

CASE 6738: HARLAN DRILLING COMPANY FOR
DRILLING DRAINHOLES, SAN JUAN COUNTY,
NEW MEXICO

Case No.

6938

Application

Transcripts.

Small Exhibits

ETC.

CASE 6714: (Continued and Readvertised)

Application of Jake L. Haron for an unorthodox gas well location and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Morrow test well to be drilled 660 feet from the South and West lines of Section 20, Township 20 South, Range 36 East, North Osado-Morrow Gas Pool; applicant further seeks a finding that the drilling of said well is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6738:

Application of Harlan Drilling Company for drilling drainholes, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill and case a vertical hole to an approximate depth of 1500 at the top of the Gallup formation from a surface location 990 feet from the North line and 990 feet from the West line of Section 1, Township 30 North, Range 16 West, Verde-Gallup Oil Pool, San Juan County, and to then drill four deviated drainholes therefrom, bottoming each of said holes in the Gallup at a vertical depth of 1700 feet and approximately 200 lateral distance from the vertical hole.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO
28 November 1979

EXAMINER HEARING

IN THE MATTER OF:

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

CASE
6738

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

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

For the Applicant:

Bob D. Barberousse, Esq.
320 Paseo de Peralta
Santa Fe, New Mexico 87501

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1 MR. STAMETS: We'll call next Case 6738.
2 MR. PADILLA: Application of Harlan Drilling
3 Company for drilling drainholes, San Juan County, New Mexico.
4 MR. BARBEROUSSE: Mr. Examiner, my name is
5 Bob Barberousse with the law firm of Barberousse and Yost,
6 here representing the applicant, and I have two witnesses.
7 MR. STAMETS: Any other appearances in this
8 case? I'd like to have the witnesses stand and be sworn,
9 please.
10
11 (Witnesses sworn.)
12
13 KENNETH E. HARLAN
14 being called as a witness and having been duly sworn upon his
15 oath, testified as follows, to-wit:
16
17 DIRECT EXAMINATION
18 BY MR. BARBEROUSSE:
19 Q For the record would you state your name,
20 please?
21 A Kenneth E. Harlan.
22 Q And where do you live, Mr. Harlan?
23 A Farmington, New Mexico.
24 Q And by whom are you employed?
25 A Harlan Drilling Company.

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1 Q What's your position with Harlan Drilling
2 Company?
3 A President.
4 Q Mr. Harlan, how long have you been involved
5 in the drilling and production of oil and gas?
6 A Thirty years, plus or minus.
7 Q Has the bulk of that been in the -- in the
8 area of drilling and in production?
9 A Right.
10 Q How long have you been president of Harlan
11 Drilling Company?
12 A About seven years; since it was formed.
13 MR. BARBEROUSSE: Mr. Examiner, I would
14 like to tender Mr. Harlan as a practical oil man for purposes
15 of this.
16 MR. STAMETS: The witness is considered so
17 qualified.
18 MR. BARBEROUSSE: Thank you.
19 Q Mr. Harlan, are you familiar with Case Num-
20 ber 6738?
21 A Yes, sir.
22 Q Would you explain to the Commission and the
23 Examiner the purpose of this application, please?
24 A The purpose is to see if we can gain some
25 oil from a more or less considered depleted zone, and we think

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1 by drilling drain holes we can -- we figure the formations
2 are fractured and we can go through those fractures with the
3 drain holes and may pick back up some oil. This was a
4 highly initial production and a quick drop-off area, and
5 apparently either the engineers made a mistake or else if they
6 didn't, we're trying to find out why.

7 Q Now, at the present time on the proposed
8 drilling site is there any production at this time?

9 A No.

10 Q How far in from the section lines do you
11 propose to come in with this vertical hole?

12 A At 990 and 990; 990 from the north and
13 990 from the west.

14 Q So there's no danger of encroaching upon
15 anyone else's --

16 A No, sir.

17 Q Would you say, Mr. Harlan, that this type
18 of drilling technique is somewhat experimental?

19 A It's all experimental.

20 Q And would you further state, or would it be
21 your testimony that this is -- this is a highly speculative
22 type operation?

23 A Very much so.

24 Q If in fact this permit was granted, due to
25 the nature of the experiment, would it be advantageous to

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1 withhold surveys of the lateral holes until such time as
2 production, if any, is sold, or for a period of one year, in
3 order to work out the details of this type of secondary re-
4 covery?

5 A It certainly would be because it's all an
6 experiment and if we're doing an experiment we should be able
7 to get that much study on it before information has to be
8 passed out.

9 Q Would you be willing to have a representa-
10 tive of the Oil Conservation Commission monitor these lateral
11 holes?

12 A Yes, sir. That would be no problem.

13 MR. BARBEROUSSE: I have no further questions
14 of Mr. Harlan, Mr. Examiner.

15 MR. STAMETS: Okay.

16
17 CROSS EXAMINATION

18 BY MR. STAMETS:

19 Q Mr. Harlan, this drilling is supposed to
20 take place in Section 1 of Township 30 North, Range 16 West,
21 in the northeast quarter. How much --

22 A Northwest quarter.

23 Q Northwest quarter? Okay, how much of that
24 section do you control, have under lease?

25 A Half of it.

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1 Q And which half is that?

2 A The northwest quarter and the southeast

3 quarter.

4 Q Okay, so across --

5 A Just straight across, yes, sir.

6 Q Okay, and the application here says that

7 the well will be drilled vertically to depth of 1500 feet.

8 A Yes, sir.

9 Q And then 200 feet out from that point. On

10 that basis, assuming that you did get a true vertical hole,

11 the closest you could get to an external lease line would be

12 790 feet, is that correct?

13 A Yes, sir.

14 Q And that's a legal location, as close as

15 330, so under that circumstance you should not be bothering

16 anybody else's acreage.

17 A That's right, we shouldn't.

18 Q I presume you have a witness that's going

19 to speak to the drilling of the well?

20 MR. BARBEROUSSE: Yes, I do.

21 MR. STAMETS: Okay. Any other questions

22 of Mr. Harlan? He may be excused, at least at this time.

23 MR. BARBEROUSSE: I call Dr. William Lyons.

24

25

DR. WILLIAM C. 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 William C. Lyons.

Q And where do you reside?

A Santa Fe, New Mexico.

Q And by whom are you employed?

A I'm employed by the New Mexico Institute of Mining Technology and also operate my own firm, Rift Engineering and Drilling, which I'm the president of.

Q Dr. Lyons, would you explain to the -- give to the Commission, the Examiner, your educational background, please?

A I hold a BS degree, Geological Engineering, from the University of Kansas, an MS in Engineering Mechanics, and a PhD in Engineering Mechanics. I'm a registered professional engineer in the State of New Mexico, Number 6329, and I've worked for Phillips Petroleum, Gibbons Drilling out of Hobbs and Lovington, and Los Alamos Scientific Laboratory, and I have teaching positions at Northwestern University,

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1 University of Kansas, and at New Mexico Tech.

2 MR. BARBEROUSSE: I would tender Dr. Lyons
3 background as an expert for purposes of this hearing.

4 MR. STAMETS: Mr. Lyons, Dr. Lyons, did
5 you indicate your background was in engineering?

6 A Yes.

7 MR. STAMETS: Okay, I missed that, I'm
8 sorry. I was making some notes on --

9 A Geological engineering, engineering me-
10 chanics.

11 MR. STAMETS: Very good. The witness is
12 considered qualified.

13 Q Dr. Lyons, would you explain to the Examiner
14 generally the procedure which is proposed, which is set forth
15 in Case Number 6738?

16 A Okay. Well, the philosophy, of course, is
17 this is an area that's had difficulty in production. It's
18 qualified basically, I think, as stripper oil, any production
19 out of there.

20 We believe that the production from the
21 Gallup formation is governed by vertical fractures that are
22 the result of the bending of the 170-foot, roughly, pay zone
23 of the Gallup over the hogback that's in that area, that
24 trends southwest to northeast.

25 Our philosophy of drilling is to attempt

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1 to place deviated holes, approximately four, out from the
2 vertical hole in such a way that they will intersect the
3 vertical fractures in order to promote drainage of the field.
4 There is some pressure there which will aid in the drainage
5 but most of the drainage will probably have to depend on
6 gravity.

7 Q The technique involved in this type of
8 drilling at this stage and for this particular project, Dr.
9 Lyons, would you classify this as being an experimental pro-
10 cedure?

11 A Yes. The technique is still under experi-
12 mentation. We've been working with it over the last almost
13 a year. It's been tested and this will be the first pro-
14 duction test of the technique. The tests have been quite
15 reliable but we still have a lot of bugs to work out as far
16 as the tool itself. The tool involves no chemicals or any-
17 thing of that nature being run in the ground. It's basically
18 a mechanical tool operating in much the same way as a normal
19 rotary drilling. The development has been carried out be-
20 tween New Mexico Tech Department of Petroleum and Mining En-
21 gineering, where I teach, and my company, with the backing of
22 people outside the state. All the work has been done in the
23 State of New Mexico, including the fabrication and production
24 of the tool.

25 Q Dr. Lyons, you heard my question to Mr.

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1 Harlan, but I would repeat it for the record, that due to the
2 nature, experimental nature of this drilling device, would
3 it be advantageous in protecting proprietary interest of ---
4 of this device, that any survey of the lateral holes be
5 withheld from the public record until such time as there
6 might be production, if any, in this area, or for a period
7 of up to one year?

8 A I feel this would be quite an advantage to
9 us, at least in safeguarding the tool itself, until we have
10 it ready to go into productive use for service -- as a ser-
11 vice organization.

12 MR. BARBEROUSSE: Mr. Examiner, I have no
13 further questions of this witness.

14
15 CROSS EXAMINATION

16 BY MR. STAMETS:

17 Q Dr. Lyons, what kind of a casing program
18 will be used to the kickoff point?

19 A We'll case clear to the top of the Gallup,
20 possibly down into the Gallup slightly, because the pay zone
21 seems to occur mostly at the bottom 70 feet of the 170-foot
22 or 140-foot pay section of the Gallup. We will likely set
23 surface casing, cemented in to about 100 feet, then go on
24 with intermediate casing clear to the -- to the top of the
25 Gallup. We will complete in the -- in the Gallup itself a

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1 6-3/4 inch hole. We will -- possibly we might go to a larger
2 borehole in that area and go with some kind of a fiberglass
3 casing in order to provide a means by which we can pressure
4 test each one of the laterals through a packer system, but
5 that has not been decided yet.

6 We may also even case the laterals, but
7 again, that's -- that depends upon our core analysis of that
8 section when we pull it out of the ground. If the rock is
9 competent enough, we may just stick with an open hole com-
10 pletion.

11 Q I presume you would be willing to survey
12 and submit a survey on the straight hole.

13 A Absolutely.

14 Q And I believe Mr. Harlan indicated that
15 we, the Division, could have witnesses there to determine
16 that the wellbore was not getting off Mr. Harlan's tract.

17 A Sure, absolutely.

18 Q It's not clear to me, Dr. Lyons, how the
19 survey of the borehole, the deviated borehole, could be
20 a threat in any way to proprietary information on this tool.

21 A Well, at present, to our knowledge, there
22 is no one in the world that can drill these holes like we
23 can drill them, and like we've shown we can drill them, and
24 we'd like to protect that knowledge for at least a year or
25 so, until we have a chance to get our patents through the

1 patent system, which is rather slow.

2 This would indicate --- indicating that
3 something can be done is half the -- half the job of an in-
4 vention. If you know it can be done, then someone will
5 find a way to duplicate it, as a rule.

6 Q Okay. If required, would you be willing
7 to show our personnel the deviation test and then hold them
8 for the year --

9 A Yes.

10 Q Where our people can be satisfied that --

11 A Yes.

12 Q -- that the wellbores are on track?

13 A Yes.

14 MR. STAMETS: Any other questions of Dr.
15 Lyons? He may be excused.

16 I've got just a couple of questions for
17 Mr. Harlan. You can stay right there, sir.

18 MR. HARLAN: All right.

19 MR. STAMETS: Is the royalty interest the
20 same throughout the northwest quarter of Section 1?

21 MR. HARLAN: Through the northwest quarter,
22 yes, sir.

23 MR. STAMETS: Okay, and would you describe
24 this Verde Gallup Field as being essentially a depleted or
25 stripper field?

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MR. HARLAN: It's fairly well depleted and
strippered. There is a few stripper wells left in it, I
think about three or four right now, operating now.

MR. STAMETS: Okay.

MR. HARLAN: But most of it is plugged
out.

MR. STAMETS: All right.

Any other questions? Anything further in
this case?

MR. BARBEROUSSE: Nothing further.

MR. STAMETS: This case will be taken under
advisement.

(Hearing concluded.)

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REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a Certified Shorthand Reporter,
DO HEREBY CERTIFY that the foregoing and attached 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 from my notes taken at the time of the hearing.

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Sally W. Boyd, C.S.R.

I do hereby certify that the foregoing is
a complete and correct transcript of the
hearing held on _____, 19____,
at _____, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO
28 November 1979

EXAMINER HEARING

IN THE MATTER OF:

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

CASE
6738

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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KENNETH E. HARLAN

Direct Examination by Mr. Barberousse 3

Cross Examination by Mr. Stamets 6

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QUESTIONS OF MR. HARLAN BY MR. STAMETS 13

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MR. STAMETS: We'll call next Case 6738.

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

MR. BARBEROUSSE: Mr. Examiner, my name is Bob Barberousse with the law firm of Barberousse and Yost, here representing the applicant, and I have two witnesses.

MR. STAMETS: Any other appearances in this case? I'd like to have the witnesses stand and be sworn, please.

(Witnesses sworn.)

KENNETH E. HARLAN

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

DIRECT EXAMINATION

BY MR. BARBEROUSSE:

Q. For the record would you state your name, please?

A. Kenneth E. Harlan.

Q. And where do you live, Mr. Harlan?

A. Farmington, New Mexico.

Q. And by whom are you employed?

A. Harlan Drilling Company.

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1 Q What's your position with Harlan Drilling
2 Company?
3 A President.
4 Q Mr. Harlan, how long have you been involved
5 in the drilling and production of oil and gas?
6 A Thirty years, plus or minus.
7 Q Has the bulk of that been in the -- in the
8 area of drilling and in production?
9 A Right.
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11 Drilling Company?
12 A About seven years; since it was formed.
13 MR. BARBEROUSSE: Mr. Examiner, I would
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15 of this.
16 MR. STAMETS: The witness is considered so
17 qualified.
18 MR. BARBEROUSSE: Thank you.
19 Q Mr. Harlan, are you familiar with Case Num-
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21 A Yes, sir.
22 Q Would you explain to the Commission and the
23 Examiner the purpose of this application, please?
24 A The purpose is to see if we can gain some
25 oil from a more or less considered depleted zone, and we think

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1 by drilling drain holes we can -- we figure the formations
2 are fractured and we can go through those fractures with the
3 drain holes and may pick back up some oil. This was a
4 highly initial production and a quick drop-off area, and
5 apparently either the engineers made a mistake or else if they
6 didn't, we're trying to find out why.

7 Q Now, at the present time on the proposed
8 drilling site is there any production at this time?

9 A No.

10 Q How far in from the section lines do you
11 propose to come in with this vertical hole?

12 A At 990 and 990; 990 from the north and
13 990 from the west.

14 Q So there's no danger of encroaching upon
15 anyone else's --

16 A No, sir.

17 Q Would you say, Mr. Harlan, that this type
18 of drilling technique is somewhat experimental?

19 A It's all experimental.

20 Q And would you further state, or would it be
21 your testimony that this is -- this is a highly speculative
22 type operation?

23 A Very much so.

24 Q If in fact this permit was granted, due to
25 the nature of the experiment, would it be advantageous to

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1 withhold surveys of the lateral holes until such time as
2 production, if any, is sold, or for a period of one year, in
3 order to work out the details of this type of secondary re-
4 covery?

5 A It certainly would be because it's all an
6 experiment and if we're doing an experiment we should be able
7 to get that much study on it before information has to be
8 passed out.

9 Q Would you be willing to have a representa-
10 tive of the Oil Conservation Commission monitor these lateral
11 holes?

12 A Yes, sir. That would be no problem.

13 MR. BARBEROUSSE: I have no further questions
14 of Mr. Harlan, Mr. Examiner.

15 MR. STAMETS: Okay.

16
17 CROSS EXAMINATION

18 BY MR. STAMETS:

19 Q Mr. Harlan, this drilling is supposed to
20 take place in Section 1 of Township 30 North, Range 16 West,
21 in the northeast quarter. How much --

22 A Northwest quarter.

23 Q Northwest quarter? Okay, how much of that
24 section do you control, have under lease?

25 A Half of it.

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1 Q And which half is that?

2 A The northwest quarter and the southeast

3 quarter.

4 Q Okay, so across --

5 A Just straight across, yes, sir.

6 Q Okay, and the application here says that

7 the well will be drilled vertically to depth of 1500 feet.

8 A Yes, sir.

9 Q And then 200 feet out from that point. On

10 that basis, assuming that you did get a true vertical hole,

11 the closest you could get to an external lease line would be

12 790 feet, is that correct?

13 A Yes, sir.

14 Q And that's a legal location, as close as

15 330, so under that circumstance you should not be bothering

16 anybody else's acreage.

17 A That's right, we shouldn't.

18 Q I presume you have a witness that's going

19 to speak to the drilling of the well?

20 MR. BARBEROUSSE: Yes, I do.

21 MR. STAMETS: Okay. Any other questions

22 of Mr. Harlan? He may be excused, at least at this time.

23 MR. BARBEROUSSE: I call Dr. William Lyons.

24

25

1 DR. WILLIAM C. LYONS

2 being called as a witness and having been duly sworn upon his
3 oath, testified as follows, to-wit:

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5 DIRECT EXAMINATION

6 BY MR. BARBEROUSSE:

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

9 A William C. Lyons.

10 Q And where do you reside?

11 A Santa Fe, New Mexico.

12 Q And by whom are you employed?

13 A I'm employed by the New Mexico Institute
14 of Mining Technology and also operate my own firm, Rift En-
15 gineering and Drilling, which I'm the president of.

16 Q Dr. Lyons, would you explain to the -- give
17 to the Commission, the Examiner, your educational background,
18 please?

19 A I hold a BS degree, Geological Engineering,
20 from the University of Kansas, an MS in Engineering Mechanics,
21 and a Phd in Engineering Mechanics. I'm a registered pro-
22 fessional engineer in the State of New Mexico, Number 6329,
23 and I've worked for Phillips Petroleum, Gibbons Drilling out
24 of Hobbs and Lovington, and Los Alamos Scientific Laboratory,
25 and I have teaching positions at Northwestern University,

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1 University of Kansas, and at New Mexico Tech.

2 MR. BARBEROUSSE: I would tender Dr. Lyons
3 background as an expert for purposes of this hearing.

4 MR. STAMETS: Mr. Lyons, Dr. Lyons, did
5 you indicate your background was in engineering?

6 A. Yes.

7 MR. STAMETS: Okay, I missed that, I'm
8 sorry. I was making some notes on --

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12 considered qualified.

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14 generally the procedure which is proposed, which is set forth
15 in Case Number 6738?

16 A. Okay. Well, the philosophy, of course, is
17 this is an area that's had difficulty in production. It's
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19 out of there.

20 We believe that the production from the
21 Gallup formation is governed by vertical fractures that are
22 the result of the bending of the 170-foot, roughly, pay zone
23 of the Gallup over the hogback that's in that area, that
24 trends southwest to northeast.

25 Our philosophy of drilling is to attempt

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1 to place deviated holes, approximately four, out from the
2 vertical hole in such a way that they will intersect the
3 vertical fractures in order to promote drainage of the field.
4 There is some pressure there which will aid in the drainage
5 but most of the drainage will probably have to depend on
6 gravity.

7 Q The technique involved in this type of
8 drilling at this stage and for this particular project, Dr.
9 Lyons, would you classify this as being an experimental pro-
10 cedure?

11 A Yes. The technique is still under experi-
12 mentation. We've been working with it over the last almost
13 a year. It's been tested and this will be the first pro-
14 duction test of the technique. The tests have been quite
15 reliable but we still have a lot of bugs to work out as far
16 as the tool itself. The tool involves no chemicals or any-
17 thing of that nature being run in the ground. It's basically
18 a mechanical tool operating in much the same way as a normal
19 rotary drilling. The development has been carried out be-
20 tween New Mexico Tech Department of Petroleum and Mining En-
21 gineering, where I teach, and my company, with the backing of
22 people outside the state. All the work has been done in the
23 State of New Mexico, including the fabrication and production
24 of the tool.

25 Q Dr. Lyons, you heard my question to Mr.

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1 Harlan, but I would repeat it for the record, that due to the
2 nature, experimental nature of this drilling device, would
3 it be advantageous in protecting proprietary interest of --
4 of this device, that any survey of the lateral holes be
5 withheld from the public record until such time as there
6 might be production, if any, in this area, or for a period
7 of up to one year?

8 A I feel this would be quite an advantage to
9 us, at least in safeguarding the tool itself, until we have
10 it ready to go into productive use for service -- as a ser-
11 vice organization.

12 MR. BARBEROUSSE: Mr. Examiner, I have no
13 further questions of this witness.

14
15 CROSS EXAMINATION

16 BY MR. STAMETS:

17 Q Dr. Lyons, what kind of a casing program
18 will be used to the kickoff point?

19 A We'll case clear to the top of the Gallup,
20 possibly down into the Gallup slightly, because the pay zone
21 seems to occur mostly at the bottom 70 feet of the 170-foot
22 or 140-foot pay section of the Gallup. We will likely set
23 surface casing, cemented in to about 100 feet, then go on
24 with intermediate casing clear to the -- to the top of the
25 Gallup. We will complete in the -- in the Gallup itself a

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1 6-3/4 inch hole. We will -- possibly we might go to a larger
2 borehole in that area and go with some kind of a fiberglass
3 casing in order to provide a means by which we can pressure
4 test each one of the laterals through a packer system, but
5 that has not been decided yet.

6 We may also even case the laterals, but
7 again, that's -- that depends upon our core analysis of that
8 section when we pull it out of the ground. If the rock is
9 competent enough, we may just stick with an open hole com-
10 pletion.

11 Q I presume you would be willing to survey
12 and submit a survey on the straight hole.

13 A Absolutely.

14 Q And I believe Mr. Harlan indicated that
15 we, the Division, could have witnesses there to determine
16 that the wellbore was not getting off Mr. Harlan's tract.

17 A Sure, absolutely.

18 Q It's not clear to me, Dr. Lyons, how the
19 survey of the borehole, the deviated borehole, could be
20 a threat in any way to proprietary information on this tool.

21 A Well, at present, to our knowledge, there
22 is no one in the world that can drill these holes like we
23 can drill them, and like we've shown we can drill them, and
24 we'd like to protect that knowledge for at least a year or
25 so, until we have a chance to get our patents through the

1 patent system, which is rather slow.

2 This would indicate -- indicating that
3 something can be done is half the -- half the job of an in-
4 vention. If you know it can be done, then someone will
5 find a way to duplicate it, as a rule.

6 Q Okay. If required, would you be willing
7 to show our personnel the deviation test and then hold them
8 for the year --

9 A Yes.

10 Q Where our people can be satisfied that --

11 A Yes.

12 Q -- that the wellbores are on track?

13 A Yes.

14 MR. STAMETS: Any other questions of Dr.
15 Lyons? He may be excused.

16 I've got just a couple of questions for
17 Mr. Harlan. You can stay right there, sir.

18 MR. HARLAN: All right.

19 MR. STAMETS: Is the royalty interest the
20 same throughout the northwest quarter of Section 1?

21 MR. HARLAN: Through the northwest quarter,
22 yes, sir.

23 MR. STAMETS: Okay, and would you describe
24 this Verde Gallup Field as being essentially a depleted or
25 stripper field?

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1 MR. HARLAN: It's fairly well depleted and
2 stripped. There is a few stripper wells left in it, I
3 think about three or four right now, operating now.
4 MR. STAMETS: Okay.
5 MR. HARLAN: But most of it is plugged
6 out.
7 MR. STAMETS: All right.
8 Any other questions? Anything further in
9 this case?
10 MR. BARBEROUSSE: Nothing further.
11 MR. STAMETS: This case will be taken under
12 advisement.
13
14 (Hearing concluded.)
15
16
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18
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22
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25

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a Certified Shorthand Reporter,
DO HEREBY CERTIFY that the foregoing and attached 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 from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.
Sally W. Boyd, C.S.R.

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3030 Plaza Blanca (SOS) 471-2462
Santa Fe, New Mexico 87501

I do hereby certify that the foregoing is
a correct and true transcript of the
hearing held on 4-28-79 at 6738
Richard L. Hamblin, Examiner
Oil Conservation Division

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. 6738
Order No. R-6206

APPLICATION OF HARLAN DRILLING COMPANY
TO DRILL HORIZONTAL DRAINHOLES, SAN
JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 21st day of December, 1979, 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 1500 at the top of the Gallup formation from a surface location 990 feet from the North line and 990 feet from the West line of Section 1, Township 30 North, Range 16 West, Verde-Gallup Oil Pool, San Juan County, and to then drill four deviated drainholes therefrom, bottoming each of said holes in the Gallup at a vertical depth of 1700 feet and approximately 200 lateral distance from the vertical hole.

(3) That the applicant should constantly monitor the pitch and direction of the drainholes as they are being drilled, and should file with the Division a final report specifying in said report the depth and location of the terminus of the drainholes.

-2-

Case No. 6738

Order No. R-6206

(4) That to protect proprietary information relative to the experimental tools and techniques to be utilized in the drilling of the four drainholes the applicant should not be required to submit the final report until one year after the date of completion of the subject well.

(5) That before an allowable should be assigned to the proposed well, the applicant should be able to demonstrate to the satisfaction of the Supervisor of the Division's district office at Aztec that none of the bottom hole locations of any of the drainholes is closer than 330 feet to the outer boundary of the NW/4 of said Section 1.

(6) That the proposed drainholes, if successfully completed as proposed, should make possible the production of an increased volume of oil from the subject well, thereby preventing waste, will not impair but will protect correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harlan Drilling Company, is hereby authorized to drill and case a vertical hole to an approximate depth of 1500 at the top of the Gallup formation from a surface location 990 feet from the North line and 990 feet from the West line of Section 1, Township 30 North, Range 16 West, Verde-Gallup Oil Pool, San Juan County, and to then drill four deviated drainholes therefrom, bottoming each of said holes in the Gallup at a vertical depth of 1700 feet and approximately 200 lateral distance from the vertical hole.

(2) That the applicant shall constantly monitor the pitch and direction of the drainholes as they are being drilled, and shall file a report, within one year after the date of completion, specifying therein the depth and locations of the terminus of each of the drainholes.

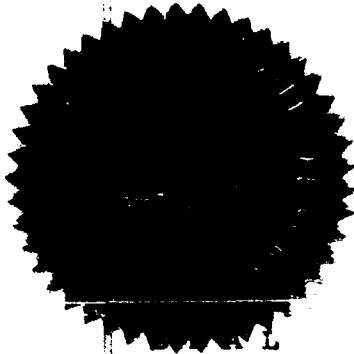
(3) That before an allowable shall be assigned to the proposed well, the applicant must demonstrate to the satisfaction of the Supervisor of the Division's district office at Aztec that none of the bottom hole locations of any of the drainholes is closer than 330 feet to the outer boundary of the NW/4 of said Section 1.

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

-3-

Case No. 6738
Order No. R-6206

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Joe D. Ramey
JOE D. RAMEY
Director

fd/



BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

December 31, 1979

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Mr. Bob D. Barberousse
Yost, Barberousse & Yost
Attorneys at Law
320 Paseo de Peralta
Santa Fe, New Mexico

Re: CASE NO. 6738
ORDER NO. R-6206

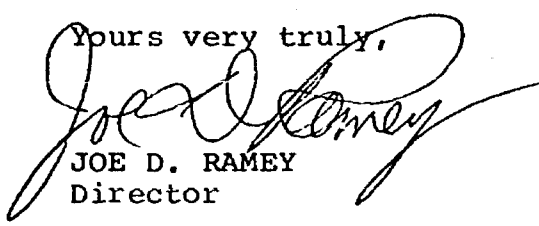
Applicant:

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 _____

Application of Hartman Drilling Co.
for drilling drainholes, San
Juan County, New Mexico

Applicant in the above styled Cause seeks
authority to drill, ^{and case} a vertical well to an
approximate depth of 1500 at the top of
the Gallup formation from a surface
location 520 feet from the North line and
660 feet from the West line of Section 1
Township 30 North, Range 16 West Verde Gallup
Oil Pool, San Juan County, and to
then drill four deviated drainholes
therefrom, ^{each of} bottoming said holes in the
Gallup at a vertical depth of 1700 feet
and approximately 200 lateral distance
from the vertical well.

November 1, 1979

Harlan Drilling Co.
P. O. Box ~~1367~~ 2183
Farmington 87401

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



Case 6738

Subject: Request for Permission to drill deviated boreholes
in an Oil Production Well in the Gallup Formation
(oil), Indian Lease, N00-C-5337, Indian Allocated
Land, Location Section 1, Township 30 North, Range
16 West, Northwest Quarter.

NW/4 NW/4

Dear Sir:

720 FNL 660 FNL

It is the desire of the Harlan Drilling Company to drill a vertical to the Verde Gallup Formation at the location described above. Estimated total depth (TD) for the vertical borehole is about 1,700 feet. In addition to the vertical hole, we will drill up to four deviated holes (deviated from the vertical bore). These deviated holes will be so drilled as to provide additional drainage for the well and thereby enhance oil recovery for the well. The four deviated holes will be drilled in such a manner that the total depth (TD) of each will be approximately 200 horizontal feet from the TD of the main vertical bore. The vertical well will be drilled in the center of one of the 40 acre tract in the 160 acre quarter described above. The projected TD's of each of the deviated boreholes will not be closer than 330 feet to the lease boundaries. The reason for this drilling pattern is to provide a borehole geometry which might promote better oil production from this particular part of the Gallup formation.

The vertical borehole will be spudded to a depth of nearly 600 feet with a 17 inch borehole. This initial 600 feet will be cased and cemented. Casing will be 13 3/8" No. 48. The well will be drilled from about 600 feet to the top of the Gallup Formation (about 1500 feet). This portion of the well will be a 9 7/8 inch borehole and cased and cemented with a 7 5/8 inch No. 20 casing.

The payzone in the Gallup Formation will be drilled to provide a 6 3/4 inch borehole. The deviated boreholes will not be cased. The vertical borehole in the Gallup will be completed in the normal manner.

RECEIVED
NOV 1 1979
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SANTA FE, NEW MEXICO

Mr. Joseph Ramey
November 1, 1979
Page Two (2)

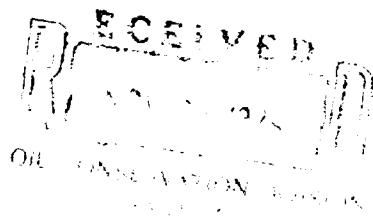
Harlan Drilling Company requests that our request to drill there deviated boreholes in the above described production will be placed on the November 28th, 1979 agenda of the meeting of the New Mexico Oil & Gas Commission to take place in Santa Fe.

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

Sincerely,

Kenneth Harlan

Kenneth Harlan
President



Harlan Drilling Company

P.O. BOX 1367
FARMINGTON, NEW MEXICO 87401



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

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. 6572 6738
Order No. R-6044 R-6206

APPLICATION OF ~~ARCO OIL AND GAS~~
COMPANY TO DRILL ~~HORIZONTAL~~
DRAINHOLES, ~~BOOY~~ COUNTY, NEW MEXICO.

San Juan

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on ~~June 13, 1979~~, *November 28, 1979*,
at Santa Fe, New Mexico, before Examiner ~~Daniel S. Nutter~~. *R25*

NOW, on this ~~26th~~ day of June, 1979, 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, ~~ARCO Oil and Gas Company~~, *Harlan Drilling Co*, seeks
~~Applicant, in the above styled cause, seeks~~ authority to drill and case a vertical hole to an
approximate depth of 1500 at the top of the Gallup formation from a surface location 990 feet from
the North line and 990 feet from the West line of Section 1, Township 30 North, Range 16 West,
Verde-Gallup Oil Pool, San Juan County, and to then drill four deviated drainholes therefrom,
bottoming each of said holes in the Gallup at a vertical depth of 1700 feet and approximately 200
lateral distance from the vertical hole.

~~hole of about 200 feet in~~

(3) That the applicant proposes to vertically drill said
well through the Abo Reef in a conventional manner, set casing
below the gas-oil contact, and by means of a specially constructed
whipstock and knuckle-joint drill collars, turn said well in a
southeasterly direction at the rate of approximately 5 degrees
per foot, continuing such drilling until horizontal, and then
drill in a southeasterly direction to complete the drainhole
some 200 feet South and East of the kick-off point.

(3)(a) That the applicant should constantly monitor the pitch
and direction of the drainhole, ~~as it is~~ *they are* being drilled, and

should file with the Division a final report ~~of drilling upon~~
~~completion thereof~~, specifying in said report the depth and
location of the terminus of the drainholes.

(4) That to protect proprietary information relative to the ~~the~~ experimental tools and techniques to be utilized in the drilling of the four drainholes the applicant should not be required to submit the final report until one year after the ~~completion~~ date of completion of the subject well.

(5) That before an allowable should be ~~assigned to~~ ~~issued~~ the proposed well, the applicant should be able to demonstrate to the satisfaction of the Supervisor of the Division's district office at Artes that ~~the~~ none ~~location~~ of the bottom of ~~the~~ hole locations of any of the drainholes is closer than 330 feet to the outer boundary of the NW 1/4 of said Section 1.

(6) That the proposed drainhole^s, if successfully completed as proposed, should make possible the production of an increased volume of oil from the subject well ~~without coning of gas into the wellbore~~, thereby preventing waste, will not impair but will protect correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harlan Drilling Company is hereby authorized

to drill and case a vertical hole to an approximate depth of 1500 at the top of the Gallup formation from a surface location 990 feet from the North line and 990 feet from the West line of Section 1, Township 30 North, Range 16 West, Verde-Gallup Oil Pool, San Juan County, and to then drill four deviated drainholes therefrom, bottoming each of said holes in the Gallup at a vertical depth of 1700 feet and approximately 200 lateral distance from the vertical hole.

within one
year after
the date of
completion

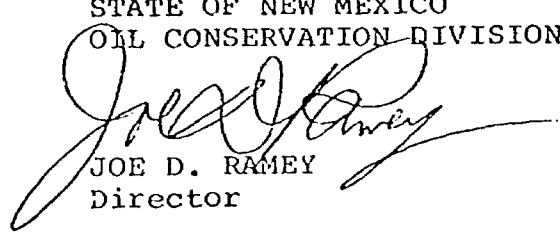
(2) That the applicant shall constantly monitor the pitch and direction of the drainholes as ~~they are~~ being drilled, and shall file a report, ~~of drilling upon completion thereof~~, specifying ~~in said report~~ the depth and locations of the terminus of the drainholes.

(3) ~~That~~ before an allowable shall ~~be~~ be assigned to the proposed well, the applicant ~~must~~ ~~should be able to demonstrate to the~~ satisfaction of the Supervisor of the Division's district office at Aztec that ~~the~~ none ~~of~~ of the bottom of ~~the~~ hole locations of any of the drainholes is closer than 330 feet to the outer boundary of the NW 1/4 of said Section 1.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L

fd/