                | 1.                                | 280                         | 1.           | 013             |             | 561                                   |
| 2.                   | 15.61            |                  |              | 8.06                                   | 463   |                |                    | 777                | 11                                |                             |              | 035             |             | 376                                   |
| 3.                   | <del> </del>     |                  |              | 4.82<br>6.49                           | 423<br>423  |                |                    | 8 <u>13</u><br>759 |                                   |                             |              | 033             |             | 718                                   |
| 5.                   | <del> </del>     |                  |              | 0.45                                   | 423   |                | 1 9                | 139                |                                   | <del></del>                 |              | 033             | <del></del> | 944                                   |
|                      | P <sub>t</sub>   | Temp. *R         |              | T <sub>f</sub>                         | z   | Gas            | Liquid Hy          | drocarbon l        | Ratio _                           |                             |              |                 |             | Mc[/bb].                              |
| NO.                  | 1 4 4 4 4        | \$1              | 1 .          |  |   | A.P.           | I. Gravity         | of Liquid I        | Hydroca                           | rbons                       |              |                 | <del></del> | Deg.                                  |
| 1.                   | Calcula          |                  |              |  |   | ł .            |                    |                    |                                   | .60                         | 1.22         |                 | XXX         | XXXXXX                                |
| 3.                   | New Mex          |                  |              |  |   | 1 .            |                    | y Flowing<br>ire   | _                                 | 4                           | XXXX         | _ P.S.I.        |             | P.S.I.A.                              |
| 4.                   | Pressure         |                  |              |  |   |                |                    | rature             |                                   |                             |              |                 | R           | R                                     |
| 5.                   |                  |                  |              |  | :   | <u> </u>       |                    |                    |                                   |                             |              | y.              |             |                                       |
| P <sub>c</sub><br>NO | 4098.2           | <u>- · c</u>     | 6795<br>T    |  | p2 p2   | 1 (1)          | Pc2                | =                  | 167                               | 95                          | (2) [        | Pc <sup>2</sup> | ]n          | 1.1364                                |
| 1                    | <del> </del>     | 2680 1           | 112          |  | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | ``'            | ₽ <sup>2</sup> – ₽ |                    | 144                               | 57                          | P            | $^2 - Fw^2$     |             |                                       |
| 2                    | 13,610<br>53,278 | 3689.3<br>2308.7 |              | 611<br>331 1                           | 3184<br>1.464   |                | -<br>-<br>-<br>-   |                    | _                                 |                             | -            |                 | ~           |                                       |
| 3                    | 39.014           | 1976.            |              |  | 2,889   | AOF            | <u>_</u> ا ه       | Pc <sup>2</sup>    | ]" = .                            | 2209                        | )            |                 |             |                                       |
| 4                    | 23,323           | 1529.2           | ,            |  | 4,457   |                | . [                | $P_c^2 - P_w^2$    | ً [                               |                             | <del>-</del> |                 |             |                                       |
| 5                    | لـــــا          |                  |              |  |   |                |                    | ·                  |                                   |                             | 7            |                 | ·           |                                       |
| Abs                  | olute Open Fl    | ow               | 2            | 2209                                   |   |                | McId (             | 15.025             | Angle                             | of Slop <del>e O</del>      | 49.          | 5               | Slope,      | . 853                                 |
| Hen                  |                  | ipment           |              |  |   |                |                    |                    |                                   | <u> </u>                    |              |                 |             |                                       |
| _                    | * To             | be prod          | luced        | l throu                                | gh casi   | ng/t           | ubing              | annulu             | s.                                | <del></del>                 | ·            |                 |             |                                       |
| App                  | roved By Com     | mission:         |              | Conducte                               | d By:   |                | <del></del> 1      | Calculated         | By:                               | 1.12                        | To           | hecked          | By:         |                                       |
| i                    |                  | -                |              | D. E                                   | . Simps   | on             | - 1                | 6.4                |                                   | impson                      | - 1          |                 | J. Mue      | ller                                  |

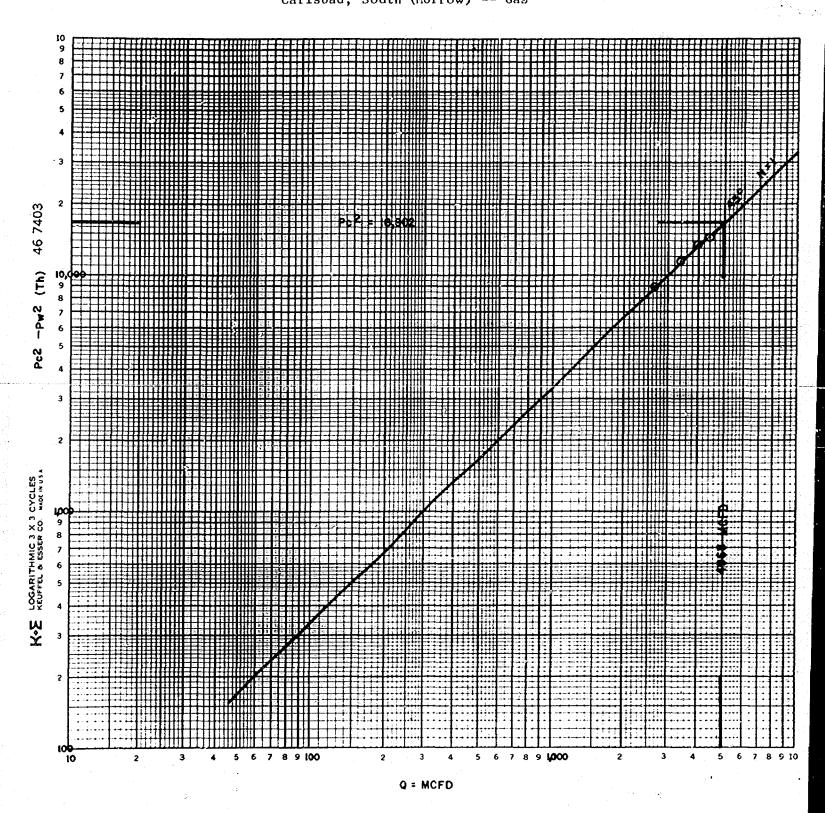
Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Atoka) -- Gas



# NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| Type Test               |  | · · · · · · · · · · · · · · · · · · · |                 |                |   | <del></del>                                  |  | Test Dat     |               | <del></del>                       | ·           |            |                          |
|-------------------------|--|---------------------------------------|-----------------|----------------|---|--|--|--------------|---------------|-----------------------------------|-------------|------------|--------------------------|
|                         | X Initial                              |                                       | Annua           | 1              |   | ☐ Spc  | ecial  |              | 5-72          | Fod                               | I ob 1      | MAG S      | 40701-A                  |
| Company                 | ······································ |                                       |                 | nection        | 1                                       |  | 1  |              |               | red.                              | nse,        | MIOS       | 40701~A                  |
| Phillips                | Petrole                                | eum Compàn                            | y SI            | nut d          | in pend                                 | ling co                                      | nnec   | tion         |               |                                   | نيد هند شد  |            |                          |
| Pool                    | <del>*=</del>                          | <del></del>                           |                 | nation         |   | <u></u>                                      |  |              |               | Unit                              | ····        |            |                          |
| Carlsbad                | , South                                | (Morrow)                              | Gas Mo          | rrov           |   | · · · · · · · · · · · · · · · · · · ·        |  |              |               |                                   | 414.4.      |            |                          |
| Completion Dat          |  | Total Depth                           |                 | 1              | Plug Back                               |  | }  | 512171p      | Gr.           | 1                                 | r Lease N   | ame        | * +                      |
| 5-21-72<br>Csg. Size    | ~                                      | 11,875                                | . '             |                | 11,8                                    | 06'  |  | 32371        | DE            |                                   | ag-A        |            |                          |
| Csg. Size               | 17/1 20                                | ,d                                    | Set At          | .              | Perioratio                              | nai  |  |              | caci          | Well N                            | 0.          |            |                          |
| 7-1/2<br>Teg. Size      | 11/1, 20                               | 3.434                                 | Sel Al          | 2              | Perforation                             | ,550'  | 10   | 11,          | 0/6.          | Unit                              | Soc.        | Twp.       | Rge,                     |
|                         |  |                                       |                 |                |   |  |  |              |               | C                                 |             | •          | 7.,c.<br>5 27 <b>←</b> E |
| 2-7/8" Type Well - Sine | yle - Bradeni                          | head - G.G. or G                      | O. Multiple     | <u></u>        |   | Packer S                                     | el Al  |              | <del></del>   | County                            |             | 25-        | ) Z/4E                   |
| G. G                    | . Multip                               | 1e                                    |                 |                |   |  |  |              |               | 1                                 | Eddy        |            |                          |
| Freducing Thru          | Re                                     | ole<br>servoir Temp. •                | Mean .          | Annual         | Temp. °F                                | Bato, Pre                                    | 88   | Pa           | <del></del>   | State                             |             |            |                          |
| Tubing                  | 17                                     | 6 9 11800                             | % CO            | 60°            |   | <u>                                     </u> | 3.2  |              |               | Nev                               | w Mexic     | :0         |                          |
| L                       | н                                      | Gq.                                   | % CO            | 2              | % N 2                                   |  | % H <sub>2</sub> S                               |              | <b>Dioxet</b> | Meter                             |             | Taps       |                          |
| 11550                   | 11550                                  | .5782                                 | .01             | .02            | .00                                     |  |  |              |               | 3'                                |             | F1.        | inge                     |
| }                       | <u></u>                                | FLOW DAT                              |                 |                |   |  |  | DATA         |               | ASING                             | DATA        | _          | Duration                 |
| NO. Frover              | X Oni                                  | ice Press.<br>ze p.s.i.g.             |                 |                | Temp.                                   | Press  |  | Temp.        |               | .1.g.                             | Temp.       |            | of<br>Flow               |
| Size                    |  | promise.                              |                 |                |   |  |  | ļ            |               |                                   |             |            |                          |
| 1. 3.068                |  | 00 800                                | 10              |                | 76                                      | 4098<br>2788                                 |  | 81<br>85     |               | 085<br>oka                        |             | -   1      | hour                     |
| 2. "                    | <del></del>                            | 780                                   | 17              |                | 72                                      | 225  |  | 83           |               | letion                            |             |            | hour                     |
| 3. '''                  | 11                                     | 780                                   | 24              |                | 77                                      | 173  |  | 85           | Shut          |                                   | 4           |            | hour                     |
| 4.                      |  | 780                                   | 28              |                | 74                                      | 1362   |  | 83           |               | ing/ca                            | sing        |            | hour                     |
| 5.                      |  |                                       |                 |                |   |  |  |              |               | nulus                             |             |            |                          |
|                         |  |                                       | RAT             | TÉ OF          | FLOW                                    | CALCUL                                       | ATIC   | NS           |               |                                   |             |            |                          |
| Coeffic                 | clent                                  |                                       | - Pre           | aente          | Flow                                    | Temp.  | }  | Gravity      | 1             | Super                             | ) F         | Rate of    | Flow                     |
| NO. (24 H               | · .                                    | —√h <sub>w</sub> P <sub>m</sub>       | 1               | P <sub>m</sub> | 1                                       | actor  |  | Factor       |               | mpress.                           |             | Q, M       |                          |
|                         |  |                                       |                 |                |   | Ft,  |  | Fg           | <del></del>   | ctor, Fpv                         |             |            |                          |
| 21.32                   | <u></u>                                | 90.18                                 |                 | 3.2            |   | 850  |  | 311          |               | 1.058                             |             | 627        |                          |
| 3. "                    |  | 116.12<br>137.98                      |                 | 3.2            |   | 387<br>340                                   | <del>                                     </del> |              |               | L.059<br>L.058                    |             | 398        |                          |
| 4. 11                   |  | 149.03                                | - "             |                |   | 368  | <del></del> ,                                    | <del> </del> |               | L.059                             |             | 015<br>353 |                          |
| 5.                      |  |                                       |                 |                |   | JUQ  | <del> </del>                                     | <del></del>  |               |                                   |             |            |                          |
| NA B                    | Temp. •R                               | 7                                     | z               | Gas            | Liquid Hyd                              | Irocarbon F                                  | Ratio  |              |               |                                   |             |            | Mci/bbi.                 |
| NO. Pr                  | <u> </u>                               |                                       | est in the      | 1              |   | of Liquid I                                  |  |              |               | ٠,-                               |             |            | Deg.                     |
|                         |  | ade by ele                            |                 | Speci          | ific Gravit                             | y Separator                                  | Gas_   |              | .578          |                                   | XXX         | <u> </u>   | XXX                      |
|                         |  | rogram bas                            |                 | Speci          | ille Gravit                             | y Flowing                                    |  |              | XXXX          | Κ                                 |             | <u> </u>   |                          |
|                         |  | anual for                             |                 | 1              | cal Pressu                              |  |  | 72           |               | P.S.(.                            | 1           |            | _P.S.I.A.                |
| 4. pressur              | e cesti                                | ng of gas                             | METTS.          | Critic         | cal Temper                              | rature                                       |  | 149          | <del></del>   | <del></del>                       | я [         |            | R                        |
| P <sub>c</sub> 4111.2   | P <sub>c</sub> <sup>2</sup> 169        |                                       |                 | l              |   |  |  |              |               |                                   | ٦           |            | <u> </u>                 |
| NOI P,2                 | P <sub>W</sub>                         | Pw <sup>2</sup>                       | $P_c^2 - P_w^2$ | (0) _          | P <sub>c</sub> <sup>z</sup>             | =_   | 169  | 02           | (2)           | P <sub>C</sub> Z                  |             | 1.1        | 415                      |
| 1 7847                  | 2815.9                                 |                                       | 8973            | 1              | $P_c^2 - P_w^2$                         |  | 148  | 06           | L             | Pc <sup>2</sup> - Fw <sup>2</sup> | ا           |            | l                        |
| 2 5131                  | 2291.7                                 |                                       | 11650           | <b>]</b> ,     |   | 2  | _  |              |               |                                   |             |            |                          |
| 3 3042                  | 1792,0                                 | 3211                                  | 13691           | AOF            | = 0                                     | $P_c^2$ $P_c^2 \sim R_c^2$                   | n =  | 49           | 68            |                                   |             |            | . }                      |
| 4 1891                  | 1447.7                                 | 2096                                  | 14806           |                | . [                                     | $P_c^2 - P_w^2$                              | _  |              |               |                                   |             |            | ł                        |
| 5                       | <u></u>                                |                                       |                 | <u> </u>       | <del>-</del>                            | <del></del>                                  |  |              | ·             | <del></del>                       | <del></del> |            |                          |
| Absolute Open F         | low                                    | 4,968                                 |                 |                | Mcfd 4                                  | 15.025                                       | Angle  | of Slove     | e 45          | ·                                 | Slope       | , n        | 1.00                     |
|                         |  |                                       |                 |                | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 10.000                                       | J910   |              |               |                                   |             |            |                          |
| Hemarks:                |  |                                       |                 |                |   |  |  | 33           | <del>-</del>  |                                   | <del></del> |            |                          |
|                         |  | <del></del>                           |                 |                |   | - S  |  |              | •             |                                   |             |            |                          |
| Approved By Con         | nmission:                              | Conduct                               | ed By:          |                |   | Calculated                                   | Ву:  | *******      | . 1           | Checked                           | By:         |            |                          |
|                         | <u> </u>                               |                                       | D. E. Si        | mpsc           | n                                       | D. E   | . Si   | mpson        |               | W                                 | J. Muel     | ller       |                          |
|                         |  |                                       |                 |                |   |  |  |              |               |                                   |             |            |                          |

Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Morrow) -- Gas



PHILLIPS PETROLEUM CO.-GAS CHROMATOGRAPH ANALYSIS-G & GL SURVEY
CO. Phillips Pat. Co.

LEASE Drag. A. WEL . TYPE GAS CAN WELL
LOCATION LOCAL PROW. 18-23-27. COUNTY Eddy. STATE N. M.
FIELD LOW Corlains. FORM MOVEN. CHOKEOM TYPE TRAP CONT.
TRAP TEMP. TRAP PRESS. 91, FTP. 105. ATMOS TEMP. 90. GAS TEMP. 104. BARO. 681.
DATE SEC 624121. DATE RUN 642121. SEC BY FROM BY A.P. BOMB PRESS. 82.
H2S GR. (CORR) STLA. CO2 ON TAG 0.40.20. MISC. 71.20. toward.

| RUH 1                                    | 5-429                                  | 2:19.3   | 8 / 3 / 8  |  |
|--|--|--|--|--|
| C  | OMPONENT                               | FI   | NAL MOL %  |  |
| Cá                                       | 5 PLUS                                 |  | .09  | Compan<br>Wells .<br>Lense 1<br>1.282<br>Samples           |
| H  |  |  | .72  | \$ 15 D : 18   |
| S  |  |  | 96.38  | 1 5 6 3 5 7 P  |
| CE                                       |  |  | .67  | 8 2 3  |
|  | THANE                                  | •  | 1.67   | 16 0 %   |
| £3                                       |  |  | .28  | 2 also   |
| 11                                       | 4                                      |  | .97  | 2000   |
| NO                                       | <b>.</b> 4                             |  | . 26   |  |
| 10                                       | :5                                     |  | . 34   | 2020   |
| អ(                                       | :5                                     |  | .82  | 10:2:1:16  |
|  |  |  |  | Bom Bom  |
| ······                                   | ITAL                                   |  | 99   |  |
|  |  | and the state of   |  | 13 2 0 50  |
| PRESSURE BA                              | ISE AT 6                               |  |  | 1, 5,5%  |
|  |  | 14.696   | 14.65  | £ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ |
|  |  |  |  |  |
| . Ce los uc                              | COM                                    | 0707   | 0706   |  |
| -CS PLUS                                 |  | .0387  | .9386  |  |
| ETHANE                                   | GPM                                    | .4453  | . 4439   |  |
| ETHANE<br>C3                             | GPM<br>GPM                             | .4453<br>.0768   | .4439<br>.0766                                     |  |
| ETHANE<br>C3<br>IC4                      | GPM<br>GPM<br>GPM                      | .4453<br>.9768<br>.9228  | .4439<br>.0766<br>.0227                            |  |
| ETHANE<br>C3<br>IC4<br>NC4               | GPM<br>GPM<br>GPM<br>GTM               | .4453<br>.0768<br>.0228<br>.0198                                       | .4439<br>.0766<br>.0227<br>.0138                   |  |
| ETHANE<br>C3<br>IC4<br>NC4<br>IC5        | 62M<br>62M<br>62M<br>67M<br>62M        | .4453<br>.9768<br>.9228<br>.9198<br>.9146                              | .4439<br>.0766<br>.0227<br>.0138<br>.0145          | Exhibit  |
| ETHANE<br>C3<br>IC4<br>NC4               | GPM<br>GPM<br>GPM<br>GTM               | .4453<br>.0768<br>.0228<br>.0198                                       | .4439<br>.0766<br>.0227<br>.0138<br>.0145          | Exhibit  |
| ETHANE<br>C3<br>IC4<br>NC4<br>IC5<br>NC5 | 62M<br>62M<br>62M<br>67M<br>62M        | .4453<br>.9768<br>.9228<br>.9138<br>.9146<br>.9072                     | .4439<br>.9766<br>.9227<br>.9138<br>.9145<br>.3972 | Exhibit<br>Cuse  |
| STHANE C3 IC4 NC4 IC5 NC5                | 62M<br>62M<br>62M<br>67M<br>62M        | .4453<br>.9768<br>.9228<br>.3138<br>.9146<br>.9072                     | .4439<br>.0766<br>.0227<br>.0138<br>.0145          |  |
| ETHANE<br>C3<br>IC4<br>NC4<br>IC5<br>NC5 | 62M<br>62M<br>62M<br>62M<br>62M<br>62M | .4453<br>.9768<br>.8228<br>.3188<br>.9146<br>.3072<br>.5242<br>.997966 | .4439<br>.9766<br>.9227<br>.9138<br>.9145<br>.3972 |  |

INST 1 METH 1 FILE 29

RUM : G-434 8:57.3 7 / 1 / 8:

| JUNEUNENT | FINAL HOL | ·•             |
|-----------|-----------|----------------|
| ⊁ SS PLUS | •3        | A Possible Bon |
| H2        | 73        | Contaminant    |
| <b>C1</b> | 95,27     |                |
| 002       | . 45      | , t            |
| ETHANE    | 2,46      |                |
| ÇZ        | . 46      |                |
| IS4       | .13       |                |
| MC4       |           |                |
| 105       | .37       |                |
| HC5       | .03       |                |
| TOTAL     | 199       | •              |
|           |           |                |

PRESSURE BASE AT 60 DEG. F. 14.696

|           |       | 14.596   | 14.65                  |
|-----------|-------|----------|------------------------|
| CS PLUS   | GPM   | .1291    | .1287                  |
| ETHANE    | SPH   | .656     | .6539                  |
| 53        | GPM   | .1262    | .1258                  |
| IC4       | GPM:  | .8424    | .3422                  |
| NC4       | SPM   | . 9314   | .0313                  |
| IC5       | SPM   | . 2255   | .3254                  |
| HC5       | GPM . | .0108    | .0103<br>0.165<br>0.24 |
| TOTAL GPM |       | 1.0214   | 1.9181                 |
| Z FACTOR= |       | . 997855 |                        |

Z FACTOR= .997855 SAT. BASIS BTU 1027.72

CAL. SP. GR. .591

Exhibit 10

(ase 73/3

DRAG 'A' NO. 1
ECONOMICS OF COMMINGLING
MORROW AND ATOKA FORMATIONS

| Year  |   | Case 1: Comm   | ingled Production   |        | Case 2: Indiv | idual Production |
|-------|---|----------------|---------------------|--------|---------------|------------------|
|       |   | Gas (MCF)      | Cash Flow (\$)      |        | Gas (MCF)     | Cash Flow (\$)   |
| 1     |   | 65,897         | 74,477              |        | 10,611        | 10,986           |
| 2     |   | 38,361         | 42,729              |        | 8,020         | 7,885            |
| 3     |   | 22,713         | 24,629              |        | 6,061         | 5,506            |
| 4     |   | 13,720         | 14,166              |        | 4,581         | 3,671            |
| 5     |   | 8,477          | 8,000               | ·= '\$ | 3,462         | 2,241            |
| 6     |   | 5,370          | 4,277               |        | 2,617         | 1,115            |
| 7     |   | 3,513          | 1,979               | N.     | 1,998         | 240              |
| 8     | * |                |                     |        | 55,286        | 60,841           |
| 9     | * |                |                     |        | 30,341        | 31,964           |
| 10    |   | •              |                     |        | 16,652        | 15,988           |
| 11    |   |                |                     |        | 9,139         | 7,085            |
| 12    |   |                |                     |        | 5,015         | 2,049            |
|       |   |                |                     | •      |               |                  |
| Total | * | 158,051 MCF    | \$170,257           |        | 153,783 MCF   | \$149,571        |
|       |   | Increase in re | serves = 4,268 MCF  |        |               |                  |
| 9     |   | Increase in Ca | sh Flow = \$20,686. |        |               |                  |

Exhibit 11.
(ase 7313

March 2, 1972

Location: 660' FNL and 1980' FWL, Sec 18, T-23-S, R-27-E, Eddy County, New Mexico.

Drld 17-1/2" hole to  $370^{\circ}$ . Cmt'd 13-3/8" at  $370^{\circ}$  w/ 450 sx Class "H". Circ'd 30 sx cmt.

Cmt'd 8-5/8" csg at 5468' w/ 1000 sx Trinity LW cmt w/ 3# Gilsonite per sx followed by 250 sx Class "H" Neat cmt. Ran temp survey, top cmt outside 8-5/8" csg 2150'.

Ran 360 jts 5-1/2" csg at 11875'. Cmt'd w/ 550 sx Class "H" cmt. Ran temp survey, top cmt outside 5-1/2" csg at 7950'.

Set Baker Model F-1 prod pkr at 11470'. Schlum perf'd Atoka in 5-1/2" csg thru 2-7/8" tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot 10688-10691' 10694-10697', 10744-10750', 10794-10799'. SI 4-1/2 hrs, SICP 600#. Howco treated Atoka w/ 2500 gals 15% acid dwn tbg thru perfs 10686-10799'. Max press 4400#, min 4250#, inst SDP 4200#, 15-min SIP 3800#, 1-hr 2800#. SI 10 hrs, SITP 2200#, SICP 3400#. Flwd tbg to pit 2-3/4 hrs to clean up, FTP 2200# to 100#, rec 150 BLW, CP 3400#-500#. Flowed from csg 2 hrs, 1/4" ch, thru low press separator, gas rate 184 MCFD, FCP 500% to 700%. SI 3 hrs, SICP 700% to 1500%. Flowed thru csg 1 hr to high press separator, 10/64" ch, gas rate 795 MCFD, FCP 1700#, separator press 750# at 86° F. Flowed 2 hrs, 1/4" ch, from csg, gas rate 1400 MCFD, FCP 1150#, separator press 725# at 86° F. Flowed 3 hrs, 13/64" ch thru csg, gas rate 1000 MCFD, FCP 1200#, separator press 725# at 82° F. SI 10 hrs, SITP 3600#, SICP 3800#. SITP 4400#, CP 4600#. Howco treated Atoka down csg thru perfs 10686-10799' w/ 7500 gals 20% CRA acid. Max press 6000#, min 5000#, inj rate 6 BPM, inst SDP 4300#, 15-min 4200#, 90-min 3800#. Flowed 14 hrs thru tbg, 1/2" ch, gas rate 307 MCFD, specific gvty .599, no sulphur, 1.06 MOL CO2, 7-1/2 BLW, FTP 450#, CP 600#. SI 3 hrs, SITP 1600#, CP 1900#. 22nd, flowed thru csg 8 hrs, 13/64" ch, last 3 hrs on stabilized rate 1,300 MCFD, FC? 1150#, separator 820# at 90° F. SI 16 hrs, SICP 3700#.

May 22, 1972

Closed Baker sleeve at 11,451'. Atoka in csg annulus. Schlum perf'd Morrow in 5-1/2" csg thru tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot, 11649-11653', 11550-11554', 11669-11676', 11604-11610'. SITP 2500#. Flowed 1 hr at stabilized rate 4100 MCFD, 3/8" ch, FTP 2600#, separator 800# at 60° F, 1/2 BLW. SI 9 hrs, SITP 3900#. Atoka zone shut in 49 hrs in csg, SICP 4100#. Morrow zone shut in 43 hrs in tbg, SITP 4300#. Atoka on 4-pt BP test: SICP 4085# first rate 1 hr, 6/64" ch, gas rate 534 MCFD, FCP 3676#; 2nd rate 1 hr, 10/64" ch gas rate 1348 MCFD, FCP 2275#; 3rd rate 1 hr, 12/64" ch, gas rate 1678 MCFD, FCP 1962# 4th rate 1 hr, 15/64" ch, gas rate 1909 MCFD, FCP 1514#. Specific gvty .602, no sulphur. Flowed Morrow thru tbg on 4-pt BP test: SITP 4098#. 1st rate 1 hr, 12/64" ch gas rate 2526 MCFD, FTP 2788#; 2nd rate 1 hr, 16/64" ch, gas rate 3247 MCFD, FTP 2252#, 3rd rate 1 hr, 20/64" ch, gas rate

3937 MCFD, FTP 1731#; 4th rate 1 hr, 24/64" ch, gas rate 4400 MCFD, FTP 1362#, specific gvty .582, no sulphur. Flowed Atoka thru csg on 4-pt BP test, SICP 3887#, 1st 1-hr rate, 8/64" ch, gas rate 1360 MCFD, FCP 2906#; 2nd 1-hr rate, 10/64" ch, gas 1680 MCFD, FCP 2121#; 3rd 1-hr rate, 14/64" ch, gas rate 1580 MCFD, FCP 1496#; 4th 1-hr rate, 17/64" ch, gas 1480 MCFD, FCP 986#. Morrow zone shut in during 4-hr BP test on Atoka in tbg, SITP start test 3919#, end of test 3913#. Calculated absolute open flow pote Morrow zone 4968 MCFD, no liquid, gas gvty .578. Calculated absolute open flow pote Atoka zone 2209 MCFD, no liquid, gas gvty .6003. Morrow perfs 11550-11676'. Atoka perfs 10688-10799'. Dual completion in Atoka and Morrow formations.

May 22, 1974

Atoka zone shut down.

June 10, 1974

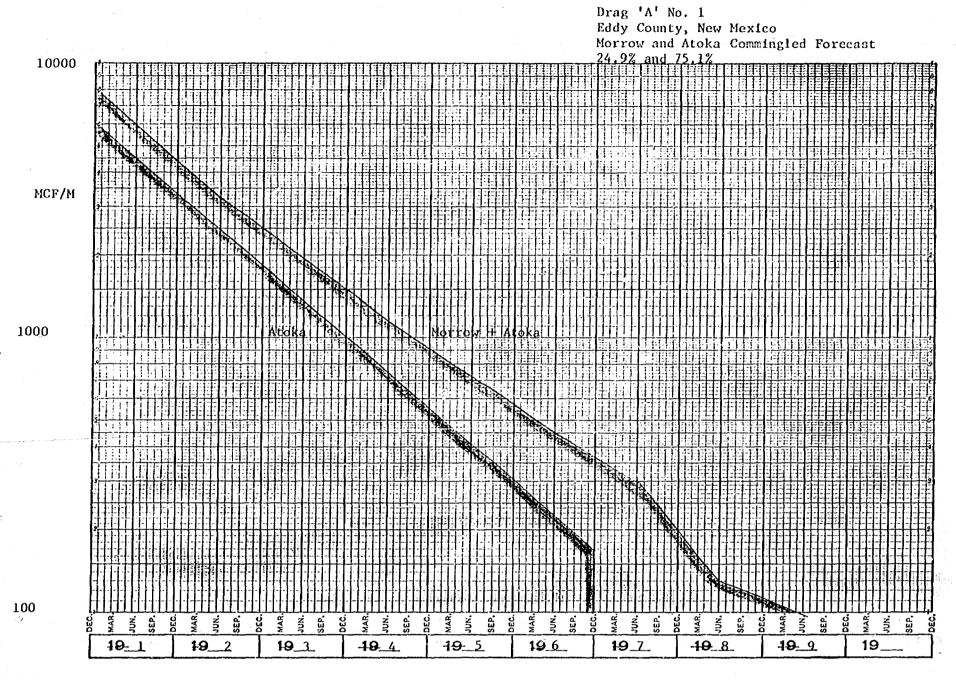
Perforated additional section in Morrow 11550-11676'. Treated Morrow 11550-11786' with 3150 gallons 7-1/2% MS acid in 3 stages. Drilled and pushed Baker packer to bottom. Tested Morrow, 1" ch, 2891 MCFD, 1 BW, FTP-500#.

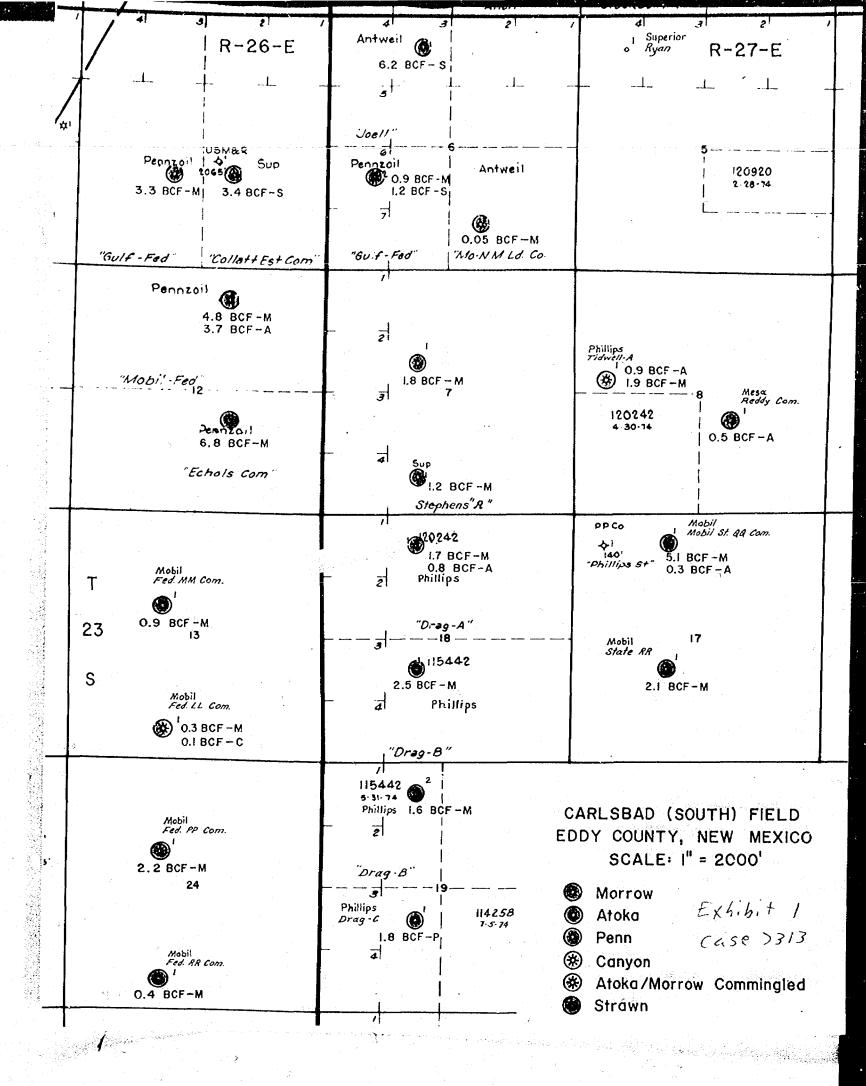
September 6, 1974

Treated Morrow thru Casing Perforations 11550-11786' with 1000 gallons 7-1/2% HCL acid and 5000 gallons 7-1/2% HCl with nigrogen. Treated thru perforations 11778-11786' with 500 gallons 7-1/2% HCL acid. Set cement retainer 11476' and squeezed perforations 11550-11786' with 40 sacks cement, top cement on retainer 11464', PBTD. Perforated Morrow with 2 jet per foot, 11406-11414, and returned to production. Tested Morrow at 7924 MCFD, 3 BW, FTP 1900# on 28/64" ch.

January 21, 1975

Dowell treated Morrow dwn 2-7/8" tbg thru csg perfs 11406-11414' w/ 500 gals 7-1/2% LST acid w/ F-2 and clay agents. Max press 4100#, min 1500#, final 3750#, inst SDP vacuum. Avg inj rate 1.5 BPM. Flowed 24 hrs, 1" chk, 2550 MCF gas, 3 BSW, FTP 475#, line press 430#, from Morrow perfs 11,406-11,414'.





#### PHILLIPS PETROLEUM COMPANY 4001 Penbrook Street Odessa, Texas 79762

1. Lease Name: Drag-A

2. Well No.:

3. Well Location: Unit C, 660 feet from North line, 1980 feet from West line of Section 18, Township 23-S Range 27-E, Eddy County, New Mexico.

4. Upper Zone: Carlsbad, South (Atoka)

5. Completion Interval: 10,688'-10,799'.

6. Lower Zone: Carlsbad, South (Morrow).

7. Completion Interval: 11,550'-11,676'.

8. Dual Completion Authorized by Commission Order No. MC-1993.

9. Latest Well Test Summary

|                | Carlsbad, South (Atoka) (Upper Zone) | Carlsbad, South (Morrow) (Lower Zone) |
|----------------|--------------------------------------|---------------------------------------|
|                |                                      |                                       |
| Gas Mcf/day    | 104                                  | 6.                                    |
| Cond. Bbls/day | 0                                    | <b>O</b> +                            |
| Water Bbls/day | 0                                    | 0                                     |
| Date           | November, 1972                       | June 6, 1981                          |

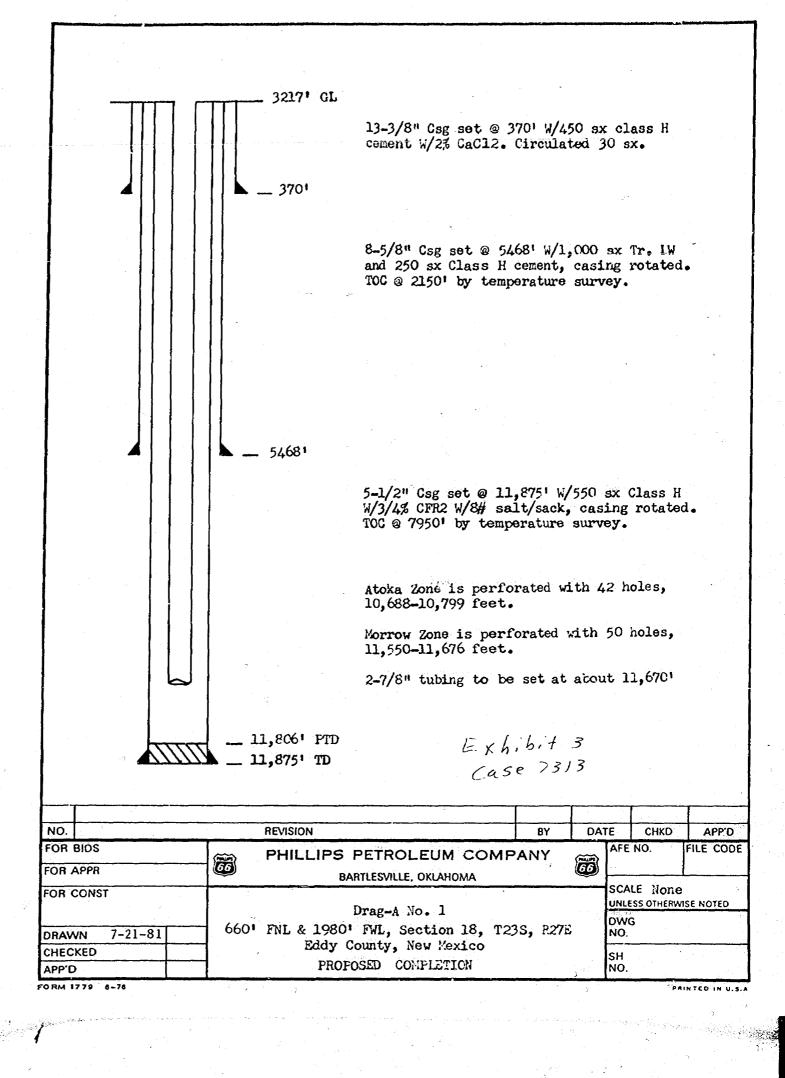
10. Calculated Bottom-hole Pressure from SIWHP of Upper Zone: 637 psi. F1 @ 10111' (887 psi).

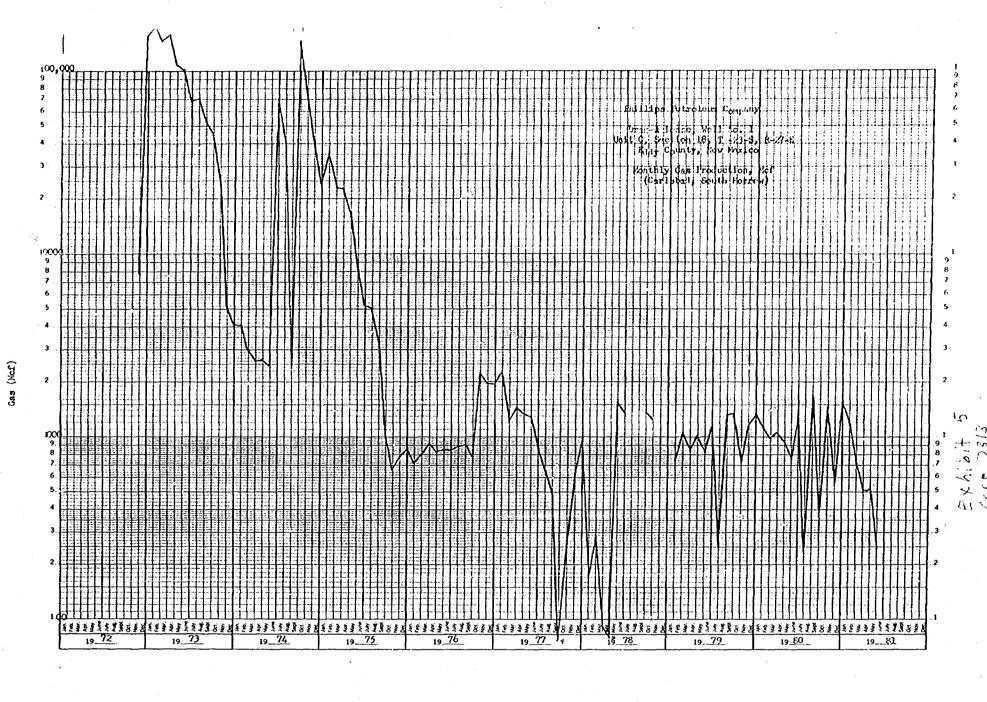
11. Calculated Bottom-hole Pressure from SIWHP of Lower Zone: 519 psi.

By: J. L. Blevins

Date: 7-22-81

Exhibit 2 Case 73/3





#### PHILLIPS PETROLEUM COMPANY

DRAG-A LEASE, WELL NO. 1
UNIT C, SECTION 18, T-23-S, R-35-E
EDDY COUNTY, NEW MEXICO

## PRODUCTION HISTORY CARLSBAD, SOUTH FIELD

| YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf | YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |
|-----------------|--------------------|-------------------|-----------------|--------------------|-------------------|
| 1972            |                    |                   | 1974            | 48<br>1            |                   |
| JAN             |                    |                   | JAN             | 4,022              | ZONE              |
| FEB             | *                  |                   | FEB             | 3,046              | SHUT-IN           |
| MAR             |                    | •                 | MAR             | 2,639              | 01-74             |
| APR             |                    |                   | APR             | 2,655              | 0                 |
| MAY a           | 600                | 233               | MAY             | 2,467              | 0                 |
| JUN             | 0                  | 0                 | JUN             | 71,422             | 0                 |
| JUL             | 0                  | 0                 | JUL             | 41,314             | 0                 |
| AUG             | 0                  | 0                 | AUG             | 2,437              | 0                 |
| SEP             | 0                  | 0                 | SEP             | 143,392            | 0.                |
| OCT             | . 0                | 0                 | OCT             | 77,341             | 0                 |
| NOV             | 7,828              | 978               | NOV             | 41,265             | 0                 |
| DEC             | 155,384            | 8,280             | DEC             | 24,835             | . 3               |
| TOTAL YR.       | 163,812            | 9,491             | TOTAL YR        | 416,835            | 0                 |
| ACCUM.          | 163,812            | 9,491             | ACCUM.          | 1,557,178          | 9,491             |
| 1973            |                    |                   | 1975            |                    |                   |
| JAN             | 182,892            | 0                 | JAN             | 36,914             | 0                 |
| FEB             | 141,641            | ő                 | FEB             | 23,891             | Ö                 |
| MAR             | 156,274            | Ŏ                 | MAR             | 22,954             | ő                 |
| APR             | 117,260            | ő                 | APR             | 16,305             | Ö                 |
| MAY             | 102,748            | · ŏ               | MAY             | 8,300              | ŏ                 |
| JUN             | 70,615             | 0                 | JUN             | 5,374              | ŏ                 |
| JUL             | 71,094             | 0                 | JUL             | 5,112              | Ŏ                 |
| AUG             | 53,146             | Ō                 | AUG             | 3,350              | ⇒ <b>0</b>        |
| SEP             | 46,774             | Ö                 | SEP             | 1,044              | Õ                 |
| OCT             | 24,983             | 0                 | OCT             | 685                | 0                 |
| NOV             | 5,001              | 0                 | NOV             | 781                | Ğ                 |
| DEC             | 4,103              | 0                 | DEC             | 872                | Ŏ,                |
| TOTAL YR.       | 976,531            | 0                 | TOTAL YR.       | 125,582            | 0                 |
| ACCUM.          | 1,140,343          | 9,491             | ACCUM.          | 1,682,760          | 9,491             |

Exhibit 6 Case 7313

DRAG-A LEASE, WELL NO. 1
PRODUCTION HISTORY, CONTINUED

| YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |     | YEAR &<br>MONTH | MORROW<br>GAS, Mcf | ATOKA<br>GAS, Mcf |
|-----------------|--------------------|-------------------|-----|-----------------|--------------------|-------------------|
| 1976            |                    |                   |     | 1978            |                    |                   |
| JAN             | 733                | 0                 |     | JAN             | 175                | 0                 |
| FEB             | 808                | Ō                 |     | FEB             | 285                | 0                 |
| MAR             | 924                | 0                 |     | MAR             | 72                 | 0                 |
| APR             | 830                | 0                 |     | APR             | 36                 | 0                 |
| MAY             | 849                | 0                 |     | MAY             | 1,598              | 0                 |
| JUN             | 852                | 0                 |     | JUN             | 1,358              | 0                 |
| JUL             | 887                | 0                 |     | JUL             | ·                  | . 0               |
| AUG             | 914                | 0                 |     | AUG             |                    | 0                 |
| SEP             | 779                | 0                 |     | SEP             | 1,384              | 0                 |
| OCT             | 2,238              | 0                 |     | OCT             | 1,261              | 0                 |
| NOV             | 1,984              | 0                 |     | NOV             |                    | 0                 |
| DEC             | 1,976              | 0                 |     | DEC             |                    | 0                 |
| TOTAL YR.       | 13,814             | 0                 |     | TOTAL YR.       | 6,169              | 0                 |
| ACCUM.          | 1,696,574          | 9,491             |     | ACCUM.          | 1,714,035          | 9,491             |
| 1077            | •                  |                   |     | 1070            | -<br>-             |                   |
| 1977            |                    |                   |     | <u>1979</u>     |                    |                   |
| JAN             | 2,214              | 0                 |     | JAN             | 758                | 0                 |
| FEB             | 1,226              | 0                 |     | FEB             | 1,050              | 0                 |
| IAR             | 1,436              | 0                 | ·3  | MAR             | 851                | 0                 |
| APR             | 1,343              | 0.                |     | APR             | 1,029              | 0                 |
| 1AY             | 1,291              | 0                 |     | MAY             | 829                | 0                 |
| JUN             | 858                | . 0               |     | JUN             | 1,141              | 0                 |
| JUL 🤼           | 655                | 0                 |     | JUL             | 254                | O                 |
| AUG             | 489                | 0                 | * * | AUG             | 1,316              | 0                 |
| SEP             | 4                  | - 0               |     | SEP             | 1,324              | 0                 |
| CT              | 257                | 0 4               | •   | OCT             | 728                | 0                 |
| VOV             | 587                | 0                 |     | NOV             | 1,172              | 0                 |
| DEC             | 932                | 0                 |     | DEC             | 1,338              | 0                 |
| TOTAL YR.       | 11,292             | 0                 |     | TOTAL YR.       | 11,790             | 0                 |
| CCUM.           | 1,707,866          | 9,491             |     | ACCUM.          | 1,725,825          | 9,491             |

DRAG-A LEASE, WELL NO. 1

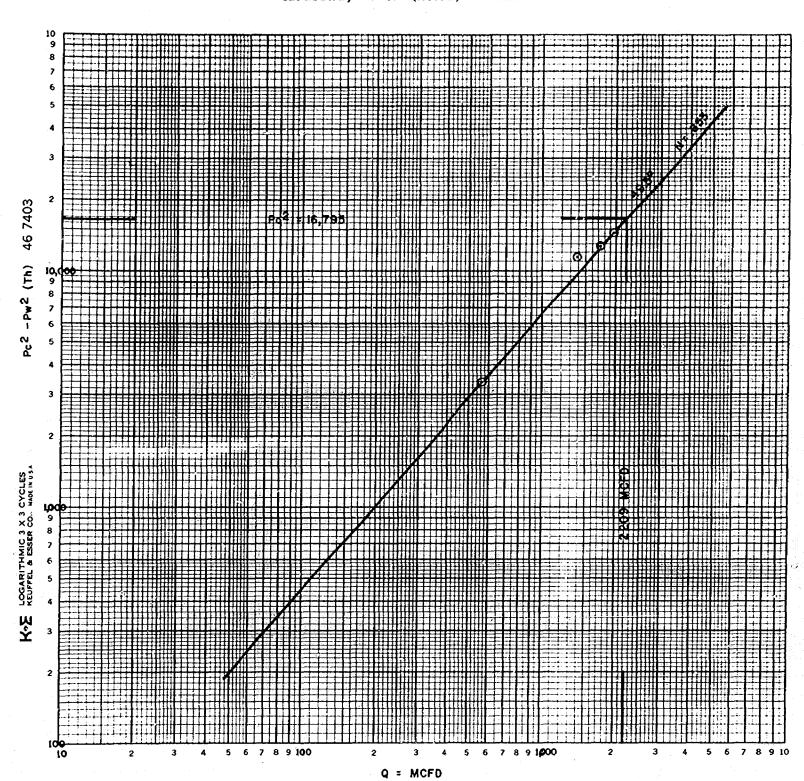
PRODUCTION HISTORY, CONTINUED

| YEAR &      | MORROW    | . ATOKA  |
|-------------|-----------|----------|
| MONTH       | GAS, Mcf  | GAS, Mcf |
|             |           |          |
| 1980        |           |          |
| JAN         | 1,103     | · 0      |
| FEB         | 997       | 0        |
| MAR         | 1,055     | 0        |
| APR         | 959       | 0        |
| MAY         | 771       | 0        |
| JUN         | 1,293     | 0        |
| JUL         | 238       | 0        |
| AUG         | 1,647     | 0        |
| SEP         | 387       | 0        |
| OCT         | 1,482     | 0        |
| NOV         | 648       | · 0      |
| DEC         | 1,547     | 0        |
| TOTAL YR.   | 12,127    | 0        |
| ACCUM.      | 1,737,952 | 9,491    |
|             |           | •        |
|             |           |          |
| <u>1981</u> |           |          |
| JAN         | 1,245     | 0        |
| FEB         | 749       | 0        |
| MAR         | 513       | 0        |
| APR         | 512       | 0        |
| MAY         | 249       | 0        |
| TOTAL YR.   | 3,268     | 0        |
| ACCUM.      | 1,741,220 | 9,491    |

# Exhibit 7 ( a se 73/3 NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

|             | Τ̈́Υ           | pe Test                     |                  |             |                                |            |                             |        |                |                    |                         |                    | Te              | st Dat       |  |       | r  |               |        | ·          |
|-------------|----------------|-----------------------------|------------------|-------------|--------------------------------|------------|-----------------------------|--------|----------------|--------------------|-------------------------|--------------------|-----------------|--------------|--|-------|--|---------------|--------|------------|
|             |                |                             | Initio           | rl          | . [                            | $\neg$ $A$ | nnual                       |        |                |                    | ∏ Sp                    | ecial              | 1               |              | 5-72                                   |       | Fod  | T co #1       | m.m    | 540701-A   |
|             | Co             | mpany                       |                  |             |                                |            |                             | ection | <u> </u>       |                    |                         |                    |                 | J 2          |  |       | reu,   | Lac. W        | VITO.  | J4U/UL-A   |
|             | P              | hillips                     | Petro            | oleun       | Company                        |            | Sh                          | ut :   | in             | pend               | ling co                 | nnec               | cti             | on           |  |       |  |               |        |            |
|             | Po             |                             |                  |             |                                |            |                             | atton  |                |                    | <u>y</u>                |                    |                 |              |  |       | Unit   |               |        |            |
|             |                |                             |                  |             | oka) Gas                       |            | At                          | oka    |                |                    |                         |                    |                 |              |  |       |  | <b>-</b>      |        |            |
|             |                | mpletion Date               | e                |             | Total Depth                    |            |                             |        | PI             | ig Back            |                         |                    | Flb<br>39       | Yajipi       | Gr.                                    |       | Formo  | r Lease N     | ame    |            |
|             |                | -16-72                      | -                |             | 11875                          |            |                             |        | <u> </u>       |                    | .806                    |                    | $3\overline{2}$ | <u>3ź'</u>   | ĎĒ                                     | _     | Dı   | cag-A         |        |            |
| *           |                | g. Size<br>-1/2"            | wı.<br>17#,      | 20#         | ,d<br>3,434                    | Sei        | 1875                        |        | l I            | rforallo<br>om     | 10686                   | τ.                 |                 | 1079         | on.                                    | ļ     | Well No                                      |               |        |            |
|             |                | g. Sizo                     | WI.              | 20#         | 9 9 9 9 9                      |            | AI                          |        |                | rioralio           |                         |                    |                 | 107          | 99                                     |       | Unit   | Soc.          | Tw     | , Rge,     |
|             | _              | _                           |                  |             |                                |            |                             |        | Fr             | om                 |                         | т                  | o               |              | _                                      |       | С  | 18 2          | 23-8   | •          |
|             | Tys            | e Weil - Sinc               | le - Brac        | lenhead     | -G.G. or G.C                   | , Mu       | liple                       |        | L              |                    | Packer                  | el Al              |                 |              |  |       | County                                       |               |        | <u>,</u>   |
|             | G              | . G. Mul                    | ltiple           | 2           |                                |            |                             |        |                |                    |                         | 114                |                 |              |  |       |  | Eddy          |        |            |
|             |                | ducing Thru                 |                  |             | oir Temp. *F                   | $\neg$     |                             |        | Ter            | np. F              | Baro. Pr                | ess. ~             | Pa              |              |  |       | State  |               |        | 1.0        |
| *           | a              | nnulus                      |                  | 176         | # 11800                        |            |                             | 60     |                |                    | l                       | <u>13.2</u>        |                 | <del></del>  |  | 1     |  | lew Mex       |        |            |
|             | 1              | L<br>0600                   | H<br>1069        |             | GQ .                           |            | % CO.                       |        | 5              | % N 2              | 0.7                     | % H <sub>2</sub> S | ;               | 1            | Prover                                 |       | Meter  |               | Tar    |            |
| }           |                | 0688                        | 1068             | -           | .6003                          |            | .01                         | 4/     |                | .0                 | 07                      |                    |                 |              | <del></del>                            |       |  | 3"            | FI     | ange       |
| ŀ           |                | Prover                      |                  | Orifice     | Press.                         | T-         | Diff                        |        |                |                    | Pres                    | ING                | 7               |              |  |       |  | DATA          | -      | Duration   |
|             | ۷0.            | Line<br>Size                | х '              | Size        | p.s.i.g.                       |            | hw<br>Ditt                  | '      |                | emp.<br>•F         | p.s.i                   |                    |                 | Temp.        |  | P.8.1 |  | Temp.<br>• F  |        | Flow       |
| ŀ           | SI             | . 3126                      |                  | ·           |                                | +          |                             |        |                |                    | 409                     | 8                  | +-              |              |  | 108   | 5  | 81            | -      |            |
|             | 1.             | 3.068                       |                  | 1.00        | 160                            | 1          | 50                          |        |                | 92                 | Morro                   |                    | +-              |              |  | 367   |  | 81            | -      | 1 hr.      |
|             | 2.             | 11                          |                  | 1.75        | 450                            |            | 10                          |        |                | 84                 | Comp1                   |                    | n               |              |  | 229   |  | 82            |        | 11         |
| [           | 3.             | 11                          |                  | 1.75        | 410                            | $\perp$    | 17                          |        |                | 80                 | Shut-                   | In                 |                 |              | 1                                      | 96    | 2  | 82            |        | 11         |
|             | 4.             | 11                          |                  | 1.75        | 410                            |            | 22                          |        |                | 86                 |                         |                    | <del> </del>    |              |  | 514   | 4  | 83            |        | 11         |
| }           | 5.             | <u> </u>                    |                  |             | L                              | ╀-         |                             |        |                |                    |                         |                    | 1               |              |  |       |  |               |        |            |
| -           | <del></del> -  |                             | · · · · · · ·    | 7           |                                | Т          | RAT                         | EOF    | <del>-</del> F |                    | CALCU                   | ATIC               |                 |              | <del></del>                            |       |  | <del></del>   |        |            |
| -           |                | Coeffic                     | lent             | _           | √h <sub>w</sub> P <sub>m</sub> |            | Pres                        | erve   | J              |                    | Temp.                   |                    |                 | vily<br>ctor |  |       | uper<br>press.                               | F             | late c | Flow       |
| r           | 10.            | (24 Ho                      | 525)             | ]           | ▼ ''w' m                       |            | F                           | m      |                | 100                | Ft,                     | 1:                 | F               |              | - I.                                   |       | or, Fpv                                      | -             | Q, 1   | Mold       |
| T           | 1              | 4.789                       |                  | 1           | 93.06                          | 1          | 173.                        | . 2    | 十              | .9                 | 706                     | 1                  | . 28            | 30           |  | 1.0   | 013  | _             | 56     | 1          |
|             | 2.             | 15.61                       |                  |             | 68.06                          |            | 463.                        | . 2    |                | .9                 | 777                     | ,                  | 11              |              |  | 1.0   | )35  |               | 137    |            |
| -           | 3.             | 11                          | ·                | ļ           | 84.82                          | _          | 423.                        |        | $\dashv$       |                    | 313                     | ļ                  | "               |              | _                                      | 1.0   | )33  |               | 171    |            |
| <u> </u>    | 4.             | 11                          |                  | <b> </b>    | 96.49                          | -          | 423.                        | 2      | -              | <u>.97</u>         | 759                     | <u> '</u>          |                 |              |  | 1.0   | )33  | _             | 194    | 4          |
| -           | 5.             | ·                           | 1.               | <del></del> |                                |            |                             |        |                |                    |                         | L                  |                 |              |  |       |  |               |        |            |
|             | 10.            | Pr <sub>.</sub>             | Temp.            | •R          | T <sub>r</sub>                 | :          | z                           | l      |                |                    | irocarbon               |                    |                 |              | <del></del>                            |       |  | ·             |        | _ McI/bbl. |
| ŀ           | 1              | Calcula                     | ions             | made        | hy Elec                        | tro        | nic                         |        |                |                    | of Liquid<br>y Separata |                    |                 |              |  |       |  | 1             |        | Deg.       |
| -           |                |                             |                  |             | am based                       |            |                             |        |                |                    | y Flowing               | -                  |                 |              |  |       |  | 1             | _^_    | ^^^        |
|             | -              |                             | 1                |             | for Bac                        |            |                             |        |                |                    | re                      |                    |                 | 671          |  |       | P.S.I.                                       | Α.            |        | P.S.I.A.   |
| -           |                | Pressur                     | e tesi           | ting        | of gas w                       | ell        | s,                          | Criti  | cal '          | Temper             | rature                  |                    |                 | 358          |  |       |  | R             |        | я          |
| _           | 5.             | 4098.2                      | <u> </u>         | 1679        |                                |            | [                           |        |                |                    | <del> </del>            |                    |                 |              | ــــــــــــــــــــــــــــــــــــــ |       | · · · · · · · · · · · · · · · · · · ·        | <del></del>   |        |            |
|             | F <sub>C</sub> | P <sub>t</sub> <sup>2</sup> | P <sub>C</sub> 2 |             |                                | p 2        | P <sub>w</sub> <sup>2</sup> | (1)    |                | P <sub>C</sub> 2   | ·<br>=                  | 167                | 795             |              | (2)                                    |       | $P_c^2$                                      | ]             | 1.1    | L364       |
| H           |                |                             | P <sub>w</sub>   |             |                                |            |                             |        | Pe             | - P.2              |                         | 144                | 157             |              | , (2)                                  | Pc    | 2 - R2                                       | _             |        |            |
| 1           |                | 13,610<br>53,278            | 3689<br>2308     |             | 3,611<br>5,331 1               | 2.1.21     | 84<br>64                    |        |                |                    |                         |                    |                 |              |  | -     |  | ~             |        |            |
| 13          |                | 39,014                      | 1976             |             | 3,906 1                        | 2 8<br>T 4 | 80                          | 105    | - 0            |                    | Pc2                     | <b>]</b> n_        |                 | 220          | 09                                     |       |  | •             |        |            |
| 14          |                | 23,323                      | 1529             |             | 2.338 1                        | 4:4        | 57                          | AOF    | = Q            | ` .   <del>-</del> | $\frac{R^2}{R^2 - R^2}$ | -                  |                 |              |  | -     |  |               |        |            |
| 3           | _              |                             |                  |             |                                |            |                             |        |                | <u> </u>           |                         |                    |                 |              |  |       | <u>.                                    </u> |               |        |            |
|             | bsc            | olute Open F                | lcw              |             | 2209                           |            |                             |        |                | McId &             | 15.025                  | Angle              | of s            | Slope        | گنشنہ ⊖                                | 49.   | 5  | Slope         | , n    | .853       |
| ١,          | tem            | arks: Equ                   | uipmer           | it tr       | ouble be                       | twe        | en f                        | irst   | t a            | nd s               | econd                   | rate               | s.              |              |  |       |  |               |        |            |
| 5 [ <u></u> |                |                             |                  |             | ed throu                       |            |                             |        |                |                    |                         |                    |                 |              |  |       |  |               |        |            |
|             |                |                             |                  |             |                                |            |                             |        |                |                    | 1                       |                    |                 |              |  |       |  |               |        |            |
| 1           | (ppt           | oved By Com                 | wnission:        |             | Conducted<br>D. E              | -          |                             | on.    |                |                    | Calculate<br>D          | ı ву:<br>Е. S      | j m             | neo-         |  | C     | hecked  <br>W                                | By:<br>J. Mue | 11 -   | ,          |
| - 1         |                |                             |                  |             |                                |            |                             | - · ·  |                | - 1                |                         | U                  |                 | -201         | •                                      |       | ** *   | a rinc        |        |            |

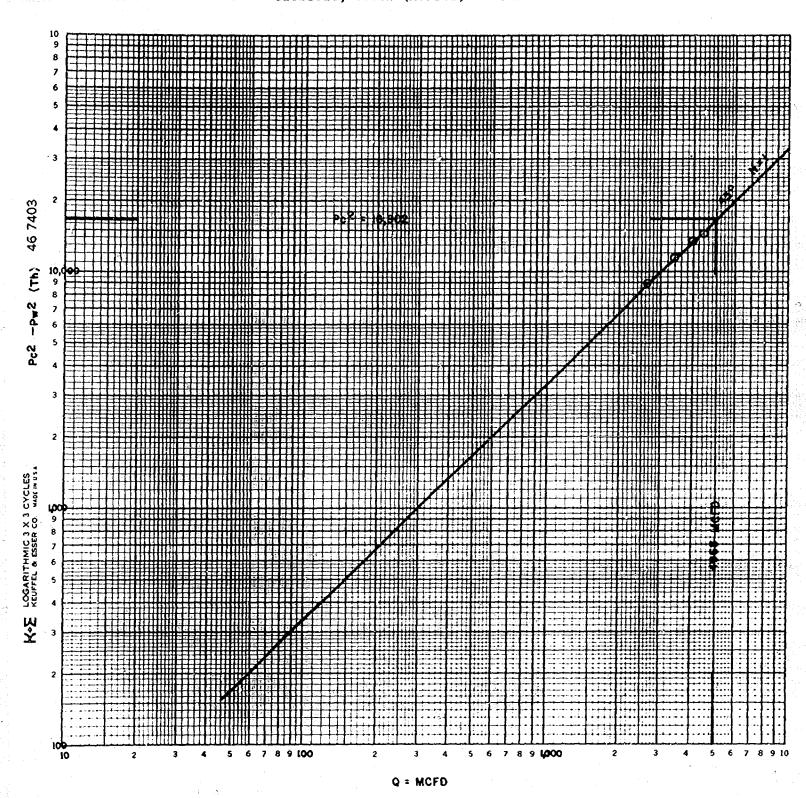
Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Atoka) -- Gas



# Exhibit 8 Case 73/3 NEW MEXICO OIL CONSERVATION COMMSSION MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| Ty       | pe Test        | ·                                     |              |                                |          | <del></del>                   |             |                            |                 |  | Test Dat     | e            |                         |             |              |                      |
|----------|----------------|---------------------------------------|--------------|--------------------------------|----------|-------------------------------|-------------|----------------------------|-----------------|--|--------------|--------------|-------------------------|-------------|--------------|----------------------|
|          | -              | nitia 🎖                               | 1            |                                | $\Box$   | Annual                        |             |                            | □ Spe           | ecial  |              | 5-72         | ľ                       | Tao         | MMA          | 540701-A             |
| co       | mpany          |                                       | ·            |                                |          |                               | ection      |                            |                 |  | 242          | 3-12         | reu,                    | nae'        | MITO         | 340701~A             |
| 1        | hillips        | Petro                                 | Jeum         | Compan                         | v        | - 1                           |             | n pend                     | ing co          | nnec   | tion         |              | İ                       |             | _            |                      |
| Po       |                | 10010                                 | 12001        | Compan                         | <i>y</i> |                               | ation       | in pend                    | Ting CC         | inicc  | CIOII        |              | Unit                    |             |              |                      |
|          | ar1sbad        | Sout                                  | h (M         | (orrow)                        | Gas      |                               | rrow        | J                          |                 |  |              |              |                         |             |              |                      |
|          | mpletion Date  |                                       |              | Total Depth                    |          |                               |             | Plug Back                  | TD              | Ti   | Elevation    |              | Farm o                  | r Leaso I   | Vame         |                      |
| ŧ        | -21-72         |                                       |              | 11,875                         | t        |                               | ĺ           | 11.8                       |                 |  | 5617'P'      |              |                         | ag-A        |              |                      |
|          | g. Size        | WI.                                   |              | d                              |          | el At                         |             | Perforatio                 |                 |  | 3237!        | DE           | W IIOW                  |             |              | CAN ARTER FRANCE     |
| 5        | 0-1/2"         | 17#.                                  | 20#          | 3.434                          | 1        | 1,875                         | ,           | From 11                    |                 | То   | 11,0         | 6761         |                         | 1.          |              |                      |
| Tr       | g. Sizo        | WI.                                   |              | d                              | _  ¥     | el At                         |             | Perforation                |                 |  |              |              | Unit                    | Sec.        | Tw           | p. Rge.              |
| 2        | -7/8"          | 6.5#                                  |              | 2.441                          | 1        | 1,470                         |             | From                       |                 | То   |              | -            | c                       | 18          | 23           | -S_27~E              |
| Ty       | re Well - Sing | le – Brad                             | enhoad       | -G.G. or G                     | .O. N    | fulliple                      |             |                            | Packer S        | et At  |              |              | County                  | '           |              |                      |
|          | G. G.          |                                       |              |                                |          |                               |             | Temp. °F                   | 1               | 1,470  | ) (          |              |                         | Eddy        |              |                      |
| Fre      | ducing Thru    |                                       | Reserv       | oir Temp, *F                   | •        |                               |             | Temp. *F                   | Bato. Pr        | ess 1  | Pa           |              | State                   |             |              |                      |
| T        | ubing          |                                       | 176          | <i>9</i> 11800                 |          |                               | 60°         |                            | 1               | 3.2<br>% н <sub>2</sub> s                        |              |              | Nev                     | ø Mexi      | co           |                      |
|          | L              | Н                                     |              | G⊄                             |          | % CO                          | 2           | % N 2                      | 1:              | % H <sub>2</sub> S                               |              | Prover       | Mele                    | Run         | Ta           | ps                   |
| 1        | 1550           | 1155                                  | 0            | .5782                          |          | .01                           | 02          | .00                        | 26              |  |              | 4-6-6-       | 31                      | 1           | F            | lange                |
| _        |                | · · · · · · · · · · · · · · · · · · · | FL           | OW DAT                         | ٩        |                               |             |                            | TUE             | BING D   | DATA         |              | CASING                  | DATA        |              | Duration             |
| NO       | Prover         | X C                                   | Orllice      | Press.                         |          | Diff                          |             | Temp.                      | Pres            |  | Temp         |              | ress,                   | Темр        | .            | of<br>               |
|          | Size           |                                       | Size         | p.s.i.g.                       | _        | hw                            |             | *F                         | p.s.i.          | .g. △∠`  | •F           |              | 8,1,9,                  | • F         |              | Flow                 |
| SI       | ļ              |                                       |              | <u> </u>                       |          |                               |             |                            | 409             |  | 81           |              | 4085                    |             |              | * \                  |
| 1.       | 3.068          |                                       | 2.00         |                                | _        | 10                            |             | 76                         | 278             |  | 85           |              | toka                    |             |              | l hour               |
| 2.       | 11             |                                       | !!           | 780                            | _        | 17                            |             | 72                         | 225             |  | 83           |              | oletion                 | <u> </u>    |              | <u>hour</u>          |
| 3.       | 11             |                                       |              | 780                            | -        | 24                            |             | 77                         | 173             |  | 85           |              | :-In                    |             |              | hour                 |
| 4.       |                |                                       |              | 780                            | -        | 28                            |             | 74                         | 136             | 2  | 83           |              | oing/ca                 | sing        | 1            | hour                 |
| 5.       | L              |                                       |              | <u> </u>                       |          |                               |             | ليرد                       |                 |  |              | l_ar         | mulus)                  | <del></del> |              |                      |
| <u> </u> |                |                                       | 1            |                                |          | RAT                           | EOF         | FLOW                       | CALCUL          | -ATIO  | NS           |              |                         |             |              |                      |
|          | Coeffic        | fent                                  | _            |                                | - ,      | Pres                          | sevie       | 1                          | Temp.           | ţ  | Gravity      |              | Super                   |             | Rate         | of Flow              |
| NO.      | (24 Ho         | (זטי                                  | _            | √h <sub>w</sub> P <sub>m</sub> |          | F                             | m<br>o      |                            | actor<br>Ft,    | 1  | Factor<br>Fa |              | Comptess.<br>actor, Fpv | . [         | Q,           | McId                 |
| 1        | 01 00          |                                       | <del> </del> | 00 10                          |          |                               |             |                            |                 | <del>                                     </del> |              |              | <del></del>             | <del></del> | 0607         |                      |
| 2        | 21.32          |                                       | <del> </del> | 90.18                          |          |                               | 3.2         |                            | 350             |  | 311          |              | 1.058                   |             | 2627         |                      |
| 3.       | . 11           |                                       |              | 116.12                         |          | 11                            | 3.2         |                            | 387             | 1  |              |              | 1.059                   |             | 3398         |                      |
| 7        | (1             |                                       |              | 137.98<br>149.03               |          | 11                            |             |                            | 340<br>368      | 11   |              |              | 1.058<br>1.059          |             | 4015<br>4353 |                      |
| 5        | <u> </u>       |                                       |              | 42.03                          |          |                               |             |                            | 000             | <del> </del>                                     |              |              | -ELVIE                  | ·-          | 100          | ·                    |
|          |                | Г                                     |              |                                |          |                               | Can         | Liquid Hyd                 | les eaches I    | <del>L</del><br>Datta                            |              |              |                         | ·           |              |                      |
| NO.      | P <sub>r</sub> | Temp.                                 | *R           | T <sub>r</sub>                 |          | 2                             |             | Liquia nyo<br>I, Gravily o |                 |  |              |              | **                      |             |              | McI/bbl. [<br>Deg. ] |
| 1.       | Calcula        | tions                                 | made         | by ele                         | ctr      | onic                          |             | ific Gravity               | •               |  |              | .578         |                         | V V         | Y Y Y        | XXXX                 |
| 2.       | calcula        |                                       |              | gram bas                       |          |                               | -           | ilic Gravit                |                 | 100  |              | xxxx         | x                       | 1           | .,.,,        | <u> </u>             |
| 3.       | New Mex        |                                       |              |                                |          |                               |             | cal Pressu                 |                 |  | 72           |              | P.S.1.                  | A. [        |              | P.S.1.A.             |
| 4.       | pressur        |                                       |              |                                |          |                               |             | cal Temper                 |                 | 3  | 49           |              |                         | R           |              | R                    |
| 5.       | 11. 7%         |                                       | 100          |                                |          |                               |             |                            |                 |  |              |              |                         |             |              |                      |
| Cc.      | 4111.2         | $r_c^2$ 1                             | 16902        |                                |          |                               |             | P_2                        |                 | 160  | ი2           | r            | p 2                     | 7,          | 7            | 1/15                 |
| NO       |                | Pw                                    |              | P <sub>w</sub> <sup>2</sup>    | Pc2      | - P <sub>w</sub> <sup>2</sup> | (1) _       | $P_c^2$ $P_c^2 - P_c^2$    | = -             | 1/19   | 06           | (2)          | $P_c^2$ $P_c^2 - R_w^2$ | -  =-       | <u> </u>     | 1417                 |
| 1        | 7847           | 2815.                                 | 9            | 7929                           | 89       | 73                            |             | 16" - 18"                  |                 | 140  |              | L            | Pc" ~ hw                | ال ا        |              |                      |
| 2        | 5131           | 2291.                                 |              |                                | 116      |                               |             | _                          | •               | <b>7</b> _                                       |              | s j          |                         | -           |              |                      |
| 3        | 3042           | 1792.                                 |              |                                | 136      |                               | AOF         | = 0  -                     | ુ<br>જ          | _ [ " = .  | 49           | 68           |                         |             |              |                      |
| 4        | 1891           | 1447.                                 | 7            | 2096                           | 148      | 06                            |             | . L                        | $P_c^2 - R_r^2$ |  | ್ರ           | ,            |                         |             |              |                      |
| 5        |                | L                                     |              |                                |          | l                             |             |                            |                 |  |              |              |                         | <del></del> |              |                      |
| Abs      | olute Open F   | low                                   | 4            | ,968                           |          |                               |             | Mcfd e                     | 15.025          | Angle  | of Slope     | e4           | 5                       | Slop        | o, n_        | 1.00                 |
| Hem      | ark <b>s</b> ; |                                       |              | <del></del>                    |          |                               |             | 7,14.5                     | <del></del>     | <del>-,</del>                                    |              |              |                         |             |              |                      |
|          |                | ·                                     |              |                                |          |                               | <del></del> |                            |                 |  |              | <del> </del> |                         | <del></del> |              |                      |
| Ann      | oved By Com    | mission                               |              | Conduct                        | ed By    | <del>/:</del>                 |             | <del></del>                | Cálculated      | By   |              |              | Checked                 | By:         |              |                      |
|          |                |                                       |              |                                |          | E. Si                         | moso        |                            |                 |  | npson        |              |                         | J. Mue      | 11e          | , l                  |

Phillips Petroleum Company
Drag-A No. 1
18, 23-S, 27-E
Eddy County, New Mexico
May 25, 1972
Carlsbad, South (Morrow) -- Gas



| ŢΝ   | 5T | • | METH                 | 1 | FILE | 48 |
|------|----|---|----------------------|---|------|----|
| <br> |    |   | <b>-</b> <del></del> |   |      |    |

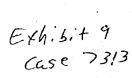
RUH

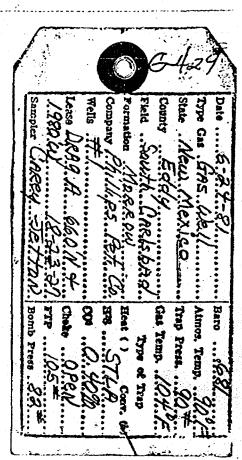
| <br>COMPONENT | FINAL MOL % |
|---------------|-------------|
| C6 PLUS       | .99         |
| H2            | .72         |
| C1            | 96.38       |
| 002           | .57         |
| ETHANE        | 1.67        |
| 53            | .28         |
| 164           | .07         |
| NC4           | . 26.       |
| 185           | .84         |
| HCS           | .82         |
| TOTAL         | 190         |

| PRESSURE BASE AT 60 DEG. F |
|----------------------------|
|----------------------------|

CAL. SP. GR.

|               |       | 14.696  | 14.65  |
|---------------|-------|---------|--|
|               |       |         | ing the second of the second o |
| CS PLUS       | CSW   | .0337   | .0386  |
| ETHANE        | GPM   | .4453   | .4439  |
| 0.3           | GPM   | . 9768  | .9766  |
| IC4           | GPM   | .0228   | .0227  |
| NC4           | SPM   | . 3133  | .0138  |
| - IC5 .       | GFM   | .0146   | .0145  |
| NC5           | GPM   | .0072   | .3872  |
| TOTAL SPM     |       | . \$242 | .5223  |
| Z FACTOR=     |       | .997966 |  |
| SAT. BASIS BY | ru 18 | 105.2   | 1992.05  |





INST 1 METH 1 FILE 28

RUN : G-434 8 : 57.3 7 / 1 / 81

| COMPONENT                               | FINAL MOL | %              |
|---|-----------|----------------|
| ⊁ OS PLUS                               |           | A Possible Bom |
| H2                                      | .73       | Contaminant    |
| 01                                      | 95,27     |                |
| 002                                     | . 45      |                |
| ETHANE                                  | 2,46      | •              |
| CI                                      | .46       |                |
| I04                                     | . 23      |                |
| <b>%04</b>                              | .1        |                |
| 105                                     | .37       |                |
| MC5                                     | .93       |                |
| * · · · · · · · · · · · · · · · · · · · |           | •              |
| TOTAL                                   | 188       | • ·            |
|   |           |                |

PRESSURE BASE AT 60 DEG. F.

|     |         |     | 14.575  | 14.55                  |
|-----|---------|-----|---------|------------------------|
|     | CS PLUS | ดคท | .1291   | .1297                  |
| r.e | ETHANE  | SPM | .656    | . 5539                 |
|     | 62      | GPM | .1262   | .1258                  |
|     | 104     | SP# | .2424   | .3422                  |
|     | NC4     | Sem | .0314   | .8313                  |
|     | IC5     | SPH | .0255   | . 2254                 |
| ,   | HC5     | GPM | .0108   | .9193<br>0.165<br>0.24 |
| TO  | TAL GPM |     | 1.0214  | 1.9181                 |
| _   | FACTOR= |     | .997855 |                        |
|     |         |     |         |                        |

Exh.b. + 18 Case 23/3

1924.51

SAT. BASIS BTU :027.72 CAL. SP. GR. .591

DRAG 'A' NO. 1
ECONOMICS OF COMMINGLING
MORROW AND ATOKA FORMATIONS

|             |   |   | Case 2: Indi  | vidual Production   |
|-------------|---|---|---|---|
| Gas (MCF)   | Cash Flow (\$)  |   | Gas (MCF)   | Cash Flow (\$)  |
| 65,897      | 74,477  |   | 10,611  | 10,986  |
|             | 42,729  |   | 8,020   | 7,885   |
|             | 24,629  |   | 6,061   | 5,506   |
|             | 14,166  |   | 4,581   | 3,671 - M   |
|             | 8,000   | ·   | 3,462   | 2,241 + ~   |
|             | 4,277   |   | 2,617   | 1,115   |
| 3,513       | 1,979   | 3   | 1,998   | 240   |
| •           |   |   | 55,286  | 60.84   |
|             |   |   | 30,341  | 31,964  |
|             |   |   | 16,652  | 15,988  |
|             |   |   | 9,139   | 7,085   |
|             |   |   | 5,015   | 2,049   |
| 158,051 MCF | \$170,257   |   | 153,783 MCF   | \$149,571   |
|             | 65,897<br>38,361<br>22,713<br>13,720<br>8,477<br>5,370<br>3,513 | 65,897 74,477 38,361 42,729 22,713 24,629 13,720 14,166 8,477 8,000 5,370 4,277 3,513 1,979 | 65,897 74,477 38,361 42,729 22,713 24,629 13,720 14,166 8,477 8,000 5,370 4,277 3,513 1,979 | 65,897 74,477 10,611 38,361 42,729 8,020 22,713 24,629 6,061 13,720 14,166 4,581 8,477 8,000 3,462 5,370 4,277 2,617 3,513 1,979 1,998 55,286 30,341 16,652 9,139 5,015 |

Increase in Cash Flow = \$20,686.

Exhibit 12 (450 73/3

March 2, 1972

Location: 660' FNL and 1980' FWL, Sec 18, T-23-S, R-27-E, Eddy County, New Mexico.

Drld 17-1/2" hole to 370'. Cmt'd 13-3/8" at 370' w/ 450 sx Class "H". Circ'd 30 sx cmt.

Cmt'd 8-5/8" csg at 5468' w/ 1000 sx Trinity LW cmt w/ 3# Gilsonite per sx followed by 250 sx Class "H" Neat cmt. Ran temp survey, top cmt outside 8-5/8" csg 2150'.

Ran 360 jts 5-1/2" csg at 11875'. Cmt'd w/ 550 sx Class "H" cmt. Ran temp survey, top cmt outside 5-1/2" csg at 7950'.

Set Baker Model F-1 prod pkr at 11470'. Schlum perf'd Atoka in 5-1/2" csg thru 2-7/8" tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot 10688-10691' 10694-10697', 10744-10750', 10794-10799'. SI 4-1/2 hrs, SICP 600%. Howco treated Atoka w/ 2500 gals 15% acid dwn tbg thru perfs 10686-10799'. Max press 4400%, min 4250%, inst SDP 4200%, 15-min SIP 3800%, 1-hr 2800%. SI 10 hrs, SITP 2200%, SICP 3400%. Flwd tbg to pit 2-3/4 hrs to clean up, FTP 2200% to 100%, rec 150 BLW, CP 3400%-500%. Flowed from csg 2 hrs, 1/4" ch, thru low press separator, gas rate 184 MCFD, FCP 500% to 700%. SI 3 hrs, SICP 700% to 1500%. Flowed thru csg 1 hr to high press separator, 10/64" ch, gas rate 795 MCFD, FCP 1700%, separator press 750% at 86° F. Flowed 2 hrs, 1/4" ch, from csg, gas rate 1400 MCFD, FCP 1150%, separator press 725% at 86° F. Flowed 3 hrs, 13/64" ch thru csg, gas rate 1000 MCFD, FCP 1200%, separator press 725% at 82° F. SI 10 hrs, SITP 3600%, SICP 3800%. SITP 4400%, CP 4600%. Howco treated Atoka down csg thru perfs 10686-10799' w/ 7500 gals 20% CRA acid. Max press 6000%, min 5000%, inj rate 6 BPM, inst SDP 4300%, 15-min 4200%, 90-min 3800%. Flowed 14 hrs thru tbg, 1/2" ch, gas rate 307 MCFD, specific gvty .599, no sulphur, 1.06 MOL CO2, 7-1/2 BLW, FTP 450%, CP 600%. SI 3 hrs, SITP 1600%, CP 1900%. 22nd, flowed thru csg 8 hrs, 13/64" ch, last 3 hrs on stabilized rate 1,300 MCFD, FCP 1150%, separator 820% at 90° F. SI 16 hrs, SICP 3700%.

May 22, 1972

Closed Baker sleeve at 11,451'. Atoka in csg annulus. Schlum perf'd Morrow in 5-1/2" csg thru tbg w/ 2" OD Hyperjet decentralized gun w/ 2 holes per foot, 11649-11653', 11550-11554', 11669-11676', 11604-11610'. SITP 2500#. Flowed 1 hr at stabilized rate 4100 MCFD, 3/8" ch, FTP 2600#, separator 800# at 60° F, 1/2 BLW. SI 9 hrs, SITP 3900#. Atoka zone shut in 49 hrs in csg, SICP 4100#. Morrow zone shut in 43 hrs in tbg, SITP 4300#. Atoka on 4-pt BP test: SICP 4085# first rate 1 hr, 6/64" ch, gas rate 534 MCFD, FCP 3676#; 2nd rate 1 hr, 10/64" ch gas rate 1348 MCFD, FCP 2275#; 3rd rate 1 hr, 12/64" ch, gas rate 1678 MCFD, FCP 1962# 4th rate 1 hr, 15/64" ch, gas rate 1909 MCFD, FCP 1514#. Specific gvty .602, no sulphur. Flowed Morrow thru tbg on 4-pt BP test: SITP 4098#. 1st rate 1 hr, 12/64" ch gas rate 2526 MCFD, FTP 2788#; 2nd rate 1 hr, 16/64" ch, gas rate 3247 MCFD, FTP 2252#, 3rd rate 1 hr, 20/64" ch, gas rate

3937 MCFD, FTP 1731#; 4th rate 1 hr, 24/64" ch, gas rate 4400 MCFD, FTP 1362#, specific gvty .582, no sulphur. Flowed Atoka thru csg on 4-pt BP test, SICP 3887#, 1st 1-hr rate, 8/64" ch, gas rate 1360 MCFD, FCP 2906#; 2nd 1-hr rate, 10/64" ch, gas 1680 MCFD, FCP 2121#; 3rd 1-hr rate, 14/64" ch, gas rate 1580 MCFD, FCP 1496#; 4th 1-hr rate, 17/64" ch, gas 1480 MCFD, FCP 986#. Morrow zone shut in during 4-hr BP test on Atoka in tbg, SITP start test 3919#, end of test 3913#. Calculated absolute open flow pote Morrow zone 4968 MCFD, no liquid, gas gvty .578. Calculated absolute open flow pote Atoka zone 2209 MCFD, no liquid, gas gvty .6003. Morrow perfs 11550-11676'. Atoka perfs 10688-10799'. Dual completion in Atoka and Morrow formations.

May 22, 1974

Atoka zone shut down.

June 10, 1974

Perforated additional section in Morrow 11550-11676'. Treated Morrow 11550-11786' with 3150 gallons 7-1/2% MS acid in 3 stages. Drilled and pushed Baker packer to bottom. Tested Morrow, 1" ch, 2891 MCFD, 1 BW, FTP-500#.

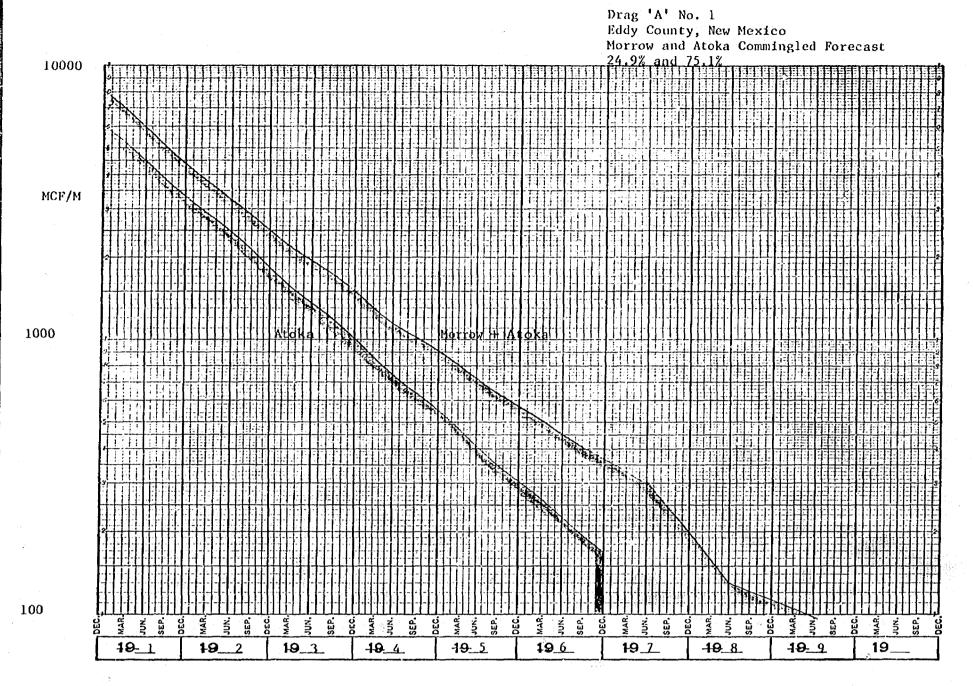
September 6, 1974

Treated Morrow thru Casing Perforations 11550-11786' with 1000 gallons 7-1/2% HCL acid and 5000 gallons 7-1/2% HCl with nigrogen. Treated thru perforations 11778-11786' with 500 gallons 7-1/2% HCL acid. Set cement retainer 11476' and squeezed perforations 11550-11786' with 40 sacks cement, top cement on retainer 11464', PBTD. Perforated Morrow with 2 jet per foot, 11406-11414, and returned to production. Tested Morrow at 7924 MCFD, 3 BW, FTP 1900# on 28/64" ch.

January 21, 1975

Dowell treated Morrow dwn 2-7/8" tbg thru csg perfs 11406-11414' w/ 500 gals 7-1/2% LST acid w/ F-2 and clay agents. Max press 4100%, min 1500%, final 3750%, inst SDP vacuum. Avg inj rate 1.5 BPM. Flowed 24 hrs, 1" chk, 2550 MCF gas, 3 BSW, FTP 475%, line press 430%, from Morrow perfs 11,406-11,414'.





Dockets Nos. 25-81 and 26-81 are tentatively set for August 12 and 26, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

#### DOCKET: COMMISSION HEARING - MONDAY - JULY 20, 1981

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205 STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

#### CASE 6892: (DE NOVO)

Jan 1

Application of Merrion & Bayless for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the South Blanco-Pictured Cliffs Pool underlying the SW/4 of Section 27, Township 24 North, Range 2 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Upon application of Merrion & Bayless, this case will be heard De Novo pursuant to the provisions of Rule 1220.

Docket No. 24-81

#### DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 29, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 7309: Application of Gulf Oil Corporation for a unit agreement, Eddy County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the South Shugart Deep Unit Area, comprising 3,806 acres, more or less, of State and Federal lands in Townships 18 and 19 South, Range 31 East.
- Application of Amoco Production Company for a unit agreement, Lea County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the El Alto Grande Unit Area, comprising 2,560 acres, more or less, of Federal lands in Township 22 South, Ranges 33 and 34 East.
- CASE 7311: Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the Big Sinks Federal Exploratory Unit Area, comprising 3,520 acres, more or less, of State and Federal lands in Townships 25 and 26 South, Range 31 East.
- CASE 7280: (Continued from July 15, 1981, Examiner Hearing)

Application of Northwest Pipeline Corporation for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Rosa Unit Well No. 77 located in Unit L of Section 33, Township 31 North, Range 5 West, to produce gas from the Mesaverde formation and commingled Gallup and Dakota production through separate strings of tubing.

- CASE 7312: Application of Phillips Petroleum Company for downhole commingling, Eddy County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow production in the wellbore of its Malaga A Well No. 2 located in Unit D of Section 2, Township 24 South, Range 28 East, Malaga Field.
- CASE 7313: Application of Phillips Petroleum Company for downhole commingling, Eddy County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow production in the wellbore of its Drag A Well No. 1 located in Unit C of Section 18, Township 23 South, Range 27 East, South Carlsbad Field.
- CASE 7314: Application of Elliott Oil Company for downhole commingling, Rio Arriba County, New Mexico.

  Applicant, in the above-styled cause, seeks approval for the downhole commingling of Gallup, Dakota, and Mesaverde production in the wellbore of its ORA Well No. 1 located in Unit E of Section 21, Township 25 North, Range 3 West.

Jason Kellahin W. Thomas Kellahin Karen Anbrey KELLAHIN and KELLAHIN
Attorneys at Lase
500 Don Gaspar Avenue

500 Don Gaspar Avenue Post Office Box 1769 Santa Fe, New Mexico 87501 JUL 0 8 1981

OIL CONSERVATION INVESTIGATION SANTA FEE Code 505

June 26, 1981

Mr. Joe Ramey Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

RE: Phillips Petroleum Company

Drag A No. 1 well Downhole Commingling Case 73/3

Dear Joe:

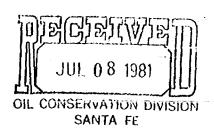
Please set the enclosed application for an examiner hearing on July 29, 1981.

Very truly yours

W. Thomas Kellahin

WTK:jm Enclosure

cc: Mr. Joe Peacock



#### STATE OF NEW MEXICO

### DEPARTMENT OF ENERGY AND MINERALS OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF PHILLIPS PETROLEUM COMPANY FOR DOWNHOLE COMMINGLING, EDDY COUNTY NEW MEXICO

Cas 7313

#### APPLICATION

COMES NOW PHILLIPS PETROLEUM COMPANY by and through its attorneys and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Atoka formation and Morrow formation in its Drag A No. 1 well located in Unit C, Section 18, T23S, R27E, NMPM, South Carlsbad Morrow and South Carlsbad Atoka Pool Eddy County New Mexico and in support thereof would show the Division:

- 1. Applicant is the operator of the Drag A No. 1 Well located in Unit C, Section 18, T23S, R27E, NMPM, Eddy County New Mexico.
- 2. Applicant seeks permission to downhole commingle production from the Atoka perforations (10,688 feet to 10,799 feet) with production from the Morrow perforations (11,550 feet to 11,786 feet) in the well bore of said well.
- That approval of said application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, Applicant prays that its application be set for hearing and after notice and hearing, the application be granted as requested.

Thomas Kellahin

KELLAHIN & KELLAHIN,

P.O. Box 1769 Santa Fe, New Mexico 87501

(505) 982-4285

### STATE OF NEW MODICO ENERGY AND MINEFALS DELINERONT OUL CONSERVATION DEVISION

2/2

IN THE MATTER OF THE BEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

|                                | CASS RO.                                |
|--------------------------------|---|
|                                | Order No. R-6755                        |
| APPLICATION OF PHILLIPS PETRO  | LEUM COMPANY                            |
| FOR DOWNHOLE COMMINGLING,      | EDDY                                    |
| COUNTY, NEW MEXICO.            |   |
|                                |   |
| ORDER OF TH                    | HE DIVISION                             |
| BY THE DIVISION:               |   |
| This cause came on for hea     | aring at 9 a.m. on July 29              |
| 19 81 , at Santa Fe, New Mer   | xico, before Examiner Richard L.        |
| Stamets                        |   |
|                                | f, 19 <u>81</u> , the                   |
|                                | sidered the testimony, the record,      |
| and the recommendations of the | Examiner, and being fully               |
| advised in the premises,       |   |
| FINDS:                         |   |
| (1) That due public notic      | e having been given as required         |
| by law, the Division has juris | diction of this cause and the           |
| subject matter thereof.        |   |
| (2) That the applicant,        | Phillips Petroleum Company , is         |
| the owner and operator of the  | Drag A Well No. 1                       |
| located in Unit C of Secti     | on 18 , Township 23 South               |
| Range 27 East South C          | arlsbad Field, Eddy County, New Mexico. |
| (3) That the applicant se      |   |
| Atoka and                      | Morrow production                       |
|                                | vanđasopilbed well.                     |
|                                |   |

subject well is capable of low carginal production only.

- (5) That from the XAkeka Morrow sole, the subject well is capable of low sarabal production only.
- of additional hydrocarbons from each of the subject pools, it is preventing waste, and will not violate correlative rights.
- (7) That the reservoir characteristics of each of the appear to be subject zones are such that underground waste would not be canned by the proposed commingling provided that the well is not since a for an extended period.

  (8)-(9)

(10)(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Artesia district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, percent of the commingled production should be allocated to the Atoka zone, and percent of the commingled production to the Morrow zone.

#### (ALTERNATE)

(1)(4) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the Artesia district office of the Division and determine an allocation formula for each of the production zones.

- (1) That the applicant, Phillips Petroleum Company , is hereby authorized to commingle Atoka and Morrow preduction within the wellbore of the Drag A Well No. 1 , located in Unit C of Section 18 , Township 23 South , Range 27 East South Carlsbad Field, NMPM, / Eddy County, New Mexico.
- (2) That the applicant shall consult with the Supervisor of the Artesia district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(3) That approximately 90 days to llowing the date of down hole commingling the applicant shall conduct a production test on said well to determine its part of liquide production.

(4) that the applicant shall notice the Protesia district office of the Division of the date and time of such tost in order that it may, be withested at the option of the Division, be witnessed.

(5) That the routes of such test shall be reported to the Director of the Division within 15 days dollow my the date then of.

from such test the Director of the Division may allow or other prestollation of a standing value or other tone separation excepment in said well.

(7) (3) That the operator of the subject well shall immediately notify the Division's Artesia district office any time the well has been shut-in for 7 consecutive days and shall concurrently

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(7) (2) That the operator of the subject well shall immediately notify the Division's Artesia district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(8) 44) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove

designated.