

CASE 6802: HARLAN DRILLING COMPANY FOR
DRILLING DRAINHOLES, MCKINLEY COUNTY,
NEW MEXICO

Case No.

6802

Application

Transcripts

Small Exhibits

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 6802
Order No. R-7346

APPLICATION OF HARLAN DRILLING
COMPANY FOR DRILLING DRAINHOLES,
MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 30, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 6th day of September, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Harlan Drilling Company, seeks authority to drill and case a vertical hole to an approximate depth of 3200 feet in the Gallup formation from a surface location 1930 feet from the South line and 678 feet from the East line of Section 13, Township 19 North, Range 6 West, NMPM, McKinley County, and to then drill two lateral drainholes therefrom, each to a distance of approximately 200 feet in the Gallup formation.
- (3) That at the conclusion of the case, supplemental information was requested.
- (4) That the supplemental information was not filed in the nearly three years following the hearing and this case should therefore be dismissed.

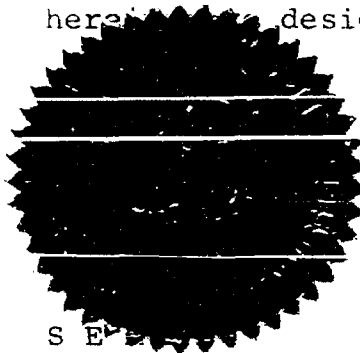
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Case No. 6802
Order No. R-7346

IT IS THEREFORE ORDERED:

- (1) That Case No. 6802 is hereby dismissed.
- (2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Joe D. Ramey
JOE D. RAMEY,
Director

S E



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

September 8, 1983

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Rob D. Barberousse
Yost, Barberousse & Yost
Attorneys at Law
Post Office Box 536
Santa Fe, New Mexico

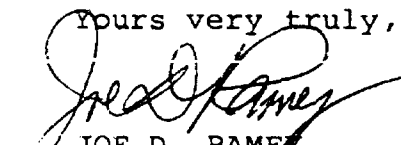
Re: CASE NO. 6802
ORDER NO. R-7346

Applicant:
Harlan Drilling Company

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD X
Artesia OCD X
Aztec OCD X

Other _____

LAW OFFICES
YOST, BARBEROUSSE & YOST

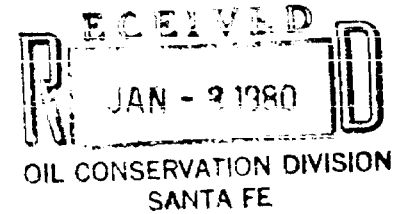
MELVIN T. YOST
ROBERT D. BARBEROUSSE
MEL E. YOST

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January 8, 1980

Case 6802

Mr. Joseph Ramey, Director
Oil Conservation Division
Energy & Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501



SUBJECT: Request for permission to drill deviated boreholes in the Gallup Formation and Dakota at Point Lookout Formations located in Section 13, Township 19 North, Range 6 West, N.M.P.M., McKinley County, N.M.

Dear Mr. Ramey:

1. It is the desire of the Harlan Drilling Company to drill a vertical borehole to the Gallup Formation at the location described above. Estimated total depth for the vertical borehole would be approximately 3100 to 3200 feet. In addition to the vertical hole, we propose to drill two deviated holes off of the vertical of approximately 200 feet each.

This vertical hole would be located 1930 feet from the southern boundary of this section and 678 feet from the eastern boundary of the section.

The initial vertical bore will be a 20 inch borehole to a depth of 100 feet. The casing will be 16 inch No. 60. The intermediate vertical bore will be drilled with a 14-3/4 inch hole and the casing will be No. 24 to the top of the Gallup formation.

We then propose to drill a 6-3/4 inch open hole in the Gallup formation with two lateral holes of 200 feet each.

If there is production, then we propose to complete with screen in the open hole production.

We may also fracture the lateral boreholes.

2. In the event there is no production as set forth in paragraph 1, or if it is deemed advisable, we would propose to continue drilling through the Gallup formation to the Dakota formation to a total depth of approximately 4200 feet.

Mr. Joseph Ramey
January 8, 1980
Page Two (2)

The vertical borehole would be an 11-3/4 inch hole to the bottom of the Gallup formation, then a 9-7/8 inch hole to the top of the Dakota formation. The casing would be 7-5/8 inch No. 24.

We would then drill at 6-3/4 inch open hole in the Dakota formation with two lateral holes of 200 feet each.

If there is production, then we would complete the process.

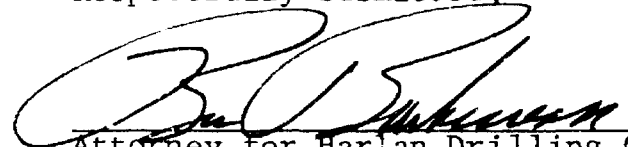
It is also possible that we may fracture the lateral holes.

3. If there is no production, then we propose to withdraw and cement above the target zone and drill to a total depth of approximately 1800 feet to the Pictured Cliffs formation, then window the casing and drill two lateral holes of 200 feet each.

Harlan drilling company requests that our request be placed on the January 28, 1980 docket of the New Mexico Oil Conservation Commission meeting in Santa Fe.

Harlan Drilling Company will have representation at the January 28th meeting.

Respectfully submitted,


Attorney for Harlan Drilling Co.

BB:mjp

CASE 6784: (Continued from January 16, 1980, Examiner Hearing)

Application of Merrion & Rayless for a non-standard proration unit and an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 640-acre non-standard gas proration unit comprising the W/2 of Section 18 and the W/2 of Section 19, Township 32 North, Range 14 West, Barker Creek-Paradox Pool, to be dedicated to its Ute Well No. 7 at an unorthodox location 1685 feet from the South line and 3335 feet from the East line of said Section 19.

In the alternative, applicant seeks an order force pooling all of said Section 19 to form a standard 640-acre unit.

CASE 6373: (Reopened and Readvertised)

In the matter of Case 6373 being reopened pursuant to the provisions of Order No. R-5875 which order created the East High Hope-Abo Gas Pool with temporary special rules therefor providing for 320-acre spacing. All interested parties may appear and show cause why the East High Hope-Abo Gas Pool should not be developed on 160-acre spacing units.

CASE 6802:

Application of Harlan Drilling Company for drilling drainholes, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill and case a vertical hole to an approximate depth of 3200 feet in the Gallup formation from a surface location 1930 feet from the South line and 678 feet from the East line of Section 13, Township 19 North, Range 6 West, and to then drill two lateral drainholes therefrom, each to a distance of approximately 200 feet in the Gallup formation. In the event the Gallup formation is non-productive, applicant seeks authority to drill vertically to the Dakota formation at a depth of approximately 4200 feet and to then drill two 200-foot lateral drainholes.

CASE 6795: (Continued from January 16, 1980, Examiner Hearing)

Application of Torreon Oil Company for a waterflood project, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the San Luis-Mesaverde Oil Pool by the injection of water into the Menafee formation through its San Luis Fed. Wells Nos. 1 and 2, located in Unit K of Section 21, Township 18 South, Range 3 East. Applicant further seeks an administrative procedure for approval of additional producing and injection wells at unorthodox locations in said project.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
30 January 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Harlan Drilling Com-
pany for drilling drainholes,
McKinley County, New Mexico.

CASE
6802

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

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

For the Applicant:

Bob Barberousse, Esq.
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I N D E X

DR. WILLIAM LYONS

Direct Examination by Mr. Barberousse	3
Cross Examination by Mr. Stamets	9
Questions by Mr. Chavez	11

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1 MR. STAMETS: We'll call at this time
2 Case 6802.

3 MR. PADILLA: Application of Harlan
4 Drilling Company for drilling drainholes, McKinley County,
5 New Mexico.

6 MR. BARBEROUSSE: Mr. Examiner, my name
7 is Rob Barberousse. I'm here representing Harlan Drilling
8 Company. I'm an attorney at law. My offices are at 320
9 Paseo de Peralta here in Santa Fe.

10 I would call at this time as a witness
11 Dr. William Lyons.

12 MR. STAMETS: I'd like to have Dr. Lyons
13 stand and be sworn, please.

14
15 (Witness sworn.)

16
17 DR. WILLIAM LYONS
18 being called as a witness and having been duly sworn upon
19 his oath, testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. BARBEROUSSE:

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

25 A Dr. William C. Lyons.

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Q And --

A L-Y-O-N-S, excuse me, just in case of confusion.

Q And where do you reside?

A In Santa Fe.

Q And by whom are you employed?

A I'm employed by RIFT Engineering and Drilling and by the New Mexico Institute of Mining and Technology.

Q Dr. Lyons, have you ever testified as an expert before this Commission before?

A Yes, I have.

MR. BARBEROUSSE: Would the Examiner like for me to go into Dr. Lyons' background?

MR. STAMETS: Just to refresh my memory, Dr. Lyons, you qualified as a petroleum engineer, is that correct?

A Yes, sir, I am a professor of petroleum engineering at New Mexico Tech.

MR. STAMETS: The witness is considered qualified.

Q Dr. Lyons, are you familiar with the application which has been filed by Harlan Drilling Company and which is the subject of Case Number 6802 before this Commission?

1 A Yes, I am.

2 Q Would you explain to the Examiner the
3 proposed application?

4 A All right. This is a farmout from Dome,
5 a lease from Dome Petroleum. It's fee land, and the objective
6 of this is basically a test well to test the lateral drilling
7 and subsequent hole completion techniques on production of--
8 from basically three zones.

9 The first zone that will be attempted
10 is the Gallup formation at approximately 3200 feet. This
11 zone will be drilled to vertically; then two laterals will
12 be drilled out of that opposite one another, 180 degrees
13 apart; drilled approximately 200 feet from the main bore,
14 and the well will be tested for increased production.

15 Prior to that, however, we'll test the
16 zone in the vertical configuration before we drill the
17 laterals to get a comparison of production.

18 If this particular configuration does
19 not prove producible we'll go on to deeper, to 4200 feet,
20 to the Dakota, case down to that level, again test that
21 zone in the vertical configuration, then kick out two 180
22 degrees apart laterals, drill those laterals at about 200
23 feet apiece from the main bore, test it again, and if it
24 does not produce -- is not producible economically, we'll
25 move up the zone to a third zone, which would be the Pic-

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1 tured Cliffs at 1800. We'll cement back up to that position,
2 cut windows in the casing, and again test the vertical con-
3 figuration and then go in and drill two laterals again, 180
4 degrees apart.

5 MR. STAMETS: You say that's 1800 feet?

6 A That's 1800 feet. That's the third
7 zone in that area.

8 The idea is to -- in particular to go
9 after the increased production that might be available through
10 the drilling of laterals and subsequent production tech-
11 niques, such as fracturing out of those lateral holes, and
12 to see if these zones, which hitherto have been basically
13 marginally producible, to see if we can improve the pro-
14 duction through these techniques that we're developing.

15 Q Dr. Lyons, do you anticipate that there
16 might be some fracing in these various zones?

17 A We may frac. We may -- we'll try to
18 probably produce out of these laterals without fracing, but
19 it's traditionally known that these zones need fracing often
20 out of a vertical configuration for -- for production, normal
21 production.

22 So we'll probably try the vertical hole
23 by itself, then drill the laterals, then test it, and if it's
24 still not producible commercially, we'll probably attempt to
25 frac it and then test it again, and then abandon it if it

1 doesn't produce at that point, and go to the next zone.

2 But the well will basically be a test
3 well for the purpose of proving out techniques of production
4 from marginal zones.

5 Q Dr. Lyons, in the drilling of these
6 laterals, these deviated holes, is there a proprietary in-
7 terest involved in the use of the equipment?

8 A Yes, there is. The techniques that we
9 use, particularly in the drilling of the laterals, is a
10 proprietary technique and we'd like to guard those as best
11 we can. The techniques have been successful in our test
12 holes that we've done in and around the Farmington area, and
13 we are now in the process, as you've heard once before,
14 when we were up here before, that we're in the process of
15 now testing this in producing formations.

16 Q Would it be your intention to -- to keep
17 the Area Supervisor apprised of the various attempts and
18 progress that you experience?

19 A Yeah. I think that there will be no
20 problem in telling -- informing the State of what's going
21 on at each step, what we've done, what we've accomplished
22 or not accomplished. The only thing we'd like to do is
23 reserve the right to keep the actual well surveys and not
24 turn them in until after completion of the well, till after
25 actual production is underway, in that zone, in whatever

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1 zone we eventually produce out of.

2 Q Dr. Lyons, the surface location of the
3 vertical are located where in relationship to the -- on the
4 property here?

5 A Well, we would keep any of the laterals,
6 the laterals will be so designed as to -- to stay in the
7 beds. The beds dip in this area, I think, about 10 degrees,
8 and we'll try to keep the laterals -- the laterals may not
9 be actually horizontal; they may be slightly less than that
10 or slightly more than that if we're going up dip from the
11 vertical.

12 We will keep those holes within the
13 proper limits of the boundaries of the leases, such that
14 the deviated holes will not approach the boundaries from a
15 surveying standpoint, more than 300 and I think 30 feet
16 from the boundaries.

17 We also, as we have mentioned in our
18 other attempts for production through these techniques, will
19 be glad to have someone come from the State who wants to see
20 what we're doing and see the surveys on the site. We just
21 don't want to put them in for public record until we've com-
22 pleted the hole and are producing.

23 Q Dr. Lyons, in your opinion if this appli-
24 cation were to be approved, would it be in the best interest
25 of conservation and would it enhance the possibility of re-

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1 covery, if any?

2 A. Well, the whole technique is aimed at
3 enhanced recovery and from a conservation standpoint, we
4 believe that what we're aimed at in these techniques, the
5 development of these techniques, is to indeed provide a
6 better method for producing out of marginal zones, which
7 under present techniques are not producable.

8 Q. And in your opinion would it protect
9 the correlative rights and would not be an impairment to
10 the existing --

11 A. Yes, I believe there would be no problem
12 there, with regard to our techniques, I mean in that regard.

13 MR. BARBEROUSSE: I have no further
14 questions.

15
16 CROSS EXAMINATION

17 BY MR. STAMETS:

18 Q. Dr. Lyons, it does not appear that the
19 case was advertised to cover the Pictured Cliffs zone, but
20 only the Gallup and Dakota, and I'm wondering if you would
21 prefer to continue this case to allow us to re-advertise
22 for the Pictured Cliffs or to have us go ahead and enter
23 an order that would cover the Gallup and Dakota and then
24 have a subsequent case for the Pictured Cliffs, if that
25 proves necessary.

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1 A I think we can have a subsequent case,
2 I think. We're very hopeful that we'll complete in the
3 other two.

4 Q Okay. Now what acreage --

5 A That's a backup.

6 Q What acreage does Harlan control in the
7 immediate area of the well?

8 MR. BARBEROUSSE: Mr. Examiner, this --
9 I was to have an attorney who's a partner of Harlan's here
10 this morning from Farmington with surveys, copies of a lease,
11 and all that. He called me about 7:30 this morning and
12 said he was stranded and couldn't get into town.

13 I'd be happy to provide this information
14 to you, or have him send it to you. And if I could make a
15 supplemental tender, I'd be happy to do that.

16 MR. STAMETS: That will be fine.

17 Q Dr. Lyons, would it be safe to say that
18 Harlan controls enough of the acreage that there's no danger
19 of him getting off his acreage with these deviated holes?

20 A Yes, sir. I believe this is of the
21 order of well over 700 acres, I believe, is involved in this
22 farmout.

23 Q And the restrictions that were placed
24 in the earlier order for Harlan and the other attempt at
25 this will be satisfactory?

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1 A You bet, yes, of course.

2 MR. STAMETS: Are there any other ques-

3 tions of this witness?

4 Mr. Chavez?

5 MR. CHAVEZ: Dr. Lyons, did you say that

6 these drainholes will be going in opposite directions from

7 each other?

8 A That's right.

9 MR. CHAVEZ: And would they be going

10 north and south or east and west?

11 A That hasn't been determined yet. It's

12 actually to be determined from the geological report of the

13 formation itself, which way they are dipping, exactly which

14 direction.

15 Generally we'll try to feed along the

16 lines that will give us the greatest potential of inter-

17 cepting fractures, vertical fractures, in the bed. The

18 beds are basically bent through tectonics and what you're

19 trying to do is feed these laterals in through those -- those

20 fractures.

21 So that will be determined basically

22 by our coring that we'll do as we go through these forma-

23 tions, and the results of those cores.

24 Q Okay, do you see these drainholes as

25 drilled at the base of the producing formation or at the

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1 top or in the middle, or where?

2 A. We're going for gas it really doesn't
3 matter that much whether we go into the base or the center.
4 We probably would avoid the top.

5 If we're going for oil in a fairly
6 shallow configuration where the overburden is small for the
7 producing pressures, we'd probably take advantage of all
8 the gravity drainage we could get and probably put those
9 lateral holes at the bottom of the formation.

10 MR. CHAVEZ: Okay, what is the radius
11 of the turn, or is that proprietary?

12 A. That's proprietary.

13 MR. CHAVEZ: Okay, if a formation or if
14 the sand is thin such that a radius would have to intercept
15 an upper sand, say you only had a 20-foot sand but you had
16 a 60-foot radius on the turn, what would you do to protect
17 the -- that 40 feet of the separate formation above that
18 producing sand?

19 A. Protect in a sense that -- in the sense
20 of your production? You mean protect your production?

21 MR. CHAVEZ: Protect the upper formation
22 for -- say for example, if you had a 20-foot Gallup sand
23 overlain by some --

24 A. We can case.

25 MR. CHAVEZ: You can case through the

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1 other?

2 A. We can case.

3 MR. CHAVEZ: Okay. If you had two
4 drainholes, would you case both -- both holes at the kickoff?

5 A. It depends, no, it depends on the sand
6 itself. If the sand is a competent rock we'd probably open
7 hole and won't attempt to put casing in except soft casing
8 in the sense of going in with perforated pipe to simply keep
9 the sand from accumulating around it.

10 If we need to actually case a portion
11 of the radius, then we -- we have techniques to do that,
12 which are also proprietary, seal them off.

13 MR. CHAVEZ: Okay.

14 MR. STAMETS: Along this line, I presume,
15 Dr. Lyons, that you can keep our District Supervisor pretty
16 well --

17 A. Oh, yeah.

18 MR. STAMETS: -- apprised on this and --

19 A. Right.

20 MR. STAMETS: -- through your personal
21 communication.

22 A. Right.

23 MR. STAMETS: To satisfy him that you're
24 not causing any downhole problems.

25 A. No. That's -- we certainly intend to

1 do that.

2 MR. CHAVEZ: I have nothing further.

3 MR. STAMETS: Any other questions of
4 this witness? He may be excused.

5 Anything further in this case?

6 MR. BARBEROUSSE: Nothing further, Mr.
7 Examiner.

8 MR. STAMETS: The case will be taken
9 under advisement.

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11 (Hearing concluded.)
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REPORTER'S CERTIFICATE

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

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete report of the proceedings in the above hearing of Case No. 6802, heard by me on 1-30, 1980.
Richard P. Lamm, Examiner
Oil Conservation Division

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
30 January 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Harlan Drilling Com-
pany for drilling drainholes,
McKinley County, New Mexico.

CASE
6802

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

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Legal Counsel to the Division
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For the Applicant:

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I N D E X

DR. WILLIAM LYONS

Direct Examination by Mr. Barberousse	3
Cross Examination by Mr. Stamets	9
Questions by Mr. Chavez	11

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MR. STAMETS: We'll call at this time
Case 6002.

MR. PADILLA: Application of Harlan
Drilling Company for drilling drainholes, McKinley County,
New Mexico.

MR. BARBEROUSSE: Mr. Examiner, my name
is Bob Barberousse. I'm here representing Harlan Drilling
Company. I'm an attorney at law. My offices are at 320
Pasco de Peralta here in Santa Fe.

I would call at this time as a witness
Dr. William Lyons.

MR. STAMETS: I'd like to have Dr. Lyons
stand and be sworn, please.

(Witness sworn.)

DR. WILLIAM LYONS
being called as a witness and having been duly sworn upon
his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BARBEROUSSE:

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

A Dr. William C. Lyons.

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Q And --

A LeY-001-2, excuse me, just in case of confusion.

Q And where do you reside?

A In Santa Fe.

Q And by whom are you employed?

A I'm employed by RIFT Engineering and Drilling and by the New Mexico Institute of Mining and Technology.

Q Dr. Lyons, have you ever testified as an expert before this Commission before?

A Yes, I have.

MR. BARBEROUSSE: Would the Examiner like for me to go into Dr. Lyons' background?

MR. STAMETS: Just to refresh my memory, Dr. Lyons, you qualified as a petroleum engineer, is that correct?

A Yes, sir, I am a professor of petroleum engineering at New Mexico Tech.

MR. STAMETS: The witness is considered qualified.

Q Dr. Lyons, are you familiar with the application which has been filed by Harlan Drilling Company and which is the subject of Case Number 6802 before this Commission?

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A. Yes, I am.

Q. Could you explain to the Examiner the proposed application?

A. All right. This is a Gamout from Dome, a lease from Dome Petroleum. It's fee land, and the objective of this is basically a test well to test the lateral drilling and subsequent hole completion techniques on production of-- from basically three zones.

The first zone that will be attempted is the Gallup formation at approximately 3200 feet. This zone will be drilled to vertically; then two laterals will be drilled out of that opposite one another, 180 degrees apart; drilled approximately 200 feet from the main bore, and the well will be tested for increased production.

Prior to that, however, we'll test the zone in the vertical configuration before we drill the laterals to get a comparison of production.

If this particular configuration does not prove producible we'll go on to deeper, to 4200 feet, to the Dakota, case down to that level, again test that zone in the vertical configuration, then kick out two 180 degrees apart laterals, drill those laterals at about 200 feet apiece from the main bore, test it again, and if it does not produce -- is not producible economically, we'll move up the zone to a third zone, which would be the Pic-

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1 cased cliffs at 1800. We'll cement back up to that position,
2 cut windows in the casing, and again test the vertical con-
3 figuration and then go in and drill two laterals again, 180
4 degrees apart.

5 MR. SPENCER: You say that's 1800 feet?

6 A That's 1800 feet. That's the third
7 zone in that area.

8 The idea is to -- in particular to go
9 after the increased production that might be available through
10 the drilling of laterals and subsequent production tech-
11 niques, such as fracturing out of those lateral holes, and
12 to see if these zones, which hitherto have been basically
13 marginally producible, to see if we can improve the pro-
14 duction through these techniques that we're developing.

15 Q Dr. Lyons, do you anticipate that there
16 might be some fracing in these various zones?

17 A We may frac. We may -- we'll try to
18 probably produce out of these laterals without fracing, but
19 it's traditionally known that these zones need fracing often
20 out of a vertical configuration for -- for production, normal
21 production.

22 So we'll probably try the vertical hole
23 by itself, then drill the laterals, then test it, and if it's
24 still not producible commercially, we'll probably attempt to
25 frac it and then test it again, and then abandon it if it

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1 doesn't produce at that point, and go to the next zone.

2 But the well will basically be a test
3 well for the purpose of proving out techniques of production
4 from marginal zones.

5 Q Dr. Lyons, in the drilling of these
6 laterals, these deviated holes, is there a proprietary in-
7 terest involved in the use of the equipment?

8 A Yes, there is. The techniques that we
9 use, particularly in the drilling of the laterals, is a
10 proprietary technique and we'd like to guard those as best
11 we can. The techniques have been successful in our test
12 holes that we've done in and around the Farmington area, and
13 we are now in the process, as you've heard once before,
14 when we were up here before, that we're in the process of
15 now testing this in producing formations.

16 Q Would it be your intention to --- to keep
17 the Area Supervisor apprised of the various attempts and
18 progress that you experience?

19 A Yeah. I think that there will be no
20 problem in telling -- informing the State of what's going
21 on at each step, what we've done, what we've accomplished
22 or not accomplished. The only thing we'd like to do is
23 reserve the right to keep the actual well surveys and not
24 turn them in until after completion of the well, till after
25 actual production is underway, in that zone, in whatever

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1 now we eventually produce out of.

2 Q Dr. Lyons, the surface location of the
3 vertical are located where in relationship to the -- on the
4 property here?

5 A Well, we would keep any of the laterals,
6 the laterals will be so designed as to -- to stay in the
7 beds. The beds dip in this area, I think, about 10 degrees,
8 and we'll try to keep the laterals -- the laterals may not
9 be actually horizontal; they may be slightly less than that
10 or slightly more than that if we're going up dip from the
11 vertical.

12 We will keep those holes within the
13 proper limits of the boundaries of the leases, such that
14 the deviated holes will not approach the boundaries from a
15 surveying standpoint, more than 300 and I think 30 feet
16 from the boundaries.

17 We also, as we have mentioned in our
18 other attempts for production through these techniques, will
19 be glad to have someone come from the State who wants to see
20 what we're doing and see the surveys on the site. We just
21 don't want to put them in for public record until we've com-
22 pleted the hole and are producing.

23 Q Dr. Lyons, in your opinion if this appli-
24 cation were to be approved, would it be in the best interest
25 of conservation and would it enhance the possibility of re-

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1 covey, is any?

2 A Well, the whole technique is aimed at
3 enhanced recovery and from a conservation standpoint, we
4 believe that what we've aimed at in these techniques, the
5 development of these techniques, is to indeed provide a
6 better method for producing out of marginal zones, which
7 under present techniques are not producable.

8 Q And in your opinion would it protect
9 the correlative rights and would not be an impairment to
10 the existing --

11 A Yes, I believe there would be no problem
12 there, with regard to our techniques, I mean in that regard.

13 MR. BARBEROUSSE: I have no further
14 questions.

15
16 CROSS EXAMINATION

17 BY MR. STAMETS:

18 Q Dr. Lyons, it does not appear that the
19 case was advertised to cover the Pictured Cliffs zone, but
20 only the Gallup and Dakota, and I'm wondering if you would
21 prefer to continue this case to allow us to re-advertise
22 for the Pictured Cliffs or to have us go ahead and enter
23 an order that would cover the Gallup and Dakota and then
24 have a subsequent case for the Pictured Cliffs, if that
25 proves necessary.

1 A I think we can have a subsequent case,
2 I think. We're very careful that we'll complete in the
3 other two.

4 Q Okay. Now that acreage --

5 A That's a backup.

6 Q What acreage does Harlan control in the
7 immediate area of the well?

8 MR. HARREROUSSER: Mr. Examiner, this --
9 I was to have an attorney who's a partner of Harlan's here
10 this morning from Farmington with surveys, copies of a lease,
11 and all that. He called me about 7:30 this morning and
12 said he was stranded and couldn't get into town.

13 I'd be happy to provide this information
14 to you, or have him send it to you. And if I could make a
15 supplemental tender, I'd be happy to do that.

16 MR. STAMETS: That will be fine.

17 Q Dr. Lyons, would it be safe to say that
18 Harlan controls enough of the acreage that there's no danger
19 of him getting off his acreage with these deviated holes?

20 A Yes, sir. I believe this is of the
21 order of well over 700 acres, I believe, is involved in this
22 farmout.

23 Q And the restrictions that were placed
24 in the earlier order for Harlan and the other attempt at
25 this will be satisfactory?

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1 A. Yes, I'm sure, of course.

2 MR. STAMETS: Are there any other ques-
3 tions of this witness?

4 Mr. Chavez?

5 MR. CHAVEZ: Dr. Lyons, did you say that
6 these drainholes will be going in opposite directions from
7 each other?

8 A. That's right.

9 MR. CHAVEZ: And would they be going
10 north and south or east and west?

11 A. That hasn't been determined yet. It's
12 actually to be determined from the geological report of the
13 formation itself, which way they are dipping, exactly which
14 direction.

15 Generally we'll try to feed along the
16 lines that will give us the greatest potential of inter-
17 cepting fractures, vertical fractures, in the bed. The
18 beds are basically bent through tectonics and what you're
19 trying to do is feed these laterals in through those -- those
20 fractures.

21 So that will be determined basically
22 by our coring that we'll do as we go through these forma-
23 tions, and the results of those cores.

24 Q. Okay, do you see these drainholes as
25 drilled at the base of the producing formation or at the

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1 top or in the middle, or do we?

2 A. When going for gas it really doesn't
3 matter that much whether we go into the base or the center.
4 We probably would avoid the top.

5 If we're going for oil in a fairly
6 shallow configuration where the overburden is small for the
7 producing pressures, we'd probably take advantage of all
8 the gravity drainage we could get and probably put those
9 lateral holes at the bottom of the formation.

10 MR. CHAVEZ: Okay, what is the radius
11 of the turn, or is that proprietary?

12 A. That's proprietary.

13 MR. CHAVEZ: Okay, if a formation or if
14 the sand is thin such that a radius would have to intercept
15 an upper sand, say you only had a 20-foot sand but you had
16 a 60-foot radius on the turn, what would you do to protect
17 the -- that 40 feet of the separate formation above that
18 producing sand?

19 A. Protect in a sense that -- in the sense
20 of your production? You mean protect your production?

21 MR. CHAVEZ: Protect the upper formation
22 for -- say for example, if you had a 20-foot Gallup sand
23 overlain by some --

24 A. We can case.

25 MR. CHAVEZ: You can case through the

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1 other?

2 A. In some cases.

3 MR. STAMETS: Okay. If you had two
4 drainholes, would you open both -- both holes at the kickoff?

5 A. It depends, no, it depends on the sand
6 itself. If the sand is a consistent rock we'd probably open
7 hole and won't attempt to put casing in except soft casing
8 in the sense of going in with perforated pipe to simply keep
9 the sand from accumulating around it.

10 If we need to actually case a portion
11 of the radius, then we -- we have techniques to do that,
12 which are also proprietary, seal them off.

13 MR. CHAVEZ: Okay.

14 MR. STAMETS: Along this line, I presume,
15 Dr. Lyons, that you can keep our District Supervisor pretty
16 well --

17 A. Oh, yeah.

18 MR. STAMETS: -- apprised on this and --

19 A. Right.

20 MR. STAMETS: -- through your personal
21 communication.

22 A. Right.

23 MR. STAMETS: To satisfy him that you're
24 not causing any downhole problems.

25 A. No. That's -- we certainly intend to

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do that.

MR. GIBBS: I have nothing further.

MR. GIBBS: Any other questions of
this witness He has been asked.

Anything further in this case?

MR. BARNHART: Nothing further, Mr.
Examiner.

MR. GIBBS: The case will be taken
under advisement.

(Hearing concluded.)

REPORTER'S CERTIFICATE

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

I do hereby certify that the foregoing is a correct and true transcript of the proceedings in the above hearing of Case No. _____, heard by me on _____, 19____.

_____, Examiner
Oil Conservation Division

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dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 6802

Order No. R-7346

APPLICATION OF HARLAN DRILLING
COMPANY FOR DRILLING DRAINHOLES,
MCKINLEY COUNTY, NEW MEXICO.

JAR

gpa
with S.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 30
19 80, at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this _____ day of February, 1980, the
Division Director, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:


(1) That due public notice having been given as required
by law, the Division has jurisdiction of this cause and the
subject matter thereof.

(2) That the applicant, Harlan Drilling Company, seeks
authority to drill and case a vertical hole to an approximate

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Case No. 6802

Ord-r No. R-

depth of 3200 feet in the Gallup formation from a surface location 1930 feet from the South line and 678 feet from the East line of Section 13, Township 19 North, Range 6 West, _____
Foot, McKinley County, and to then drill two lateral drainholes therefrom, each to a distance of approximately 200 feet in the Gallup formation.

- (3) That at the conclusion of the case ~~some~~ supplemental information was ~~to have been submitted~~ requested.
- (4) That the supplemental information was not filed in the nearly ~~3~~ three years following the hearing and this case ~~should~~ ^{should have} be dismissed.

IT IS THEREFORE ORDERED

- (1) That Case No. 6802 is hereby dismissed.
- (2) Jurisdiction