

NEW MEXICO OIL CONSERVATION COMMISSION  
MABRY HALL - STATE CAPITOL  
SANTA FE, NEW MEXICO

REGISTER

HEARING DATE September 5, 1956 TIME: 9:00 a.m.

NAME:	REPRESENTING:	LOCATION
F. W. Nantker	Shell Oil Co.	1901 Main Durango, Colo.
J. E. Mohr	✓ ✓ ✓	33 Richards St Salt Lake City, Utah
D. F. Collins	✓ ✓ ✓	1901 Main Durango, Colo.
Jason Kellahi	attorney	Santa Fe, New Mexico
John P. Kiedemer	Empire States Dist.	Albuquerque
R. S. Durham	Pacific Northwest Pipeline Corporation	Salt Lake City, Utah
Elmer A. Mc	NMOC	Santa Fe
Joe Sander	O.C.	

BEFORE THE  
**Oil Conservation Commission**  
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1085

TRANSCRIPT OF PROCEEDINGS

DEARNLEY-MEIER AND ASSOCIATES  
COURT REPORTERS  
605 SIMMS BUILDING  
TELEPHONE 3-6691  
ALBUQUERQUE, NEW MEXICO

BEFORE THE  
OIL CONSERVATION COMMISSION  
STATE OF NEW MEXICO  
Santa Fe, New Mexico  
September 5, 1956

REGISTER

Name	Representing	Address
F. W. Nautker	Shell Oil Company	Durango, Colorado
J. E. Mohr	Shell Oil Company	Salt Lake City, Utah
D. F. Collins	Shell Oil Company	Durango, Colorado
Jason Kellahin	Attorney	Santa Fe, New Mex.
John P. Wiedemer	Empire States Drlg.	Albuquerque, N.M.
R. S. Durham	Pacific N.W. Pipeline	Salt Lake City, Utah
Elvis A. Utz	N.M.O.C.C.	Santa Fe, New Mex.
J. W. Finley	O.C.C.	Santa Fe, New Mex.

IN THE MATTER OF: (Readvertisement)

Application of Shell Oil Company for an order )  
amending the Carson Unit Agreement as estab- )  
lished by Commission Order R-828. Applicant, )  
in the above-styled cause, seeks an order )  
amending the Carson Unit Agreement in the )  
following particulars: )

- (a) To eliminate from the Unit Area All of )  
Sections 3, 4, 9, 10, 15, 16, 21, 22, )  
27, 28, 33 and 34 of Township 25 North, )  
Range 12 West, San Juan County, New )  
Mexico. )
- (b) To reduce the number of wells to be )  
drilled under the agreement from five to )  
four. )
- (c) To consider any well commenced subse- )  
quent to July 15, 1956, within the )  
amended area to have been drilled in ac- )  
cordance with the requirements of the )  
Unit Agreement and as fulfilling part of )  
the drilling requirements. )

Case No.  
1085

BEFORE: Mr. Warren Mankin

TRANSCRIPT OF HEARING

MR. MANKIN: The hearing will come to order. The first case we have today is Case 1085.

MR. COOLEY: Application of Shell Oil Company for an order amending the Carson Unit Agreement as established by Commission Order R-828.

MR. SETH: This application is presented on behalf of Shell. By reason of certain developments which took place following the hearing on the Carson Unit before this Commission in Case 1085, we would like by means of the witnesses, to show the changes which have taken place and to show the reason why the amended application is made.

Shell Oil Company has likewise filed with the Commissioner of Public Lands a similar application together with the supporting data. We have two witnesses, Mr. Nantker and Mr. Collins.

MR. MANKIN: Would you stand and be sworn, please?

F R E D E R I C K   N A N T K E R

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. SETH:

Q Would you state your name, please, for the record?

A Frederick Nantker.

Q By whom are you employed?                    A By the Shell Oil Company.

Q What position?

A As District Land Agent in Durango, Colorado.

Q In your capacity as District Land Agent, are you familiar

generally with the original Carson Unit Agreement as submitted?

A Yes, sir.

Q And with the amendments that are now proposed?

A Yes, sir.

Q Would you state, please, to the Commission whether or not the proposed Carson Unit was submitted to the United States Geological Survey and the results of such submission?

A Yes, sir. The proposed Carson Unit was submitted to the United States Geological Survey following the hearing on, I think that was on June 21. Have we supplied a copy of the letter to the Commission?

A No. Did you receive a letter from the Acting Director in connection with the unit?

A Yes, sir.

(Marked Shell's Exhibit No. 6,  
for identification.)

Q I hand you what has been marked for identification as Shell's Exhibit 6. Will you state what this is?

A In substance this is a letter from the Acting Director of the United States Geological Survey stating they would approve the unit agreement if we eliminated the westerly twelve sections, namely the two tiers of sections on the west of the original unit agreement as submitted. In this letter they stated their reasons.

Q Which are briefly what?

A Which are the rapidity of development to the west of the new proposed unit area, and the fact that they felt that other working interests should be committed to the unit agreement.

Q Do you have any additional copies of that letter?

A I have an additional copy. Do you wish any further?

Q Do you have any more? A Yes.

Q Mr. Nanther, as a result of the receipt of this letter, and as a result of the conference which preceeded this, did Shell then make, prepare amendments to the unit agreement?

A Yes, sir.

Q Excluding the acreage as so testified by the United States Geological Survey?

A We prepared two amendments to the unit agreement, one entitled "Consent of working interest owners to amendment of and joinder in the working agreement" and "Consent of other parties to amendment of and joinder in unit agreement".

Q Have you prepared new plats indicating the new proposed unit area?

A Yes, sir.

(Marked Shell's Exhibit No. 7,  
for identification.)

Q I hand you what has been marked Shell's Exhibit 7. State what that is.

A Exhibit 7 constitutes the new unit area as revised pursuant to the request of the United States Geological Survey.

Q Does this indicate the ownership?

A Yes, sir.

Q Within the unit area?

A It indicates the ownership within the unit area.

Q Does it also indicate the existing development within the unit area?

A Yes, sir.

Q Are you prepared to testify as to the proposed location of unit wells within the area?

A Yes.

Q Would you please indicate to the Commission the proposed location of the unit wells?

A If the Commission will refer to the map, we have four wells within the new unit area. The first one in the northeast of 24, 25, 12; second in the northwest of 25, 25, 12; the third in the southwest of 7, 25, 11; and the fourth in the northwest of 20, 25, 11.

Q Do those proposed locations, do they represent changes from the proposed locations as submitted during the initial hearing?

A Yes, sir.

Q Have those been changed by reason of the readjustment of the acreage in the unit?

A Yes.

Q Do you have any further comments on the Exhibit No. 7, Mr. Nantker?

A The map.

Q Yes.

A Not at this time, no, sir.

Q Since the last hearing, has Shell received additional joinders?

A Yes, sir.

Q In the proposed amended Carson Unit Agreement?

A Yes, sir. We have been joined, or are about to be joined by the following companies, Humble, Phillips, El Paso as to their non-Kelly owned land, and Skelly Oil.

Q Have you received telegrams or letters from those people?

A We have received evidence from these companies that they will sign the unit agreement or unit operating agreement or amendment thereto.

Q I hand you what has been marked Shell's Exhibits 8, 9, 10

and 11, and would ask you if these are the copies of the letters indicating that the various parties will join the unit?

A Yes, sir.

Q Or have joined the unit? A Yes, sir.

Q Do you have the data now available showing the percent of joinder in the various categories within the new unit area?

A Yes, sir. With Shell's, Phillips', Humble's, Skelley's and El Paso's committed acreage of the working interest, eighty-eight point . twenty-eight plus percent is committed.

Q Of the total unit area?

A Of the total unit area, one hundred percent of Shell's overriding owners have committed their interest, and the other four companies are securing the joinder of their royalty owners or overriding royalty owners.

Q Do you have the percentage of joinders by various categories of the land, state land, federal, fee?

A Yes, sir. Federal land constitutes 76.03% of the unit and is one hundred percent committed. Indian land constitutes 11.4% of the total of which 9.38 is committed. State land, 12.50 percent of the total, of which 2.34% is committed.

Q Am I correct that you were unsuccessful in securing commitments from the L. C. Kelly state acreage?

A Yes, sir.

Q He refused to join? A Yes.

Q Considering the amendment to the proposed unit agreement, Mr. Nantker, would you please state to the Commission what changes are proposed by the amendments?

A Yes, sir. The amendment states, in I believe the third



paragraph, the intent of the change, which is to change paragraph nine of the original unit agreement and paragraph ten as well as paragraph three which gives the description of the unit area and also the exhibits had to be changed to fit the new unit area. So that paragraph three is revised only to the extent that we have reduced the size of the unit area and the Exhibits A and B are changed likewise.

Paragraphs nine and ten have been changed to meet the new situation. Paragraph nine in the first or the unit agreement submitted on the 21st of June was based upon the fact that a discovery had been made within the then proposed unit area. It went into paragraph ten where the five wells which were at that time prepared were to be drilled as further development wells. This amendment changes paragraph nine to a drilling to a discovery paragraph, which is, as you gentlemen know, common in the type of unit agreement usually requested or submitted. And paragraph ten then follows with the plan for further development.

Q Any other changes?

A There was a change in the number of wells. The well requirement was placed in nine rather than ten, and because of the contracts of the unit by twelve sections, the drilling requirement originally requested by the survey was reduced from five to four wells. One Dakota and four Gallup tests.

Q Were there any other changes brought about by these amendments, Mr. Nantker?

A I believe the agreement does not provide for automatic termination.

Q Are there any other comments about the proposed amendment?

A No, sir.

Q In Shell's application to the Commission and to the Land Commissioner, it was requested that all wells drilled since July 15 of this year be considered as wells drilled in fulfillment of the unit obligations, is that correct?

A That is right, and that language is in the unit agreement, in the amended unit agreement.

Q Was that point considered by the United States Geological Survey --

A In Washington, yes, sir.

Q Yes.

A I think it was considered in their letter.

Q In any event, they will consider wells drilled by July 15?

A Our people were advised by the Washington Survey that wells drilled after July 15 will be considered unit wells.

Q You are making a similar request of the Commission?

A Yes, sir.

MR. SETH: I believe that is all the direct we have on the agreement and the land status. Mr. Collins will be our geological witness.

CROSS EXAMINATION

By MR. MANKIN: Mr. Nantker, I take it that July 15 was the date which was indicated would be the starting date for wells that would be counted for the unit, is that correct?

A Yes, sir.

Q Well No. 1 was started after July 15?

A After July 15.

Q Wells No. 1 and 2 have now been drilled and have encountered commercial production from the lower Gallup, is that correct?

A Yes, sir. I would like to defer that to the technical witness.

Q You indicated that there would now be four wells instead of five?

A That is right.

Q One would be a Dakota well?

A Yes, sir. No. 1 was drilled to the Dakota.

Q And plugged back?

A Plugged back to the Gallup.

Q Of the five original intended wells, the fifth well was deleted by this amendment, is that correct?

A Yes, sir.

Q Of the remaining four wells, wells two, three and four, the locations have been changed from the original location proposed, is that correct?

A Yes, sir.

Q Turning again to your Exhibit No. 7 which indicated the new map, did you indicate what commitment would now be made with El Paso, Humble, Phillips, Skelly and Shell joining in the unit, what percentage of total acreage would that now be committed to the unit?

A 88.28%.

Q 88.28%, which was predominantly federal acreage?

A Yes, sir.

Q Which Shell's acreage is predominantly federal?

A Yes, sir.

Q Including Indian land, or is it all just federal lands?

A It includes all of the Indian land within the proposed unit area except two quarter sections.

Q The original unit area was a little over 23,000 acres?

A Yes.

Q That will be presently cut to approximately 15,365 acres, is that correct?

A Yes, sir.

Q By eliminating twelve sections? A Yes, sir.

Q Have the other operators within the unit area indicated any further change of their position than what was originally presented in the original hearing?

A Yes, sir.

Q I am speaking of Wood River, Evanson and Monzano.

A And Magnolia have all again declined to join the unit.

Q They have again declined similarly to what you have presented as Exhibit 5 in the original case?

A Yes, sir.

Q There is still provision for them to join?

A Subsequent joinder, yes, sir.

Q Within a five-year period, is that the time limit?

A I think they can join at any time pursuant to the unit agreement and upon the terms at which the other parties will admit them.

MR. MANKIN: Mr. Nutter, did you have any questions?

By MR. NUTTER:

Q Your other 23,000 acres had what percent of the acreage committed to the unit?

A That information was given last hearing -- it is on page 13, was 74%.

Q 74% of the total acreage was committed?

A Yes, sir.

Q At the present time your unit has approximately 15,000 acres?

A Yes.

Q What percentage?

A Eighty-eight plus percent.

Q Any arguments that anyone might have for effective control wasn't sufficient at the previous hearing, are lessened at this time because you have more control than you had previously?

A That is right.

MR. NUTTER: That is all.

By MR. COOLEY:

Q What was the purpose of eliminating the automatic termination provision as you indicated previously? I believe in your direct testimony you indicated that the automatic termination provision had been deleted.

A In the first unit agreement submitted we had special language for paragraph nine and ten apart from the statutory language which was predicated on the discovery in the former unit area. Upon revision of the unit agreement, all land upon which discovery had been made had been eliminated in addition to other lands, and so we, at the request of the Survey, turned to the language in their suggested form.

By MR. NUTTER:

Q The original unit agreement was also based on the premise that there had been, already been a discovery made in the unit area?

A Yes.

Q The amendment is based on the premise that no discovery has been made?

A Within the unit area.

Q For that reason, the elimination clause is not so necessary at this time?

A Yes, sir.

By MR. MANKIN:

Q I believe in this revised unit area, Mr. Nantker, I believe there is approximately 360 acres of state lands that would now be committed, is that correct?

A That is correct.

Q In other words, it's within Section 2 and Section 32, that's the only committed land?

A Yes, sir.

Q Which would be El Paso's? A Yes, sir.

Q I said 360, Shell's acreage is likewise committed?

A Yes.

Q Shell's 80 acres in Section 32 and El Paso's acreage in Section 32 and El Paso's acreage in Section 2, and that is the limit of the state acreage in this unit?

A Yes, sir.

Q Which doesn't materially change from the original unit as far as proposed acreage is concerned?

A It increases the amount of committed acreage substantially.

Q Because of El Paso's joinder?

A Yes, sir.

MR. MANKIN: Any further questions of the witness in this case?

MR. SETH: We would like to offer Shell's Exhibits 6 through 11 at this time.

MR. MANKIN: Is there any objection to the Exhibits 6 through

11? If not they will be so entered. If no further questions of the witness, the witness may be excused.

MR. NUTTER: A remark was made that there was 360 acres of state land committed. I believe that figure is 440.

MR. MANKIN: I corrected that later by adding Shell's acreage.

A Yes, adding Shell's acreage.

(Witness excused.)

D O N A L D F. C O L L I N S

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. SETH:

Q Will you state your name, please, Mr. Collins?

A Donald F. Collins.

Q By whom are you employed? A Shell Oil Company.

Q What capacity? A As geologist.

Q You have not testified before the Commission before, have you?

A No, I have not.

Q Would you please state briefly your educational and professional qualifications?

A I received an A. B. degree from the University of California in 1948 and Master's Degree in 1950 from the same school.

Q In what field?

A Geology. I have been employed by Shell since 1950 in various capacities as a geologist.

Q Are you familiar generally with the geology of the area under consideration in this case?

A Yes, for the past four months I have been charged with the subsurface geology in the Carson area.

Q In that work have you made a detailed study of the geology in this and adjoining areas?

A Yes, I have.

MR. SETH: Are his qualifications acceptable?

MR. MANKIN: They are.

Q Will you indicate to the Commission briefly, Mr. Collins, the geology of the area included within the proposed amended Carson Unit?

A Well, our concept of the geology in this particular area structurally of a slight terracing in the cretaceous units. The major objective appears to be Gallup and sandstone interval of upper cretaceous age. We have other objectives in Point Lookout sand, and the Dakota Unit which was tested in our first well. Structurally it is a very simple area, stratigraphically, a very complex area. Of the Lensing Sands and unknown reservoir conditions.

Q Mr. Collins, have you read the testimony that was given at the previous hearing on the Carson Unit?

A Yes, I have.

Q Have the wells drilled by Shell since that date indicated any factors that would cause you to comment on the testimony previously given, or to expand it?

A No, not significantly. We have moved our locations for the two, three, four wells in the unit area based on the geologic study that has been undertaken in the past few months.

Q Would you indicate to the Commission, please, the development that has already taken place within the unit area in some detail?

A All right. Our first well was drilled in the northeast of 24. It was drilled to the Dakota. We set pipe to the Dakota, and



it appeared attractive, and we tested the well. We plugged back to the Gallup interval. We performed our stimulation practices the well was shut in after testing at a rate of 598 barrels a day on a short test, and was plugged, it was shut in.

We drilled No. 2 approximately a mile to the southeast. We encountered the Gallup, set pipe and well put on production, but shut in prior to recovering our stimulation oil or load oil. We have just now drilled to the Gallup in No. 3, ran logs and are setting pipe on No. 3. We have no figures or no indication of what production will be at 3, although it looks attractive. We have just established location 4.

Q As near as you can determine now, do you anticipate the area within the amendment limits of the Carson Unit to be productive reasonably? Do you have reasonable expectation of it being productive?

A I do, yes.

Q In your opinion do you believe that you have effective control of the apparent reservoir under the unit agreement as it is now proposed?

A Yes.

Q Do you believe that under this agreement there will be the best utilization of reservoir energy in the state and the other parties will receive their fair share of gas that is capable of being produced?

A Yes, most decidedly.

Q Are there any other comments on the geology of the area you would like to mention at this time?

A As to the geology of the Gallup interval which is the productive unit here, we at present have not defined it to the extent

that we are aware of all the ramifications of the reservoir, and as to its exact nature we are not sure. The reservoir may be developed by Lensing Sands. But further than that, I wouldn't care to say at present.

MR. SETH: That is all the direct questions we have.

CROSS EXAMINATION

By MR. MANKIN:

Q Mr. Collins. Returning again to your statement that in the original well, the well No. 1 you encountered the Dakota, was it commercially productive in the Dakota of gas?

A We found no hydrocarbons at all in the Dakota.

Q So you, at the present time, don't feel it has much possibility for the Dakota?

A That is correct.

Q Since that time you have developed and encountered production in the lower Gallup, both Wells No. 1, 2 and presently No. 3?

A It appears that three is productive.

Q Is No. 3 any indication that it is more of a gaseous nature than No. 1 and 2 was more of a gas well than oil well?

A We have not tested three at present.

Q You have no knowledge as to its productivity?

A That is right.

Q Can you indicate if the wells which you have drilled, which is Wells 1 and 2, are similar in nature as to thickness of pay section and what have been encountered in the original discovery area outside the unit in the original Bisti Area?

A Wells 1 and 2 are comparable to wells in the original discovery area.

Q Wells 1 and 2, has water production been found in the lower Gallup?

A We have made no appreciable amount of water in either well.

Q You indicated that there might be a possibility of production from some sections of what has commonly been called the Mesaverde section whether it be the Point Lookout or Menefee. Was there any test made in those sections?

A Yes, we tested the Point Lookout Section in our Carson No. 1 and found lower portion of the Point Lookout oil-bearing.

Q Found it to be what? A Oil-bearing.

Q But in none of these wells did you encounter the Point Lookout or Menefee or any of the others as being gas-bearing?

A That is correct.

Q Entirely oil-bearing?

A Not entirely oil-bearing.

Q But it was not commercial?

A The only oil we encountered was in the base of the Point Lookout Section, but other than the section was wet.

Q Is it your opinion as a geologist that the wells in the unit which are wells 1 and 2 will likewise be filled in by further development toward the present development in the Bisti Area?

A It is my opinion, yes.

Q And possibility that it may keep in the same trend that is now developing oil?

A I think it will be, in my opinion it will be developed on trend.

By MR. NUTTER:

Q Is your location No. 4 a rather well-established location, is

it definite that you are going to drill a well there?

A Yes, we have surveyed the location.

MR. NUTTER: That is all.

By MR. UTZ:

Q As a geologist, do you have any opinion as to the reservoir ranges as to whether it is a water drive, solution drive, or would you care to state?

A I would prefer not to answer. My capacities as a reservoir analyst are limited.

Q Would you care to state what control you are using in locating the wells, isopachic conditions or straight edge geology?

A We are locating our wells based on a subsurface study delineating sand trends.

Q In other words, isopachic conditions?

A That is correct.

MR. UTZ: That is all I have.

MR. MANKIN: Is there any further question of the witness in this case?

MR. SETH: We have nothing further.

MR. MANKIN: If there is nothing further, the witness may be excused. Is there any further statement to be made in this case? If not we will take the case under advisement.

(Witness excused.)

MR. SETH: We will submit the executed copies of the amendments in due course.

C E R T I F I C A T E

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings in the matter of Case No. 1085 were taken by me on September 5, 1956; that the same is a true and correct record to the best of my knowledge, skill and ability.

  
Reporter

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
June 21, 1956

IN THE MATTER OF:

Case No. 1085

TRANSCRIPT OF PROCEEDINGS

NEW MEXICO OIL CONSERVATION COMMISSION  
MABRY HALL - STATE CAPITOL  
SANTA FE, NEW MEXICO

REGISTER

HEARING DATE June 21, 1956 TIME: 10:00 a.m.

NAME:	REPRESENTING:	LOCATION
J. E. Mohr	Shell oil Co.	33 Richards St. Salt Lake City, Utah
L. W. Thacker	Shell Oil Co.	1901 N. Main Ave. Durango, Colo.
Hsieh E. Kell	Shell oil Company	1008 W 6th St Los Angeles.
J. W. Mather	Shell Oil Co.	1901 Main Durango, Colo.
R. E. Eddy	Shell Oil Co	33 RICHARDS ST SALT LAKE CITY, UTAH
J. M. L. Hobbs	Shell Oil Co	1008 - W 6th St Los Angeles Cal
L. A. Smith	Auth + Inventor	Santa Fe
Al. Gray	Independent	Aztec, New Mexico
J. W. Sunday	OCC	Santa Fe, NM
L. E. Harney	Independent	Santa Fe, N.M.

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
June 21, 1956

IN THE MATTER OF:

CASE 1085: Application of Shell Oil Company for an order granting approval of their proposed Carson Unit Agreement, embracing 23,045 acres, more or less, and located in Township 25 North, Ranges 11 and 12 West, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order granting approval of their proposed Carson Unit Agreement embracing 23,045 acres, more or less, and comprising All of Sections 5 to 8, incl.; All of Sections 17 to 20, incl.; All of Sections 29 to 32, incl.; Township 25 North, Range 11 West, and all of Sections 1 to 4, incl.; All of Sections 9 to 16, incl.; All of Sections 21 to 28, incl.; All of Sections 33 to 36, incl.; Township 25 North, Range 12 West, San Juan County, New Mexico.

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BEFORE:

Mr. Warren W. Mankin, Examiner.

PROCEEDINGS

MR. MANKIN: The hearing will come to order. The only case we have on the docket this morning is Case No. 1085.

MR. GURLEY: Case 1085 is the Application of Shell Oil Company for an order granting approval of the proposed Carson Unit Agreement embracing 23,045 acres, more or less, and located in Township 25 North, Ranges 11 and 12 West, San Juan County, New Mexico.

MR. KELL: My name is Leslie Kell and also appearing on behalf of the applicant will be Mr. Don Gresser and Mr. John Mohr. This is an Application by Shell Oil Company for the approval of the Carson Unit Agreement. This unit area includes approximately 23,045 acres of land in Township 25 North, Ranges 11 and 12 West in San Juan County, New Mexico. At this time, Mr. Examiner, we would like to introduce in evidence as the applicants Exhibit 1, a copy, an original executed copy of the Carson Unit Agreement and if it will be agreeable with the Commission we would like permission to withdraw the original executed and substitute, at the close of the hearing, a signed executed copy.



MR. MANKIN: That will be perfectly alright. You have witnesses now to be sworn in?

MR. KELL: Our first witness will be Mr. Gresser.

DONALD W. GRESSER

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

By Mr. Kell:

Q. State your full name please.

A. Donald W. Gresser.

Q. By whom are you employed?

A. Shell Oil Company.

Q. You have not previously testified before the Commission, have you?

A. No, I have not.

Q. Would you state, briefly, your educational background in the field of geology?

A. I graduated in 1947 from the University of California in Los Angeles with an A B Degree in geology.

Q. Since completion of your formal education, would you state briefly the experience which you have in the field of geology?

A. I started with Shell Oil Company as a geophysical computer and after about a year and one half in that work I was transferred into geology. In several localities did surface and sub-surface geology until 1953 when I became District Geologist in Ventura. I had that job until November of last year when I was transferred to Durango, Colorado as District Geologist there.

Q. Your present position then is District Geologist in Durango, Colorado?

A. That is right.

Q. Is the Carson Unit area within your jurisdiction?

A. Yes, it is.

Q. Are you familiar with the general geological structure with - in the Carson Unit area?

A. Yes.

Q. Are the witness' qualifications acceptable?

MR. MANKIN: They are.

Q. You have made a study of the geological structure within the Carson Unit area, have you not?

A. Yes, that is right.

Q. What geological or geophysical data was utilized in the course of this study?

A. We have done detailed seismograph work over the unit area. In addition, we have done sub-surface studies consisting of well correlations, electric log correlations, trying to define sand trends.

Q. Would you describe, briefly, the nature of the geological structure within the unit area?

A. The Carson area is located on the South flank of the San Juan Basin. Based on our seismograph work in the area, and I am speaking now of the cretaceous beds, we have indications of a structural platform or terrace extending in an easterly direction across the unit area. Now, this terrace interrupts the normal regional northeasterly dip that makes up the south flank of the basin. Superimposed on this platform are minor, small anticlinal culminations and synclinal features. I might mention just the objectives in the area. Primarily the cretaceous formation the Pictured Cliffs, the Cliff House, Allison-Menefee, Point Lookout, the Gallup and Dakota and also there should be Pennsylvanian possibilities.

Q. In your opinion, is there a reasonable expectation of production from all of the lands that are included within the unit area?

A. Yes, I think there are.

Q. The unit does not include any additional or excess land and to which there is no such expectation, does it?

A. No, in my opinion.

Mr. Kell: At this point, if it is agreeable with the Commission, I would like to submit in evidence as applicant's Exhibits 2 and 3, copies of the geological report and contour map which were previously submitted to the Commission with the

application which were also filed with the United States Geological Survey. The geological report to be No. 2 and the contour map 3.

Q. Are you generally familiar with the drilling that has been done in the general area in which the Carson Unit is situated?

A. Yes, I am.

Q. Would you indicate to the Examiner and to the Commission the location of the wells that have been thus far drilled in the general area?

A. This is a map showing the proposed unit area outlined in green. The red is Shell lands and to the west are the El Paso wells, the El Paso Kelly State 1 discovery. Further Northwest the so called Blackrock Pool, British American drilling in there. We have drilled two production wells, 12-15 and 14-15, which are in the process of being tested. Now in addition to this drilling - by the way the black circles are completed wells, the blank ones are drilling wells or testing wells. Now in addition to these wells, we would propose to drill five tests, located as shown on this map.

Q. In general, to what depth or horizons have these other wells in the area of the Carson Unit been drilled?

A. In general to a depth of 48 to 4900 feet to test the Gallup sand which is the big producer in the Blackrock Bisti area.

Q. Are you familiar with the Carson Unit Agreement itself?

A. Yes.

Q. Does it have a segregation clause?

A. Yes, it does.

Q. In your opinion, will the State receive its fair share of production under this Carson Unit Agreement?

A. In my opinion, yes.

Q. How many wells are actually required to be drilled under the Unit Agreement itself?

A. There will be five. Four through the Gallup, primary objective, and one through the Dakota. Both upper cretaceous.

Q. And those wells are in addition to the two wells that Shell has previously drilled, is that correct?

A. That is correct.

Q. I think you had previously indicated to the Commission the approximate location of these wells based upon our present thinking.

A. That is right.

Q. In your opinion, will the drilling of the proposed five wells constitute a good test of the Carson Unit Area?

A. Yes.

Q. Is it your opinion that unitization of the Carson Unit area will foster conservation purposes and prevent waste and result in orderly development of the unit area?

A. Yes.

Q. Is it also your opinion that the unitization of the Carson Unit Area will result in the best utilization of reservoir energy?

A. Yes.

Q. You are aware, are you not, that a portion of the acreage, principally located along the boundaries and fringes will not be actually committed to the unit?

A. Yes, I am.

Q. Is it your opinion, that notwithstanding this uncommitted acreage, Shell, as Unit Operator will never the less have effective control of unit operations?

A. Yes, sir.

Q. Upon what do you base this opinion?

A. Primarily on our large block, contiguous lands and based on our studies of the geology that the area designated there would be a logical one based primarily on the block and the geology.

Q. Now, bearing in mind, of course, that the ultimate determination with respect to whether or not this unit agreement is to the best interest of the State, is the prerogative of the Commission, are you personally of the opinion that unitization under the Carson Unit would be of the best interest of the State?

A. Yes.

Q. Does the Examiner have any questions that he would like to ask of the witness at this time?

MR. MANKIN: You indicated, I believe, Mr. Gresser, that you are presently completing two wells within the unit which are not wells which would be required by the unit, they are just offset wells to other production?

A. Yes, those wells are completely separate from the five.

MR. MANKIN: Also, is it not true that there are other wells that will offset presently completed or wells being completed, that were not in the five obligations wells as well.

A. I think that is essentially correct.

MR. MANKIN: Did you desire to indicate this land map as exhibit four or did you wish -

MR. KELL: Yes, Exhibit 4.

MR. MANKIN: This map which was marked Exhibit 4 indicates a green coloration as the proposed unit area which was the way that this particular hearing was called for the area concerned, is that correct?

A. Yes.

MR. MANKIN: There is also red markings on the map which I believe indicates acreage other than Shell's.

A. No, that is Shell's.

MR. MANKIN: In other words, oh, I see, the outline in red is the Shell acreage and therefore there is certain acreage outside of that red area which is other operators?

A. That is right.

MR. JOHN MOHR: The red outline indicates all of Shells land.

MR. MANKIN: Yes, Now, Mr. Gresser, I notice that these five obligations wells essentially lie in the trend that has been developed up until this present time, does that appear to be correct. It is on a certain trend which has been developed up until the present time?

A. Yes, based on a trend - those wells would be on trend to the Southeast of present production. I should point out that the Wells 4 and 5 there we consider as contingent. They may change based on the information we get from the first three. The first three are considered firm.

MR. KELL: I have another question. The interval between wells, these five wells to be drilled, the initial one is to be drilled sixty days after the approval of the unit and there are to be 90-day intervals between the next four wells.

A. That is right.

MR. NUTTER: Mr. Gresser, is this geological report your report?

A. Yes, it is.

MR. NUTTER: The primary objective in the drilling within this unit area is going to be the discovery of oil or the production of oil, isn't it or it is?

A. Well, that will be one of the primary objectives. The second is spreading the wells out over the block so we may evaluate this large block. In other words we are trying to get information on sand distribution, structure. But are, guided by, of course, trying to find oil but also evaluating the land block.

MR. NUTTER: However, the principal target is oil rather than gas in this particular area.

A. Oh yes, I would say so.

MR. NUTTER: How does the oil occur in this area. That is the production that we have got in that area so far.

A. You mean what forms the trap?

MR. NUTTER: That is right. Where do you find the oil in that area?

A. Well, I don't know if I can satisfactorily answer that. I don't think we know the answer to it now. Possibly it is Lensing sands - Lensing Gallup sands. Possible the trapping feature might be a pinch-out, up-dip to the south. As you can see, the discovery well, El Paso Kelly State 1, based on our picture in the cretaceous is located near the axis of a shallow syncline, just what the significance is we are not sure at this time.

MR. NUTTER: What I was wondering about was how confined to one small area most of the production might be or whether it will be found in long stringers of sand in that shale or in pinch-outs that extend over a period of quite a few miles or just where we could expect to find the development in the area.

A. Well, I would say, possibly, in these sands, this Gallup sand here, the primary objective in a northwest southeasterly trending direction. The distance I would not know at this time.

MR. NUTTER: Well, do you think that in a sand that is running northwest southeast that there would be communication from one area to another through the sand?

A. Possibly, but again, possibly not. I would guess that in this case that probably there is no communication. But I can't -

MR. NUTTER: The reason for my asking that was to - I know that the unit agreement specifies that the participating area shall be based on separate producing structures or pools and I was just wondering what the basis for the establishment of participating areas later on would be. Just what type of formation we would encounter the oil in and how much area could be included in the participating area.

A. Well, I would answer that just based on the production already in the area in the Blackrock and the Bisti Pool that if we do make a discovery that we would have to be guided by the development as it exists over there until we actually find out what the trend is. I don't think we are going to know from the outstep as far as this just what the answer is with just one well.

MR. NUTTER: Now, these several wells that you have tentative locations on are scattered over the general trend however, they are not concentrated in any one area?

A. That is right.

MR. KELL: If I may make a comment here, with respect to the participating area, the unit agreement provides that they shall be approved by both the Commissioner of Public Lands and - of the State of New Mexico and the Conservation Commission as well as the United States Geological Survey before they are finally effective.

MR. NUTTER: Well, which of these locations are fairly definite?

A. 1, 2, and 3 those are considered firm. This is the Dakota well and the rest are

all Gallup 4 and 5, now those will be contingent on what we find out here. But what we are trying to do here is get information on possible sand distributions, structure over the breadth of the block.

MR. NUTTER: Now, which one is the Dakota well.

A. This one. The No. 1 well. That would be on this map, sitting right in here and -

MR. NUTTER: You have three firm locations. Wells Nos. 1, 2, and 3? The No. 1 is the Dakota test?

A. Yes, that is right.

MR. NUTTER: 4 and 5 are tentative locations depending upon the outcome of the drilling of the other three?

A. That is correct.

MR. NUTTER: Mr. Gresser, what did you mean here in the last paragraph of page three of your reports when you said "as other parties will be involved in the unit it becomes increasingly important to insure such orderly development".

MR. MANKIN: Mr. Nutter, you are speaking of the geological report, are you not?

MR. NUTTER: Yes, sir.

MR. MANKIN: Which is Exhibit No. 2.

A. Would you re-state that again please?

MR. NUTTER: In the last paragraph on page 3 of your geological report you stated that "as other parties will be involved in the unit it becomes increasingly important to insure such orderly development".

A. Well, what is meant by that is, with other people - other companies being in the unit by having a unit area we will develop any field found in the most orderly and the best practices available so that this will be a more orderly operation.

MR. NUTTER: And that principal applies whether the other acreage is committed or whether it is not committed?

A. Yes.

MR. NUTTER: With reference to the last paragraph or the last sentence in your geological report, that statement as to the confidential requirement of this report,



no longer applies, you realize that. I mean as soon as it becomes a part of the Commission record, it is in the record.

A. Well, I do not know about that but I guess that is right.

MR. NUTTER: I just wanted to make that point clear right now. I believe that that is all I have for Mr. Gresser.

MR. MANKIN: One other question Mr. Gresser. You have spoken of the Blackrock area and the Bisti Area. Of course, at the present time we have only, this Commission has designated only one area, which is the Bisti area and the other area which has been known as the Blackrock area, which British American has developed, has not been designated at the present time. Do you feel that this trend in the Blackrock area is of the same or similar characteristics and that there is a possibility that the area will fill in or that these are separate lenses and will be separate and distinct fields for lower Gallup development as might come down into the Carson unit?

A. Well, it is too early to tell really but it is my opinion that the two probably will tie together.

MR. MANKIN: And therefore the trend will continue essentially the same on into the Carson area as you propose it?

A. That is right.

MR. MANKIN: So, at the moment you do not see that this Blackrock area and the Bisti are separate and distinct common sources of supply and very likely the two will tie up as shown by further development which is going on at the present time?

A. In my opinion, I think that they will tie up. But we will have to wait on that for more drilling.

MR. MANKIN: Is there further question of the witness in this case? Is there objection to entering exhibits 1 through 4 in evidence at this time with Exhibit 1 being the original to be withdrawn and replaced with another signed copy. If not they will be so entered. The witness may be excused.

MR. KELL: The next witness will be Mr. Mohr.

MR. JOHN MOHR.

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

By Mr. Kell:

Q. Will you state your name?

A. John E. Mohr.

Q. You are presently Division Land Manager for Shell Oil Company, are you not?

A. That is correct.

Q. Is San Juan County, New Mexico in which the Carson Unit is located in the area of your jurisdiction?

A. Yes.

Q. Are you familiar with the proposed Carson Unit Area?

A. Yes.

Q. Will you briefly describe the types of land within the unit area and the percentages of the various ownerships.

A. In the Carson unit of 23,044.86 acres, 74.30 % is federal land, comprising 17,122.92 acres. 11.10% is State of New Mexico land, comprising 2,559.12 acres. 14.60% is Indian allotted land, Navajo Indian allotted land, comprising 3,362.82 acres making a total of 23,000 plus.

Q. What percentages of the total working interests within the unit area have now been committed?

A. A total of 74.65 percent has been committed and that is broken down into 100 % of federal acreage is committed, 3 % of the State acreage is committed, and none of the Indian Allotted land.

Q. This State acreage that is committed, it is the only State lease that Shell holds in the unit area, is that correct?

A. That is correct. Shell has committed its only State acreage and all of its Federal acreage and we have no Indian allotted lands.

Q. Approximately what percentages of the royalty interests owners have thus far been committed?

A. As of this morning over 97 %. We have people now accumulating the balance of the signatures. We anticipate no trouble in signing up 100 % of the royalty owners.

Q. Does the unit agreement contain a provision for subsequent joinder by both the royalty and working interests owners?

A. It does.

Q. Now directing our attention to the unit agreement itself, is the unit agreement in a form which has been previously approved by the Conservation Commission?

A. That is correct.

Q. Has the unit agreement been approved as to form by the Commissioner of Public Lands of the State of New Mexico.

A. That is correct.

Q. Has the unit agreement been submitted to the United States Geological Survey for preliminary approval?

A. Yes.

Q. Has that preliminary approval been given?

A. Yes.

Q. The unit agreement provides for Shell Oil Company to act as Unit operator, does it not?

A. Yes.

Q. Does the unit agreement contain a provision whereby lands not included in a participation area within five years will automatically be excluded from the unit?

A. Yes.

Q. Does the unit agreement also provide that it will terminate after completion of the five wells in the event we do not obtain any discoveries?

A. That is very true.

Q. Does the unit agreement provide for allocation of the production on an acreage basis?

A. Yes. I might interject, the participating area must be approved by both the State and Federal Government.

Q. By the State, you mean both of the Commission itself and the Commissioner of Public Lands?

A. That is right.

MR. GURLEY: Excuse me please counsel, this is most irregular, but I have got to leave and I would like to ask a couple of questions here. You stated that 74% of the land in the unit is committed.

A. Yes.

MR. GURLEY: Who owns the land? A. Shell Oil Company.

MR. GURLEY: They own it all?

A. We own it all.

MR. GURLEY: Then your 97% of royalty interest committed is on the 74%, is that correct?

A. That is right.

MR. GURLEY: Now have you had any protest to you directly on this unit?

A. We have had no protests and we have for evidence, if you so desire, a letter from every other working interest owner giving their position as to joining the unit/

MR. GURLEY: None of them have protested in those letters?

A. None have protested. They have all politely declined to join us.

MR. GURLEY: That is all of the questions I have. Excuse me for interrupting there.

MR. MANKIN: Go right ahead please.

MR. KELL: In your opinion will the State be assured of its fair share of unit production under this unit?

A. Yes.

Q. In your opinion will the unitization of the Carson Unit area promote conservation and prevent waste?

A. Very definitely.

Q. In your opinion, will the fact that some of the acreage within the unit is not committed prevent Shell Oil Company, as unit operator from having effective control of unit operations.

A. No.

Q. What is your personal opinion with respect to whether or not the unitization of the Carson Unit area will be to the best interest of the State?

A. I think it will be very definitely to the best interests of the State. Would you care to have me elaborate on that?

MR. KELL: If you wish.

A. I think it will be to the best interests of the State because we propose to drill five tests across the unit which will evaluate the State's section, not only the portion that is committed but the portion that is not committed. And it will give a very early answer for the State as to the value of their land.

MR. KELL: Mr. Examiner, do you have any questions which you would like to ask of the witness?

MR. MANKIN: Do you have a question, Nutter?

MR. NUTTER: With regard to particularly the state lands, but also Federal lands I guess is there a segregation clause for the leases that are committed?

A. Yes. For both State and Federal. Incidentally there is no fee land. In the unit. Three categories only, Indian, Federal and State.

MR. NUTTER: What happens at the end of the five proposed test wells? Now, if you have production in these other two wells that you are drilling now, or have drilled, they will keep the unit intact, will they not?

A. No, I regret to say, they will not. The unit agreement specifically provides that we must make a discovery in one or more of the five wells that we are committing ourselves to, and if we do not the unit agreement will expire at the end of 90 days after completion of the fifth well.

MR. NUTTER: And all five of those wells have to be drilled on rather short term?

A. We propose, rather than the 90 days allowed between wells allowed by the unit agreement to operate as continuously as possible. We will move from one drill site to the next.

MR. NUTTER: In other words, it is your objective to evaluate this thing one way or another in a hurry,

A. This year. This summer.

MR. NUTTER: I believe that is all I have for Mr. Mohr. I think it would be a good deal if we got those letters from the other operators entered as exhibits.

A. Very well. I might say though that we have these letters not only from all of the working interest owners but one man who is a carried interest owner, L. C. Kelly, on the State land. Two of the communiques that we have been pushing to get at are telegrams, the rest are all letters.

MR. KELL: If that will be agreeable then they will be submitted in a group as Exhibit 5.

MR. MOHR. Would it be helpful to the Commission if we presented a map that if fully colored outlining our lands as well as other companies lands?

MR. MANKIN: I believe it is clear on your Exhibit No. 4, Mr. Mohr, I am sure it will be adequate. Is there further question of the witness in this case? If not, the witness may be excused. Do you wish to enter Exhibit 5, which is the several letters from the other operators, in evidence. Is there objection to the entering of these letters as Exhibit 5, in evidence? If not, they will be so entered. Are there any other persons here who wish to make a statement or present any evidence in this case? Any other appearances. If there is none, we will take the case under advisement and the hearing is adjourned.

STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF SANTA FE )

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

Dated at Santa Fe, New Mexico, this 31st. day of August, 1956.

Gloria Alvarado