

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 15, 1961

IN THE MATTER OF:)

The hearing called by the Oil Conserva-)
tion Commission on its own motion to)
consider the promulgation of an order) Case 2215
prohibiting the flaring of casinghead)
gas from oil wells in the Cha Cha-)
Gallup and Totah-Gallup Oil Pools, San)
Juan County, New Mexico.)

BEFORE: Mr. A. L. Porter, Chairman
Honorable Edwin L. Mechem
Mr. E. S. (Johnny) Walker

TRANSCRIPT OF HEARING

MR. PORTER: The hearing will come to order, please.

The Commission will next take up Case 2215.

MR. PAYNE: In the matter of the hearing called by the
Oil Conservation Commission on its own motion to consider the
promulgation of an order prohibiting the flaring of casinghead
gas from oil wells in the Cha Cha-Gallup and Totah-Gallup Oil
Pools.

MR. PORTER: San Juan County.

MR. PAYNE: I am glad you called that to our attention.

MR. BUELL: Pan American Petroleum Corporation, Guy
Buell.

MR. DAVIS: Aztec Oil and Gas Company, Quilman B. Davis.



MR. BRATTON: Humble Oil and Refining Company, Howard Bratton.

MR. HOWELL: El Paso Natural Gas Company, Ben Howell, and in association with New Mexico counsel Mr. Montgomery and Mr. Federici.

MR. PLUMB: Tenneco Oil Company. L. B. Plumb.

MR. PAYNE: We have one witness, Mr. Emery Arnold.

MR. PORTER: Will you stand and be sworn, please.

(Witness sworn.)

E. C. ARNOLD

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. PAYNE:

Q Will the witness please state his full name and position?

A E. C. Arnold, Supervisor of the Division 3, Oil Conservation Commission.

Q Are you generally familiar with the matters involved in Case No. 2215?

A Yes, sir.

Q And have you made a study in this connection?

A Yes.



(Whereupon, Commission's Exhibit No. 1 was marked for identification.)

Q Now, referring to what has been designated as Commission's Exhibit No. 1, will you explain to the Commission what that depicts?

A Exhibit No. 1 is an area map showing the Cha Cha-Gallup, Totah-Gallup and Kutz-Gallup Pools. Also shown are all presently producing Gallup oil wells as of February 28, 1961.

Q How many wells are in the Cha Cha Pool and in the Totah?

A Forty-two on this map in the Cha Cha and twenty-three in the Totah.

Q Mr. Arnold, have any dry holes been drilled in either pool?

A No, sir.

Q Is it your opinion there will be other productive wells in one or both of these fields?

A There are presently several rigs operating in both fields and neither pool has been defined, particularly on the Northwest and Southeast ends.

Q What was your purpose in depicting the Kutz Pool on Exhibit 1?

A The Kutz Pool falls within this area, also is a producing pool in the Gallup formation, so we put the Kutz Pool boundary on it. There is actually not enough available gas from



the Kutz Pool at the present time in my opinion to call for a no-flare order. I do think we should watch this area.

Q Are the Cha Cha and Totah Pools dry gas reservoir?

A Yes.

Q Is there reason to assume the gas-oil ratios will rise?

A Yes, they will rise as more oil is processed as the bubble point is reached.

Q What is the present situation in regard to making additional recovery of casing-head gas in these two pools?

A In the Cha Cha, one operator has installed compressor facilities and is selling gas. This amounts to about 1,470,399 cubic feet of gas being sold on the Benson-Montin-Greer Jones lease. The balance of gas in both reservoirs being vented at the present time.

(Whereupon, Commission's Exhibit No. 2 was marked for identification.)

Q In that connection, will you please refer to what has been designated as Exhibit 2 which deals with the Cha Cha-Gallup Pool, and explain the information that you have compiled thereon?

A Exhibit No. 2 is a summary of the gas-oil ratio information on the Cha Cha-Gallup Pool as of February 28, 1961. I have listed all the wells producing in the Cha Cha-Gallup Pool as of that date shown on this exhibit, or gas-oil ratio tests



taken in late January and early February of 1961. We had at that time forty tests available to the wells on this exhibit and didn't have tests available on two.

Q Mr. Arnold, will you give the company totals of available gas and then give the total gas available that you have compiled?

A Yes, sir. First, I might say, the way I have calculated the gas available is by multiplying the top oil allowable times their gas-oil ratio. On penalized wells, I have multiplied oil allowable to these pools, time 2,000, which is the limiting gas-oil ratio. On non-penalized marginal wells I have multiplied the producing capacity times the well's oil-gas ratio. This gives a fairly accurate figure as to the amounts of gas being vented.

Q What did you use to the situation of the two wells that had no tests?

A I average the gas available per well on the forty wells on which we had tests and simply multiplied that figure times the remaining two wells.

Q I see.

A This study shows that the Aztec Oil and Gas Company has available 391,468 cubic feet; Benson-Montin-Greer, 1,470,399 cubic feet; El Paso Natural Gas Products Company,



1,144,884 cubic feet.

Q 844 or --

A 884. Humble Oil & Refining Company, 889,536 cubic feet; Pan American Petroleum Company, 3,068,138 cubic feet, for a pool total, well, actually that is upon the forty wells upon which we have tests, of 6,964,385 cubic feet.

The third page of Exhibit 2 is a summary of this information and it indicates that we have arrived, as an average per well, with your figure multiplied times the two with the remaining wells on which we didn't have tests, we come up with a total gas available of 7,312,605 cubic feet.

Now, the gas, as I said, on Benson in the Jones lease is being presently sold. Actually on this exhibit they were also selling the gas from Jones A, but I received notice yesterday, this is in error. The one well on the Jones A lease produces 59,177 cubic feet, which would change these totals, but not significantly.

At any rate, I have shown Benson 1,470,399, leaving vented gas 5,842,206 cubic feet.

Q In your opinion, is this amount great enough to make the gathering of the gas economical?

A Yes, I believe so.

Q You say these tests, as reflected on Exhibit 2, were all taken in '61?



A Yes, sir, January and February, 1961.

Q In all probability, the gas-oil ratios have not gone up a great deal?

A No, should be fairly accurate.

(Whereupon, Commission's Exhibit No. 3 was marked for identification.)

Q Referring to Exhibit 3, would you go through that and explain to the Commission what you have shown on that?

A Exhibit 3 is a summary of the Totah-Gallup Pool showing twenty-four wells producing. As of February 28 we had available sixteen gas-oil ratio tests. Several of these tests date back as far as September, 1960, so the actual situation may not be as accurate as in the Cha Cha Pool, because the ratios probably were increased on several wells since that time.

Q So, any change in your figure would result in more gas available?

A That's right. Also on this exhibit I have calculated gas available using 94 and 164 barrels top allowable. The reason for this, presently the pool is producing on areas based on 40-acre spacing; 40-acre allowables effective April 1st will be 80 acres, and the allowable will be 164 barrels a day. I have calculated available gas using both these oil allowable figures.

Q Then, for practical purposes, your 80 figure would be the one that would be controlling in this particular case?



A That, yes. On one other, assuming the oil withdrawals on gas-oil tests available were not at high enough rates for a 164 barrel allowable, so, actually, I assumed that each well which was top allowable at 40-acre allowable would also be top allowable with 80-acre allowable.

Q Realizing in some cases that couldn't be true?

A That's right.

Q Now, would you go through the company totals?

A Yes, sir. The Aztec Oil & Gas Company total is on 40-acre spacing, 313,500 cubic feet, on 80-acre, 545,300 cubic feet. Pan American Petroleum Corporation, 162,955 on either 40 or 80-acre allowables. That is because both are marginal wells. Southwest Production Company, 40 acre, 123,140 cubic feet; on 80 acre, 214,840 cubic feet. Tennessee Gas Transmission, 769,307 cubic feet on 40-acre allowable and 1,138,857 on 80-acre allowables. That gives a pool total to 40-acre allowables of 1,368,902 cubic feet and for 80 acre, 2,061,952 cubic feet.

Q Now, page 2 of Exhibit 3 summarizes that information?

A Yes. It also shows that amount of gas again as shown on the first page of Exhibit 3. Those wells with tests only, which was sixteen wells, derived by dividing that figure by sixteen, and I arrived at a figure of 85,556 on 40-acre allowables. Then by multiplying this by an additional seven wells in the pool with no tests, we got an additional gas available figure of



598,892 cubic feet, or a total of gas available figure of 1,967,794 cubic feet for 40-acre allowables. 80-acre allowable average gas per well is 128,872 cubic feet; multiplying this by seven we got 902,104 cubic feet for a pool total on 80 acre of 2,964,056 cubic feet.

Q In regard to these gas-oil ratio tests, were some of them witnessed by Commission Staff members?

A Yes, several of the tests in the Cha Cha and in both pools were witnessed.

Q If the Totah were geographically situated like the Cha Cha is, would there be some question that it would be economically feasible to gather that gas?

A It would make it less difficult because of the fact the Totah and Cha Cha are in close proximity to each other. The gas can be gathered cheaper because you don't need as many gathering process facilities.

Q Would you be able there to look at a total available for both in determining if it is economically feasible to gather gas in this area?

A Yes, sir, I believe so. That total figure for both pools is 8,826,262 cubic feet.

Q Do you know, of your own knowledge, of any plans for going forward at the present time that make additional use of this gas?



A Well, as I said before, Benson-Montin-Greer has installed compressor facilities and are selling gas from the Jones lease in the Cha Cha Pool.

Q What date did that sale start?

A March 1st of this year. I have also heard of at least two other parties that have been studying the pool with the idea of putting in gasoline plants and gathering this gas.

MR. WALKER: That is hearsay?

A I have actually talked to both parties.

Q Is it your testimony that in your opinion it would be economically feasible to gather this gas? What did you have in mind to recommend to the Commission as to the time and so forth?

A I would recommend that the Commission direct all operators in these pools to immediately start the construction of gathering facilities so that that gas might be gathered and sold. I would also recommend that this particular case be continued for sixty days so we can look at the situation at that time to see what progress has been made.

Q If you know at this time, could you tell the Commission after a period of sixty days you would recommend that it be continued again?

A Would you repeat the question, please?

Q This is the only continuance you want, is it not?

A Yes, sir, the problem in this kind of reservoir is



economics or marginal to begin with, and you only aggravate that progress of putting off the time you are going to gather the gas. In six month's time this additional volume, you imagine you are going to vent could be some \$180,000 worth of gas. So from an economic standpoint, the faster we move the better, I would say.

Q The operators would move forward in this sixty-day period?

A Yes, sir, I believe they will.

Q Do you have anything else you would like to explain to the Commission in regards to this case?

A No, sir, I don't believe so.

MR. PAYNE: That concludes the direct examination of this witness.

MR. PORTER: Anyone have any question of Mr. Arnold? The witness may be excused.

(Witness excused.)

MR. PAYNE: At this time I offer in evidence Commission's Exhibits 1 through 3.

MR. BUELL: Guy Buell with Pan American. May it please the Commission, Pan American would like to concur in Mr. Arnold's sixty-day continuance with respect to the Cha Cha Pool. I can tell the Commission the operators have been diligently working several months on a field-wide gathering compression facility. We sincerely believe that within sixty days we can finalize



those plans. With respect to Totah, Pan American operates only two wells there. They are both marginal. Actually candidates for exception from a flare order, if any is ever issued. We are prepared to present testimony to show the economic situation with respect to those wells, if the Commission would like to receive it.

MR. PAYNE: Mr. Buell, I want to see at this time whether there is any further testimony to be used here today by other interested parties and then we will decide whether we want you to go ahead and put your testimony on.

MR. DAVIS: Quilman Davis appearing on behalf of Aztec Oil and Gas Company. Aztec has acreage and production on both the Cha Cha and Totah Pools. I believe we are the major holder in the Totah area. We would like to, Oliver, to change the names of the pools. We do find a different situation in the areas, particularly with respect to the gathering of this casing-head gas, Aztec and other operators in the Totah area have been actively engaged in this sort of operation to find a way to gather and save that gas, and will continue in this line, Mr. Arnold recommended. We certainly concur in his recommendation that this case be postponed or continued for sixty days and I think we will be able to give the Commission some very definite information on the Totah area particularly.

MR. PORTER: Mr. Bratton.

MR. BRATTON: Howard Bratton, Humble Oil and Refining



Company. Humble owns an interest approximating 25 percent in the Cha Cha. We would concur with Mr. Arnold's recommendation to the Commission. Mr. Buell has stated on the matter of the operators, we can report on the progress of that within sixty-day time and show definite progress of fieldwide disposal.

MR. PORTER: Anyone else have a statement to make?
No further questioning to be presented?

MR. PAYNE: The Commission received communication from Benson-Montin-Greer which we would like to have you read into the record.

MR. PORTER: Mr. Payne, in regard to Mr. Buell's statement, did you wish him to proceed with his testimony?

MR. PAYNE: Well, the Commission has decided to continue the case, according to Mr. Arnold's recommendation, for sixty days. The matter will be brought up again at the regular May hearing, at which time we certainly want to urge all the operators in this pool to use every effort to expedite the marketing of this gas, and at that hearing we will expect some definite progress reports as to what has been accomplished in these sixty days. Did you want to enter Mr. Greer's letter for the record?

MR. PORTER: In view of the fact Mr. Arnold testified it is economically feasible to gather this gas, and in view, further, of the fact that's the essence of Benson-Montin and



Greer's statement, perhaps it should be read in the record.

"Gentlemen: In the event Benson-Montin-Greer Drilling Corp. is unable to have a representative present at the subject hearing, we are sending you with this letter information concerning operations of Benson-Montin-Greer Drilling Corp., which we request be filed with other statements relating to this case. We understand the information cannot be introduced as evidence, but that it might properly be accepted by the Commission along with other statements.

Benson-Montin-Greer Drilling Corp. operates seven wells in the Cha Cha-Gallup Field producing from the Gallup Formation. Six of these wells are on the Jones Lease, which covers the east half and the northwest quarter of Section 17, Township 28 North, Range 13 West, and one is on the Jones "A" Lease, which covers the southwest quarter of Section 17, Township 28 North, Range 13 West. The Jones "A" No. 1, SE/4 SW/4 Section 17, is a non-commercial well, currently producing about 15 barrels per day. We believe it economically not feasible to attempt to make useful disposition of the gas from this well, and in the event the Commission establishes a ruling whereby exceptions can be made for such wells, we will at a later date request such exception from a no-flare gas order.

The remaining six wells which we operate on the Jones Lease produce in a common tank battery, and the gas produced in connection

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with the oil is compressed at the tank battery by our own compressors and delivered through our own pipe line, approximately one half mile, and is delivered to El Paso Natural Gas Company at its pipe line connection in the SE/4 SE/4 of Section 17. Gas compression and sales commenced February 28, 1961, and at this time we are flaring no gas from the six wells on the Jones Lease.

Attached to this letter are three exhibits describing the following items:

1. Price paid for the casinghead gas sold.

2. Compressor installation.

3. Economics of gathering and selling casinghead gas from Benson-Montin-Greer Drilling Corp. Jones Lease." Signed Albert R. Greer.

"GAS SALE PRICE, BENSON-MONTIN-GREER DRILLING CORP., JONES LEASE, CHA CHA-GALLUP POOL, SAN JUAN COUNTY.

Benson-Montin-Greer Drilling Corp. is currently compressing gas produced from Gallup Formation oil wells under its Jones Lease, Section 17, Twp. 28N, Rge. 13W, pursuant to Casinghead Gas Contract originally entered into with El Paso Natural Gas Company dated June 14, 1960, for a daily quantity of gas of 1 million cubic feet per day, which Contract was supplemented by Agreement dated November 30, 1960, to increase the volume to 2 million cubic feet per day.

The price for gas in this contract is 11¢ per thousand



plus a share of the value of the liquids, for gas delivered at 250# per square inch gauge pressure, which is approximately the pressure of El Paso's gathering system in this area at this time. The contract contemplates that gathering pressures will later on be increased to 500#, at which time the price for the gas will be increased 1¢ per thousand for the additional delivery pressure. The contract carries an escalation provision of 1¢ increase for each five year period." Signed Albert R. Greer.

"COMPRESSOR DATA
BENSON-MONTIN-GREER DRILLING CORP. JONES LEASE
CHA CHA-GALLUP POOL
SAN JUAN COUNTY

Benson-Montin-Greer Drilling Corp. has currently installed on its Jones Lease two compressors, each identified as follows:

Oil Well Model GBLU-150A Belt-Driven Natural Gas Compressor Unit, consisting of the following:

Chicago Pneumatic Tool Company 7" x 4½" x 13" tandem double-acting horizontal water-cooled gas compressor for two-stage operation, powered by Waukesha Model 6-NKRB 6-cylinder 7" bore x 8½" stroke gas engine.

Estimated performance data is as follows, for a discharge of 500 pounds per square inch gauge:

<u>Inlet Pressure</u> <u>psig</u>	<u>Cubic Feet</u> <u>per 24 hours</u> <u>each compressor</u>	<u>Cubic Feet</u> <u>per 24 hours</u> <u>Two compressors</u>
20#	395,000	790,000
40#	640,000	1,280,000
60#	925,000	1,850,000

Signed Albert R. Greer.



"ECONOMICS OF GATHERING, COMPRESSING AND SELLING
CASINGHEAD GAS FROM
BENSON-MONTIN-GREER DRILLING CORP. JONES LEASE
E/2 & NW/4 SECTION 17, TWP. 28N. RGE. 13W
CHA CHA-GALLUP POOL
SAN JUAN COUNTY
(AN INDIVIDUAL SIX-WELL LEASE SYSTEM)

In Case No. 2069 before the New Mexico Oil Conservation Commission September 14th, 1960, I testified that in my opinion the casinghead gas produced in connection with the oil from the Gallup Formation under Benson-Montin-Greer Drilling Corp. Jones Lease would have negligible economic value, because the cost of gathering, compressing and marketing would approximate the total value of the gas. Since that date there have been no developments which would tend to change this opinion. I still estimate, on 40-acre spacing, an average recovery of 60,000 barrels per well primary production, which represents approximately 15% of the oil in place. I also estimate that there will be produced with this 60,000 barrels approximately 200 million cubic feet of gas per well. This represents an income, after royalties and taxes but before operating expense, of about \$18,000 per well.

We do not have all of our costs assembled for our compressor installation and high pressure pipe line system. However, it appears that our investment to date for these items will approximate \$12,000 per well. With this installation we can sell approximately all of the gas we will be allowed to produce with an oil



allowable of 175 barrels per day and a gas-oil ratio limit of 2,000 cubic feet per barrel, and a separator pressure of 60# per square inch. We are currently operating with a separator pressure of 50# and compressing approximately 1,600,000 cubic feet of gas per day, with the present oil allowable of 863 barrels per day for the lease. As the wells decline, the investment of another \$6,000 per well, or a total investment cost equal to the anticipated value of the gas, will be required in order to reduce separator pressure to approximately 30#. Further reduction in separator pressure can then only be accomplished by restricting production to lower rates, or by installation of compressor equipment far in excess of the value of gas to be recovered. It is now our plan that when the stage in the producing life of our wells is reached at which they will not produce against separator pressures of 30#, to restrict total production from the lease, in order to accomplish reduction of separator pressure." Signed by Albert R. Greer.

MR. PORTER: Anyone else?

MR. HOWELL: If the Commission please, Ben Howell.

I would like to make a brief statement. We have no testimony to offer at this time in this hearing. We are making studies relating to the economics of this gas and we are in the process of negotiating contracts, as the records show, one which has at this time been entered with the Benson-Montin-Greer group,



and we have made firm offers of contracts to other producers. However, I think it should be pointed out that the existing gathering and lateral facilities which we have in the area are loaded to almost capacity at the present time. It will probably be necessary, in order for us to take this gas, to construct some additional facilities to handle the gas.

Now, we have not progressed to the point we are able to make any announcement or remarks as to the length of time in which such facilities will be connected. We will be glad to inform the Commission as soon as the other contracts are able to be negotiated.

MR. PORTER: Anyone else have any comments? The Commission recognizes in new pooling and rapidly ^{developing} depleting pools ^{that sometimes} ~~at the same time~~ it is necessary to ^{have} ~~acquire~~ a certain amount of gas until facilities can be built to handle this gas. But certainly for the past several years the Commission has been making every effort to limit it as much as possible to cut it to the bare minimum. Certainly I appreciate your effort to do something about this and give us a report at the May hearing. We will continue the case until the regular May hearing. I would like to remind you at this time the April hearing will be held in Hobbs. At that time we expect to have on the docket several cases concerning administrative approval.

The next case on the docket is Case 2216.

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STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

I, PAT GOMIA, Notary Public, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal
this 25 day of April, 1961.

Leticia L. Garcia
Notary Public

My commission expires:

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