BEFORE THE
NEW MEXICO OIL CONSERVATION EXAMINER
FARMINGTON, NEW MEXICO
JUNE 25, 1957

CASE NO. 1269

T R A N S C R I P T O F P R O C E E D I N G S

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

NEW MEXICO OIL CONSERVATION COMMISSION

Farmington City Hall

Farmington, NEW MEXICO

REGISTER

HEARING DATE June 25, 1957 TIME: 10:00 a.m.

NAME:	REPRESENTING:	LOCATION:
[illegible]	NMOCC	Aztec
W. B. SMITH	PHILLIPS PETR. Co	FARMINGTON
L. D. Galloway	El Paso Natural Gas Co	Farmington
E. C. Arnold	NMOCC	Aztec
Nancy Loyal	N. M. Statehouse Reporting	Service, Santa Fe
F. Norman Woodruff	EL PASO NATURAL GAS Co	EL PASO
D. H. Ramey	El Paso Nat. Gas Co	EL PASO
T. R. Daniel	" " " "	" "
Warren W. Rutz	Magnolia Petroleum Co.	Farmington
L. A. Dugan	Pacific Northwest Pipeline Co.	Farmington
W. R. Jones	Northwest Prod. Corp.	Farmington
R. M. Bauer	[illegible] American Petroleum Co.	Farmington
GUY BUELL	✓ ✓ ✓ ✓	FORT WORTH
C. K. Kelley	" " " "	Roswell
[illegible]	[illegible]	[illegible]
J. W. Buttrick	El Paso Nat. Gas Co	Farmington
Bill Gonzales	El Paso Nat Gas Co	"

ILLEGIBLE

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REGISTER

HEARING DATE June 25, 1957 TIME: 10:00 a.m.

NAME:	REPRESENTING:	LOCATION:
J. E. Kreger	Delhi-Taylor Oil Corp.	Farmington, New Mexico
~~Jo~~ Johnston	Northwest Production	Albuquerque, NM
Joel Burr	NM Corp. Comm.	Santa Fe, N. M.
Wm J. Cooley	NMOCC	" " "

ILLEGIBLE

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
FARMINGTON, NEW MEXICO
JUNE 25, 1957

IN THE MATTER OF:

CASE NO. 1269: Application of Northwest Production Corporation for authority to commingle liquid hydrocarbons produced from the Pictured Cliffs, Mesaverde, Gallup, and Graneros-Dakota formations into central tank batteries located on certain leases in the Blanco-Mesaverde, South Blanco-Pictured Cliffs, Tapacito-Pictured Cliffs, and certain undesignated gas pools in Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order granting authority to commingle the liquid hydrocarbons production from the Pictured Cliffs, Mesaverde, Gallup, and Graneros-Dakota formations into central tank batteries located on certain of the applicant's leases in Township 25 North, Range 4 West; Township 26 North, Range 5 West, and Township 27 North, Range 2 West, Rio Arriba County, New Mexico.

BEFORE:
Warren W. Mankin, Examiner

T R A N S C R I P T O F P R O C E E D I N G S

MR. MANKIN: The hearing will come to order. First case on the docket, Case No. 1269

MR. COOLEY: 1269, Application of Northwest Production Corporation for authority to commingle liquid hydrocarbons produced from the Pictured Cliffs, Mesaverde, Gallup, and Graneros-Dakota formations into central tank batteries located on certain leases in

the Blanco-Mesaverde, South Blanco-Pictured Cliffs, Tapacito-Pictured Cliffs and certain undesignated gas pools in Rio Arriba County, New Mexico.

MR. JOHNSTON: I am W. R. Johnston, Manager of Production Operations for Northwest Production Corporation.

MR. COOLEY: Are you the only witness in this case, Mr. Johnston?

MR. JOHNSTON: Yes, sir.

(Witness sworn.)

W. R. JOHNSTON

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

DIRECT EXAMINATION

BY MR. COOLEY:

Q I believe you have previously been qualified as an expert engineering witness, have you not?

A That's right. We propose to commingle liquid hydrocarbon production on our Jicarilla Leases, which we term our "C" Lease, "E" Lease, "N" Lease, "NE" Lease, and "W" Lease. We desire to do this for several reasons. One reason is the conservation of the liquids, and the second is the expense involved with gathering and providing facilities to keep all liquids separate. We have determined that on most of the leases all formations will produce some liquid hydrocarbons. As an average, the Pictured Cliffs will produce around two barrels per million cubic feet produced, the Mesa-

verde will average ten barrels per million cubic feet produced, and the Dakota formation twenty barrels per million cubic feet produced. The one well we have in the Gallup formation indicates it might produce between five and ten barrels per million cubic feet of gas produced. On many leases we have three zones, on one location, that is the Pictured Cliffs, Mesaverde and Dakota. It seems uneconomical, and is not feasible to provide three separate tanks on that lease to keep the hydrocarbons separated. I would like to introduce one exhibit which is a location plat.

Q Mr. Johnston, do you wish to designate it as Exhibit 1?

A I would like to designate it as Exhibit 1, which is a location plat of our North Block Lease. At the present time, we have fourteen horizons producing on this lease, and when it is fully developed there will be twenty, providing that we hold the 320 acre spacing in the Pictured Cliffs. In the event that Tapacito rules went to 160, there would be twenty-four producing horizons on this particular lease. This lease is in very rough terrain and is often impassable in wet or snowy weather. Our plans for this lease, if our application is approved, is to locate one central battery on the leases, at the lease elevations we refer to in the plat, which would be in the southwest quarter of Section 8, which you will note by the elevations is approximately 6800 feet, and the rest of the wells are above seven thousand feet, and are upon a very high ridge. I would like to point out the location in the northeast of Section 6, where we do have all three zones completed. The Pictured Cliffs on

that well will make about two barrels, barrel and a half to two barrels to the million. The Mesaverde something like eight barrels to the million, and the Dakota about twenty to twenty-five. If we provide a separate tank for the Pictured Cliffs, for instance, it would take possibly a hundred days production to have enough oil to send a truck up there and haul oil out; even if we could get up there. By combining that production we can put it into a central battery in Section 8, and be able to get in in all kinds of weather. We have improved the road into Section 8 and we feel it will be satisfactory for travel, say ninety-five percent, during our drilling in inclement weather. I would like to point out that we do intend, or will meter our amounts from the east zone separately, and report it, so we intend to put a small test tank on each location so that we will be able to make whatever periodic test the Commission so desires. We, naturally, have been doing that anyway, because we are very interested in what our liquid hydrocarbon production is. Our other leases are not as well developed, and all of them are not so situated that we can put small batteries there. Periodic gas-liquid ratio tests will be taken to determine the liquid production attributable to each formation of each well producing into common storage, and the gas produced from each formation in each well will be metered and reported separately. The royalty in all formations for the above leases is owned by the Jicarilla Indians. I believe that is all, Mr. Examiner.

MR. MANKIN: Do you have any further exhibits?

A No, sir.

MR. COOLEY: Was this exhibit prepared by you or under your supervision?

A Yes, sir.

BY MR. MANKIN:

Q Mr. Johnston, in your testimony, up to this present time, you referred to the Dakota as a separate zone. Is it not true, in many cases, particularly with regard to Exhibit 1, that the Graneros-Dakota are opened together-- A That's right.

Q --and do commingle? A That's right.

Q So, really, the proper designation instead of being Dakota, is undesignated for an oil field as applied in this particular area? A Right.

Q You likewise previously mentioned as to the contents of the liquids that the Dakota was approximately twenty barrels per million. Is that also true of where the Graneros-Dakota is open, it would have twenty barrels per million?

A Our experience so far, we have one producing well, with the Graneros-Dakota together, and three with the Dakota alone, and they will average almost the same as I referred to. The two Dakota Wells in our so-called West Block, the two triple completions, both of them are producing from the Dakota at the rate of about sixteen to eighteen barrels per million cubic feet produced. The Graneros-Dakota Well, which is in Section 6 of the Exhibit, has been as high as thirty barrels to the million, but several of our levels flow

about twenty to twenty-two. All are practically, apparently, essentially the same.

Q Then, your thinking is that the Graneros does not add much to the liquid content, is that correct?

A Yes, I think that is right.

Q It would be very small? A Yes.

Q To pin point, since not every one has that particular exhibit, you were speaking of Section 6 where the Graneros-Dakota was opened, and where the development was fairly good, you were speaking then of Township 26 North, Range 4 West, in Rio Arriba County? A That is correct.

BY MR. COOLEY:

Q Mr. Johnston, would you pin point the exact location of the proposed central tank battery in the southwest quarter of Section 8, on Exhibit 1?

A The proposed location would be two hundred feet due west of our 1-8 Well.

Q What would that be from the south line and west line?

A As I recall, the location is 1190 from the south 1190 from the west, which would put it 1190 from the west line.

Q And 1190 from the west line of Section 8, Township 26 North, Range 4 West, Rio Arriba County? A Right.

Q This location was chosen because the access by road is better at this point then as is shown on the map?

A Yes, I refer to that again. The elevation shown on the

plat, there is a maximum difference of over four hundred feet between the elevations. Practically, every one here with the Commission is very familiar with that terrain. On one occasion last winter, to test one of our wells, it required over three weeks just to get two men over on top of that mesa. You can get to it in a jeep occasionally, but as far as getting the trucks up there to haul oil it is exceedingly difficult and expensive, and there would be a good possibility anytime you have tanks running over and losing oil simply because you could not get to haul the oil itself.

Q What is the estimated capacity of the tank batteries?

A Initial batteries, we propose to use would be four hundred and twenty barrels, and then we could build our batteries so that we could enlarge it to any required extent, depending upon how much liquid production we do have, and how often we desire to empty the tanks.

Q Could you estimate how long it would take with all the wells shown on the plat designated as Exhibit 1, producing properly, to fill them with four hundred and twenty barrels--

A (Interrupting) Yes.

Q (Continuing) --the tank batteries?

BY MR. MANKIN:

Q I believe the wells would reflect that, whatever would be the normal allowable in the pools where prorated?

A Right. It would take, now, with all wells producing properly, around seven days.

BY MR. COOLEY:

Q You think the seven days is sufficient to allow for adverse weather conditions?

A In that area, yes; however, if we find it is not, we definitely intend to extend our tank battery.

Q Would you outline more specifically how you intend to calculate the liquid production from each horizon on each well?

A Right. We intend to set a small tank on each location and then make whatever tests are required by the Commission by allowing one zone to flow into that tank separately while the other zones are flowing into the common lines or common batteries, or if necessary, to hook others that are not shut-in. The remaining zones to use that tank for, say, a twenty-four hour test, like in our Magnolia test, once a month. We feel we want the information and we know the Commission does, as to how much each zone produces.

Q If I understand you correctly, you intend to open these wells at least once a month when you test them?

A It would be right after we determined what the well will do. We have been doing it, as of right now, separately, and we have been testing them practically weekly, every time, gauge the tanks and calculate what our fluid gas-ratio is, but we feel it is going to be stabilized for a period of, say, six months, and that we could then test every three to six months, which would be adequate.

Q These test programs that you have just outlined will give you a reasonably accurate production of liquids from each

horizon?

A Definitely.

Q Would you care to estimate the savings and expense that would result from the approval of this application as against establishing tank batteries, as required by the present rules and regulations?

A Yes. On this particular lease alone, which I am citing as an example, because, it is the only property we have reasonably developed at this time. In tank cost, the company will save in the neighborhood of fifteen thousand dollars on this particular lease. In savings of liquid hydrocarbons, I feel that we are saving, we will be saving twenty percent of the hydrocarbons, liquid hydrocarbons produced, due to the fact that like it be true in many cases, we would not feel that economical to save the Pictured Cliffs fluids unless we commingle them, and, therefore, there could be some waste involved if we had to set up a separate tank on each lease for each zone. I'd like to add to this testimony, we have determined, and are very pleased, of course, the Pictured Cliffs will produce liquid hydrocarbons in this area, which has not been true in all of the areas we operate in, but it produces a sixty-five gravity light oil, that we are very, very pleased to have, and we hope we will be able to get some--

Q In your opinion then, if this application is approved, it will result in prevention of loss?

A Yes, sir, that is my opinion, right.

Q The testimony, generally, that you have given concerning the lease blocks shown on Exhibit 1 apply equally as well as to the other seven leases?

A Generally, yes. I'll cite an example. Our West Block Lease, at the present time, is in twenty-six, five, Section 5, 6, 7, and 8, has two completions involving six zones. That particular lease is separated, the wells are separated by a ridge approximately three hundred feet higherin elevation than the locations of the wells, and on that lease, we definitely are going to have a battery on each side of that high ridge. Before one battery would serve two sections, rather than four, but essentially, the savings and the gatherings of hydrocarbons are the same; for instance, right now, those are very small Pictured Cliff Wells, and we are not gathering Pictured Cliff liquids. I know there is a little liquid there, but we have not, as yet, set a separate tank for them. We are gathering, in other words, Mesaverde and Dakota liquids in separate tanks, but it is essentially the same problem other than it will take two batteries to run that lease rather than one.

BY MR. COOLEY:

Q Now, that ridge runs east and west or south and north?

A That ridge runs almost east and west.

Q And you have a tank battery--

A (Interrupting) At the present time, we have tank batteries on each lease, on each well.

Q On each well? A Right.

Q However, your application proposes to install one central tank battery to handle production from Sections 5 and 6, another from Sections 7 and 8, is that correct?

A Terrainwise suiting that is what would be done.

Q Now, please proceed to the "C" Lease in Township 26 North, Range 4 West, comprising Sections 29, 30, 31, and 32.

A At the present time, we have in those four Sections only one producing well, C-2-29, which is producing from the Mesaverde and Dakota. On that lease, fully developed, I believe we can handle it with one tank battery. At the present time, we have two tanks set on the C-2-29 Lease, producing into separate tanks. We have a Pictured Cliffs Well in Section 29, which at the present time is not connected, but it should make hydrocarbons, and it's on the same lease also. We again come back to the same problem of three liquid producing horizons. On one occasion we have not selected a site for a central battery on that particular lease. We will strictly have to do that on terrain, and how many wells we can get into one--

Q (Interrupting) You do reserve authority to use a central tank battery to handle production in all wells drilled in all four sections?

A That is right.

Q For similar reasons?

A Exactly the same reasons, again terrain and cost and conservation.

Q The same testimony applies to the "C" Lease in Township 25 North, Range 4 West and comprising Sections 5, 6, 7, and 8?

A That is correct, other than we do not know the exact capabilities of the Graneros-Dakota formation in that particular area. We feel there is a good possibility of the Graneros-Dakota and also Gallup, since there is a chance of it in there, and it is relatively close to the Skelly's Lease. The Graneros Well is a little more to the south and west, and we feel that we have a reasonably good chance to have the same liquid, and therefore, we request that same authority.

Q In the event that you do have liquid hydrocarbons, producing sufficient quantity from the Graneros-Dakota and Gallup, swinging to the Pictured Cliffs, you request authority to--

A (Interrupting) That is right. Again, on that particular lease, we have a lease separated by a very high mesa, and it's very likely it would take two batteries rather than one.

Q How does the mesa run?

A Relatively north and south.

Q You have a battery in the production from 5, 6, 7, and 8?

A Yes.

Q You have three "E" Leases comprising twelve sections in Township 26, Range 3 West, Sections 3, 4, 9, 10, 15, 16, 21, 22, 27, 28, 33, 34?

A Correct.

Q What do you propose to do with the liquid as far as production from these three "E" Leases--

A (Interrupting) If possible, we propose one battery per lease. The terrain is not too difficult in that area. If we do not

run into difficulties, we intend having one battery per lease; however, if we find that we cannot produce it satisfactorily into one battery, we would like authority to have the right to put one or more batteries per lease, if necessary. Again, we come back to what is the primary thing, we really need to commingle rather than have one battery per lease. In this particular area, the Pictured Cliffs produced about a barrel and a half per million on each. We find we have only one battery on one well. We would like to have one tank for both zones and then, to test it, shut-in one zone and test the other zones.

Q To clarify this a little more, the 3 leases covering the "E" Leases you have just mentioned, Contract No. 115, 116, and 117, north and south, they are considered three separate basic leases?

A That is correct.

Q No production would be carried off the--

A (Interrupting) No, sir, I might cite this: Our present hookup now, we only have two batteries set; but, we have in Section 33, we have one tank, 210 barrel tank set on the Pictured Cliff Well. Our well termed "E-133" at the rate it's producing, it will empty about next June or July, but it's quite an investment to gather a barrel and a half, that is what we are getting out of the well, and we'd like to tie that in a line to our batteries near the two-33[illegible] which is in the northeast of there, where we do have a two tank setup. Now, in the Pictured Cliffs formations--

Q (Interrupting) That is the same basic lease?

A That's right, that Section 33, in that particular lease, and we would like to throw in Section 34 into one battery with the two leases.

Q Which is also on the same lease? A Yes, sir.

Q You understand that these leases call for an exception--

A (Interrupting) Yes.

Q (Continuing) --to store liquid hydrocarbons from the same zone? A Right.

Q Provided it's stored and measured on the same basic lease?

A I realized that, that is why--

Q (Interrupting) Let's proceed next to your Jicarilla Northeast Lease, in Township 27, Range 2 West, comprising Sections 9, 10, 15, and 16.

A At the present time, we have only one well upon that lease. That is a Gallup Well in Section 16. We feel that the Mesaverde and Pictured Cliffs are productive at least in parts of that lease, and that again, we will have exactly the same problem of desiring to commingle liquid hydrocarbons after determining the proper fluid ratio.

Q And again, the terrain factor and the factor of conserving liquid hydrocarbons--

A (Interrupting) That is correct.

Q One final question, Mr. Johnston. Will there be more than eight wells completed on any of the well leases named in the

application?

A More than eight zones?

Q More than eight wells?

A Wells. Yes, if you are determining a four section lease.

Q Four section lease?

A Four section lease, yes, in our North Block, there will be three per section, or twelve.

Q Twelve wells? A Right.

Q And you propose to have them in one separate tank battery?

A That is correct, that will be out of twenty zones.

Q You realize that the Commission has a restriction of no more than eight wells into common tank batteries appearing on the same basic lease? A Sir, I do not.

Q I will read from the record, 309, New Mexico Conservation Oil Rules and Regulations. "Central Tank Batteries. Oil shall not be transported from a lease until it has been received and measured in tanks located on the lease. At the option of the operator, common tankage may be used to receive the production from as many as 8 units of the same basic lease, provided adequate tankage and other equipment is installed so that the production from each well can be accurately determined at reasonable intervals."

A That lease you have read, what is the size of the lease?

Q The same basic lease.

A Whether one section or--

Q (Interrupting) Or one thousand acres.

A Yes. We would have the necessity of an exception to that rule.

Q I will take that in your application--

A (Interrupting) I would like--

Q (Continuing) Do you request an exception to this rule?

A Yes, we so request.

Q The reason given, being the common and the tank batteries are--

A (Interrupting) For economy and conservation, to save as much liquid hydrocarbons as is possible. In fact, if approved, we will be able to recover the maximum amount of hydrocarbons that is feasible, or is possible from these leases.

Q This applies to all eight leases named in the application?

A To our knowledge, that is correct.

Q And on each of these leases you contemplate eventually developing more than 8 wells?

A There is definitely that possibility, if the zones are there, we are going to, yes. It's entirely possible to, if you didn't have dual completions, it's entirely possible to have five wells per section or as many as twelve wells.

Q I am speaking in terms of wells, that would be a triple completion, a single dual completion--

A (Interrupting) Right.

Q (Continuing) But it's still one well?

A Well, we term a triple as three zones, but from horizons,

again, I will go back to this North Block, we have 20 producing horizons from this four section lease, providing that we have 320 acre spacing in the Pictured Cliff. Tapacito would be on 160, and we feel definitely it would be the producing horizon; that would involve 12 on 320 for the Pictured Cliffs and 16--you are talking about holes?

Q Holes.

A 16 wells; if it went to 160, officially.

MR. COOLEY: I believe that is all, Mr. Johnston, thank you.

BY MR. MANKIN:

Q Mr. Johnston, we have been referring here to the Dakota formation, and the Graneros-Dakota, is it not ture that in your West lease, the "W" Lease, that the only two triple completions, gas completions in New Mexico are found on these two leases, or the Jicarilla "W" Lease?

A That is correct, to my knowledge.

Q And in those two particular wells the Dakota alone is open as one of the three zones in the well--

A (Interrupting) Yes.

Q Whereas in all the balance of the seven leases, up to the present time, you have attempted completion, or has it already been completed, the Graneros-Dakota, together?

A That is correct.

Q I want to clarify that because we have been speaking of

it many times as the Dakota, when actually, we have been talking about the Graneros-Dakota, in other than the West Lease?

A That is correct, and I feel that if we ever had an occasion to work on those West Wells, we would look into the--

Q (Interrupting) I'd like to ask one question here that is somewhat related to this. Is the Dakota, were it not to stand alone, not commercial in this area, other than the West Section, if you did not open the Graneros with it?

A It would be, certainly, a border line case because in some occasions the Dakota Well in the West Lease on our "W"1-7 Well, the Dakota would be, it produces 160,000 ~~barrels~~ Mcf a day, but it might take as long as twenty years to pay for the well. You actually need every bit of zone you can get.

MR. MANKIN: Do you have anything further, Mr. Johnston?

A No, sir.

MR. MANKIN: Mr. Utz.

BY MR. UTZ:

Q Mr. Johnston, is the royalty and working interest common in each of these eight leases?

A That is correct.

Q You have located the tank batteries on your "N" Lease. Do you know what the location of your batteries is going to be on the other seven leases?

A Not at this time.

Q Would you furnish that information to the Commission at

such time as you determine that? A Yes.

Q Do you have any plans as to how you are going to report the production from each of these dual and triple completions as to designation?

A We will determine it from our periodic tests, the gas liquid-ratio of each zone, then we will take our total production and allocate it back percentage wise on that basis for each month and know by a monthly test change, that will change it monthly.

Q Do you know of a designation code so that you can distinguish the formations from which this production is recorded; in other words, do you follow on Well No. "W" a P., C., or M., V., or-- A (Interrupting) Yes.

Q (Continuing) In all cases? A Yes.

Q We will know which pools you are reporting from?

A Right.

Q You stated, I believe, that you were going to set up a plan, to set a test tank at each location? A That is correct.

Q Will this tank be large enough in all cases for a twenty-four hour test?

A Yes, sir, any well we have now; roughly, 50 barrel tanks, and we have no well that can produce--

Q (Interrupting) And each formation will be produced separately during this test? A That is correct.

Q And the liquid and gas will be separately?

A That is correct.

MR. UTZ: That is all I have.

MR. MANKIN: Are there any further questions of the witness in this case? Do you wish to enter Exhibit 1 in evidence in this case, Mr. Johnston?

A Yes, sir.

MR. MANKIN: Are there objections to Exhibit 1 in this case? If not, it will be so entered. If there are no further questions of the witness, the witness may be excused. Are there any statements or anything further to hear in this case? If not, we will take the case under advisement. Thank you.

(Witness excused.)

* * *

R E P O R T E R ' S C E R T I F I C A T E

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ROBERT V. MAES, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission Examiner was reported by me in stenotype and reduced to typewritten transcript, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS My Hand and Seal, this, the 13th day of July, 1957, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Robert V. Maes
Notary Public

My Commission Expires:
February 7, 1961

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1269, heard by me on June 25, 1957.

Examiner
New Mexico Oil Conservation Commission