

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

20 August 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Geo Engineering, Inc.	CASE
for exceptions to Division General	8974
Rules 104(F) and 104(C) (I),	8932
McKinley County, New Mexico.	8933

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:	Jeff Taylor Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
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For the Applicant:	Scott Hall Attorney at Law CAMPBELL & BLACK P.A. P. O. Box 2208 Santa Fe, New Mexico. 87501
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MR. CATANACH: This hearing will come to order.

We'll call next Case 8974.

MR. TAYLOR: The application of GeoEngineering, Incorporated, for exceptions to Division General Rules 104(F) and 104(C) 1, McKinley County, New Mexico.

MR. CATANACH: Are there appearances in this case?

MR. HALL: Mr. Examiner, my name is Scott Hall from the Campbell and Black law firm of Santa Fe.

The applicant is also bringing today Cases 8932 and 8933.

We would request that these be consolidated for hearing today.

MR. CATANACH: At the request of the applicant we'll now call Case 8932 and 8933.

MR. TAYLOR: Those are the same thing so they are called.

MR. CATANACH: All right.

MR. HALL: I have two witnesses to be sworn.

MR. CATANACH: Are there other

1 appearances in this case?

2 MR. STOCKTON: Mr. Examiner, my
3 name is Bruce Stockton with the State Land Office. Dr. Sabo
4 and I are here on behalf of the Land Office.

5 MR. DEHIYA: Mr. Examiner, my
6 name is Alfred Dehiya. I'm representing the Navajo Tribe in
7 Window Rock, Arizona.

8 MR. CATANACH: How do you spell
9 your last name, sir?

10 MR. DEHIYA: D-E-H-I-Y-A.

11 MR. TAYLOR: Alfred, would you
12 tell us your title with the tribe?

13 MR. DEHIYA: I'm the Deputy Di-
14 rector for the Navajo Division of Resources.

15 MR. TAYLOR: Do you have any
16 other tribal officials that we should get in the record as
17 far as their name and title?

18 MR. DEHIYA: I've got with me
19 --

20 MR. TAYLOR: I'll bet you have
21 the Land Office, don't you?

22 MR. DEHIYA: Yes, Melvin
23 Bautista. He's the Director for the Office of Navajo Land
24 Administration.

25 MR. TAYLOR: Melvin?

1 MR. DEHIYA: Bautista, B-A-U-T-
2 I-S-T-A.

3 And Arlene Luther, Environment-
4 alist with the Office of Environmental Protection.

5 Allen Nez, Landman with the Of-
6 fice of Land Administration.

7 Albert Deschine, Title Examiner
8 of our office, Land Administration.

9 And then Kenneth Yazzie, Tribal
10 Ranches Program.

11 MR. TAYLOR: Where's Jerry All-
12 wood?

13 MR. DEHIYA: He's --

14 MR. TAYLOR: Vacation?

15 Okay, and we'll have them ap-
16 pearing as officials of the Tribe rather than through an at-
17 torney.

18 MR. CATANACH: Do we need to
19 swear any of your people in? Are they going to testify?

20 MR. DEHIYA: No, I'll be the
21 one making the -- presenting the statement from the Tribe.

22 MR. CATANACH: All right.

23 Will all the witnesses please
24 stand and be sworn in at this time?

25 MR. TAYLOR: You guys, I as-

1 sume, just want to make a statement or just want to appear?

2

3

(Witnesses sworn.)

4

5

JAMES LAW,

6

being called as a witness and being duly sworn upon his

7

oath, testified as follows, to-wit:

8

9

DIRECT EXAMINATION

10

BY MR. HALL:

11

Q

For the record please state your name.

12

A

James W. Law.

13

Q

And where do you live?

14

A

1303 Calle Giraso, Santa Fe.

15

Q

By whom are you employed and in what
16 position?

17

A

I'm Vice President with Geo Engineering,
18 Inc.

19

Q

And, Mr. Law, have you previously testi-
20 fied before the Division and had your credentials accepted?

21

A

Yes, sir, I have.

22

Q

Okay. What is it that -- are you
23 familiar with the lands and the subject application?

24

A

Yes, I am.

25

Q

What is it that Geo Engineering is seek-

1 ing by this application?

2 A Geo Engineering is seeking a change in
3 the spacing requirement, well spacing requirement for the
4 lands in question to a denser spacing of five acres per
5 well.

6 Q Okay. What is the present spacing out
7 there?

8 A Well, it's 40 acres but 4 wells per 40.

9 Q Okay. Do you have another witness who
10 will testify on the geologic characteristics of the --

11 A Yes --

12 Q -- subject land?

13 A -- sir, Mr. Woods will testify.

14 Q Okay. What formation are you presently
15 producing from?

16 A From the Menefee.

17 Q Okay.

18 A Various sand lenses in the Menefee.

19 Q What is the present development program
20 on those lands?

21 A At the current -- at present we are in
22 the process of a waterflood in Section 28 and the Section
23 30, a development drilling program. We have plans for addi-
24 tional development drilling in Section 28 and in Section 30.

25 Q All right, do you intend to implement

1 other waterfloods on Section 32?

2 A As time goes on and we gain more informa-
3 tion and are able to get the proper studies and permits.

4 Q And that will be by separate application.

5 A Yes, sir.

6 Q All right. I'd like for you to refer to
7 what's been marked as Exhibit One and explain what that is
8 to reflect to the Examiner.

9 A Isn't that it up there?

10 Q Yes.

11 A Okay, let me see. Exhibit One, the heavy
12 dotted line indicates the acreage under lease by Geo
13 Engineering.

14 Q I'm sorry, let me interrupt you. Exhibit
15 One is the surface plat.

16 A Oh, okay. Exhibit One shows in yellow
17 the outline of lands under lease to Geo Engineering. It
18 shows the location of the injection wells that are currently
19 permitted and it shows the ownership of the surrounding
20 lands.

21 Q All right. Does it happen to show the
22 water source for the waterflood?

23 A No, it's not on that.

24 Q Okay. Let's look at Exhibit Two, if you
25 would, and explain what that is intended to reflect.

1 A Okay. Exhibit Two is a schematic diagram
2 which would indicate the probable well placement on five ac-
3 re spacing.

4 Q Okay, and you have those for proposed lo-
5 cations --

6 A Yes.

7 Q -- within a 40-acre tract.

8 A Uh-huh.

9 Q All right.

10 A Right.

11 Q Let's look at Exhibit Three, now, that's
12 the large one.

13 A Okay.

14 Q What does Exhibit Three show?

15 A Again we have outlined in a -- this time
16 in a dotted line the acreage which is under lease to Geo
17 Engineering.

18 We also show with a solid line the esti-
19 mated productive limits of four different areas within this
20 acreage and all of the current wells are plotted on the --
21 on this map, and at the base of the map is a idealized cross
22 section which shows the number of producing horizons and
23 their depths under each pool.

24 Q Why was it necessary that these be ideal-
25 ized cross sections?

1 A These reservoirs are quite complex.
2 We're dealing with deltaic or river deposits that meander.
3 We're not quite sure, even with the well spacing we have,
4 where the productive limits are. It was necessary to ideal-
5 ize the cross section because it's very difficult to corre-
6 late across these pools.

7 Q Okay. So you weren't able to correlate
8 any continuity across --

9 A Well, some places you think you can and
10 some places you're not sure.

11 Q Okay. Now from the operations that Geo
12 had conducted on these lands, what geologic and engineering
13 information have those operations yielded, generally?

14 A Well, generally speaking, of course, we
15 have all of the normal geology as acquired from well logs
16 numerous core analyses, and our own interpretations.

17 We have, as I mentioned, quite a number
18 of core analyses and visual core examinations which show us
19 average porosities, permeabilities, and fluid saturations.

20 Q Okay. Do you have those available?

21 A I can give you ranges. There are many
22 different reservoirs involved here and there are ranges that
23 I could encompass all of them with, if that would be
24 suitable.

25 Q Why don't we do that. How many, let me

1 ask you, how many reservoirs have you identified?

2 A Eight.

3 Q Okay.

4 A There may be more. The permeabilities
5 that we have measured range from 20 to 375 millidarcies.

6 Porosities range from 19 to 26-1/2 per-
7 cent and oil viscosity is very near to one in all of the
8 reservoirs.

9 Q All right, these ranges you give me, are
10 they for any particular reservoir or are they for all eight
11 reservoirs?

12 A They cover all eight reservoirs.

13 Q Okay. Let me ask you, why are the
14 present spacing and location requirements unsatisfactory?

15 A Due to the nature of the deposition in
16 this area in the Menefee, we evidently have numerous sand
17 lenses of varying thickness that come and go fairly rapidly.
18 In other words, between two wells 330 feet apart we can com-
19 pletely lose one sand and pick up two more sand members. We
20 simply cannot define the reservoir limits and which I be-
21 lieve are necessary in order to make proper determinations
22 for secondary recovery operations without this information.

23 From a primary oil recovery standpoint
24 this is not an economical property. We have to use enhanced
25 recovery in order to make this a viable project.

1 Q All right. Is there any substantial re-
2 servoir energy and --

3 A No.

4 Q Okay. You've mentioned that 330 feet is
5 probably insufficient. What do you anticipate the actual
6 drainage to be for any given well?

7 A It's very difficult to calculate. All I
8 can do is estimate and I would hesitate to say on primary
9 that these wells would drain over one acre.

10 Q Okay.

11 A There's simply no gas in solution.

12 Q All right. Is it your opinion, then,
13 that the reservoirs cannot be adequately drained on the
14 present spacing requirements?

15 A Yes.

16 Q All right. Is there any danger of drain-
17 age across the lease boundary lines with the spacing at 165
18 feet off the lease boundary lines?

19 A None whatsoever.

20 Q Okay. What do you propose to be a
21 reasonable spacing restriction for future wells?

22 A Five acres.

23 Q Would it be acceptable to have wells lo-
24 cated no closer than 10 feet to the quarter quarter sec-
25 tions?

- 1 A Yes.
- 2 Q And no closer than 165 feet to the lease
3 boundaries?
- 4 A Yes.
- 5 Q Okay. How many wells would this allow to
6 be appropriate on quarter quarters?
- 7 A This would -- that would be eight wells.
- 8 Q Are there any other offset operators in
9 the pool? Let me rephrase it.
- 10 Are there other operators in these pools
11 or the subject lands and --
- 12 A No.
- 13 Q Okay. Are you aware of any objections to
14 this application?
- 15 A No.
- 16 Q Can you estimate the percentage of other-
17 wise recoverable oil that would be lost if the application
18 were not granted?
- 19 A Assuming a total recovery under flood at
20 40 percent, the differential would be 37-1/2 to 80 percent,
21 which, if I may add, comes to a total of 1,150,000 barrels,
22 approximately, of additional oils that would be recovered
23 under flood.
- 24 Q Okay. Or conversely left in the ground.
- 25 A True.

1 Q All right. What is the basis of those
2 figures you've just alluded to? Well, let me ask you, did
3 you prepare some calculations?

4 A Yes, I did.

5 Q Are those shown on Exhibit Five?

6 A Yes, sir, they are.

7 Q Why don't you just briefly review those
8 for the Examiner?

9 A All right. What we have here is for each
10 separate productive outline that's shown on the map here, we
11 have an acre foot calculation based on core analysis and
12 electric logs combined with porosities and fluid saturations
13 based upon core analysis and electric logs, and using a to-
14 tal under flood recovery factor of 40 percent we have ar-
15 rived at the barrels of oil that are reflected on this exhi-
16 bit.

17 Q Okay. In your opinion would a drilling
18 program operated upon the terms reflected in the applica-
19 tions for these lands impair correlative rights?

20 A No.

21 Q Okay. Would the granting of this appli-
22 cation permit waste by lifting otherwise unrecoverable oil?

23 A You mean prevent waste?

24 Q Yes.

25 A Yes, it would.

1 Q Generally, will granting this application
2 be in the interest of conservation, the prevention of waste,
3 and protection of correlative rights?

4 A Yes, sir.

5 Q Were Exhibits One through Five prepared
6 by you or at your direction?

7 A Yes, they were.

8 Q Let me ask you, I believe I neglected to
9 ask you about Exhibit Four. If you'd refer to those, does
10 Exhibit Four appear to be the notice provided to all offset
11 operators?

12 A Yes, sir.

13 Q Okay.

14 MR. HALL: At this point we'd
15 tender Exhibits One through Five.

16 MR. CATANACH: Exhibits One
17 through Five will be admitted into evidence.

18 MR. HALL: That concludes my
19 direct of this witness.

20 MR. CATANACH: Mr Dehiya, do
21 you have any questions of the witness?

22 MR. DEHIYA: Just one, Mr. Exa-
23 miner, directed to the question raised, did he know of or
24 was aware of any objections from any interest holder in the
25 area, either by correspondence or telephone call there were

1 questions on the operation.

2 MR. HALL: I'm not sure I
3 understand that question.

4 MR. CATANACH: Mr. Dehiya, why
5 don't you direct your question directly to Mr. Law?

6

7 QUESTIONS BY MR. DEHIYA

8 Q You mentioned that you were unaware of
9 any objection from either the Tribe or any of the people in
10 the area.

11 They had been out there and (not clearly
12 understood) the actual concerns of the operation.

13 A What concerns?

14 Q (Inaudible) contamination and so forth.

15 MR. HALL: Well, let me object.
16 I believe the scope on direct was limited to the applica-
17 tions at hand and the original question propounded to this
18 witness is whether he knew of any objections to these ap-
19 plications. And I believe he testified there were none.

20 MR. CATANACH: Mr. Hall, the
21 Navajo Nation seems to have some questions that may not be
22 within the scope of this hearing but they do think they need
23 to be addressed.

24 MR. HALL: We'd be pleased to
25 allow them to make any statements. I believe before they're

1 allowed to pursue any questioning there's a question as to
2 their standing in this case. They need to establish that
3 they're an interest owner affected.

4 I don't believe that's been
5 done and there's been no entry of appearance filed on behalf
6 of the Navajos. They don't appear to be represented by an
7 attorney.

8 Other than allowing them to
9 make that statement, I don't believe they're entitled to in-
10 terrogate witnesses.

11 If I may further clarify my ob-
12 jection, the applications we're hearing today have to do on-
13 ly with well spacing and they seek, the applications seek an
14 exception to the current well spacing requirements.

15 From the thrust of the -- Mr.
16 Dehiya's questions, it appears that his concerns are addres-
17 sed with certain surface matters, which are completely ir-
18 relevant to this proceeding and beyond the scope.

19 I would suggest that this is
20 perhaps the wrong forum to proceed (inaudible).

21 MR. TAYLOR: We'll let him ask
22 the question, but, Mr. Dehiya, for the record would you
23 state what the Tribe's interest in this is? Are they the
24 surface lessee or surface owner or what's their interest in
25 this case?

1 MR. DEHIYA: For the records, I
2 want to state that the Tribe is the owner of surface rights
3 surrounding Section 28, Section 30, and then also for the
4 record the Tribe has a grazing lease on the New Mexico State
5 surface section.

6 MR. TAYLOR: So you own some
7 surface and you lease some surface?

8 MR. DEHIYA: Yes.

9 MR. TAYLOR: Mr. Law, would you
10 address the question of whether or not there've been -- what
11 was the question -- whether or not problems have been raised
12 to you about your operation?

13 MR. HALL: The question on di-
14 rect was whether he was aware of any objections to these ap-
15 plications.

16 MR. TAYLOR: Right.

17 A No.

18 MR. TAYLOR: Mr. Dehiya, you
19 may continue. Do you have any other questions?

20 MR. HALL: That concludes my
21 direct.

22 DR. SABO: The Land Office
23 would like to ask a question or at least direct a comment.

24 Interest of waste, or the pre-
25 vention of waste, also involves over-drilling, over-expen-

1 ding of capital, possibly destruction of land or even set-
2 ting a precedent that in the future might result in this.

3 Now, the testimony stated that
4 we would recover approximately -- or drain one acre of land,
5 or reservoir, but there was no further mention of the cost
6 of the well or the economics. In other words, the recovery
7 as against the amount of drainage, the amount of recovery,
8 or possibly the impact on the area itself by the denser
9 drilling.

10 We'd be curious to know how
11 much a well costs, what the return on the investment would
12 be, as to whether it would be an economical venture as far
13 as other state land to this area as a precedent, if nothing
14 else.

15 MR. HALL: May I respond to
16 that?

17 I believe the witness did tes-
18 tify that on present spacing that the project would probably
19 be uneconomical but there was, you are correct, no testimony
20 on well cost.

21 DR. SABO: Then, of course, the
22 follow-up question would be if it is uneconomical, can ex-
23 tensive drilling be justified?

24 MR. HALL: I'll let him answer
25 the question.

1 MR. LAW: Okay, we think with
2 the addition of 30 to 40 additional wells in the whole area
3 at an approximate cost to complete, \$15,000 each, we can re-
4 cover at current market prices an additional \$16,000,000
5 worth of oil, at current market. That's \$15.00 a barrel, at
6 least the last time I saw it.

7 MR. CATANACH: Does that answer
8 your question?

9 DR. SABC: Okay.

10

11

CROSS EXAMINATION

12 BY MR. CATANACH:

13 Q Mr. Law, how do you come up with the
14 figure that one well will only drain less than five acres?

15 A Looking at primary production history,
16 which is before we took this property over, on an individual
17 well basis is admittedly pretty sketchy because of the
18 records, but based upon our own experience here since we've
19 been in the field, on cumulative recover from each well, say
20 on a 20 percent of total oil in place on primary, there is
21 no way that these wells could -- are conceivably draining
22 more than one acre of land within a ten year period.

23 This is actual production history since
24 we've been on the -- on the property, Mr. Examiner.

25 Q Now, that's based on original oil in

1 place based on volumetric calculations?

2 A Yes, sir.

3 Q And which in turn are based on the aver-
4 age core data that presented earlier.

5 Q When was that, Mr. Law? When was core
6 data presented?

7 A Early in my testimony when I gave the
8 porosity and permeability range and the formation volume
9 factor, viscosity.

10 Q And that is based on cores?

11 A Yes, sir.

12 Q The 2 percent assumption on -- of primary
13 recovery, 2 to 3 percent, is that based on the lack of
14 reservoir energy?

15 A Yes, completely. Everything else, we im-
16 mediately believe, is going to make a lot oil.

17 Q And you're assuming what percentage did
18 you say for secondary recovery?

19 A Total of 40 percent of the oil in -- ori-
20 ginal oil in place. That includes primary and secondary,
21 which is probably rather conservative.

22 Q So on your Exhibit Number Two, the Form
23 C-102, is there a -- do you intend to establish some kind of
24 pattern for these wells as against --

25 A No, I -- strictly the geology and adapt-

1 ability to a flood pattern.

2 Q Do you have a set flood pattern?

3 A Not yet; depending on the configuration
4 of the reservoir as we develop them from this drilling.

5 At the current time we have a split line
6 drive in operation on Section 28, but I don't know what the
7 future flood pattern is going to be.

8 We do, also, have -- well, we have per-
9 mitted the remainder of the split line drive. We just have
10 a line drive in operation at the current -- at the present
11 time.

12 MR. CATANACH: I have no fur-
13 ther questions for Mr. Law at this present time.

14 If there are no other questions
15 -- Mr. Stockton?

16
17 QUESTIONS BY MR. STOCKTON:

18 Q Mr. Law, if the Land Office or some other
19 surface owner in the area requested special litigation pro-
20 cedures on your drilling operations, special reclamation
21 procedures, would this substantially affect your economics?

22 A I don't think so.

23 MR. STOCKTON: That's all.

24 MR. CATANACH: Mr. Taylor, do
25 you have some questions?

CROSS EXAMINATION

1
2 BY MR. TAYLOR:

3 Q Mr. Law if your application in this case
4 is approved, will that -- essentially that's going to permit
5 you to expand this project, is it not?

6 A Yes.

7 Q In the past haven't you had problems with
8 the Division as far as complying with our rules and regula-
9 tions on your existing size of your project?

10 A We did have some problems, yes.

11 Q Are those cleared up?

12 A To the best of my knowledge they are,
13 yes, sir.

14 Q Did you get a notice dated August 11th
15 cancelling your allowable for failure to comply with the
16 rules and regulations of the Division?

17 A Not to my knowledge.

18 Q You haven't seen that?

19 Why don't you take a look at it?

20 You haven't seen that yet?

21 A No.

22 Q Not yet?

23 A No.

24 Q Do you know why those things haven't been
25 filed?

1 A Yes, I think I do, but I'd prefer that my
2 partner who has been filing them answer the question.

3 Q Okay, and why don't you tell me about the
4 -- what efforts you've made to clear up your other problems.
5 I know you in the past -- you've been cited numerous times
6 for failure to file various documents that need to be filed
7 with us, production reports, drilling reports, completion
8 reports; in fact, here's a thing dated -- a letter dated
9 February 21st, which says that --

10 MR. HALL: Well, I'm going to
11 object right now to --

12 MR. TAYLOR: You can't object,
13 Scott. I'm part of the --

14 MR. HALL: -- to counsel's --

15 MR. TAYLOR: -- Division and
16 I'm going to ask the questions.

17 MR. HALL: -- propounding ques-
18 tions to this witness. They are improper in that counsel is
19 also serving as counsel for the Hearing Examiner. The ques-
20 tions appear to be hostile and adverse and I believe are in
21 conflict.

22 MR. TAYLOR: Okay, that's an
23 objection for the record, Sally.

24 Q Now this letter says that you had entered
25 into a --

1 MR. HALL: Do I get a ruling on
2 my objection?

3 MR. TAYLOR: You don't get to
4 make an objection. You can object for the record that I
5 shouldn't be doing this but you can't stop me from doing it.

6 Q It says here that you don't have signs
7 on your wells; that your tank is consistently overflowing;
8 that spills have not been cleaned up; that an old flowing
9 well has not been capped; that injection wells were flowing
10 water at the surface; that a shut-in well was flowing water
11 and oil at the surface; the wells had been plugged that had
12 been abandoned.

13 Have you cleared up all these problems?

14 MR. HALL: I'm going to renew
15 my objection and also state that these questions are also
16 irrelevant and beyond the scope and I request a ruling.

17 MR. TAYLOR: Well, I'll just
18 respond that if your -- Geo Engineering is attempting to ex-
19 pand a project that they have and it's a project that's
20 authorized by us by approving various things that they have
21 to get approved before they can undertake to drill wells or
22 various other things, that if they've got outstanding viola-
23 tions with us, it's my belief that they should not be ap-
24 proved, and it's my belief that if this is an application to
25 expand an existing project where we have substantial prob

1 lems, that it shouldn't be expanded until the existing prob
2 lems are cleared up.

3 And we just had problems -- I've got
4 documents going back over two years of consistent rule vio-
5 lations and apparently they still have not been totally
6 cleared up.

7 We have scheduled or we're going to sche-
8 dule a hearing to show cause why this whole thing shouldn't
9 be shut down, and we were assured by Mr. Law that all these
10 problems would be cleared up. But here I get a letter in
11 the mail yesterday that says that they still are not filing
12 productions.

13 MR. HALL: Are you going to put
14 on some evidence, Counsel?

15 MR. TAYLOR: Sure. I just want
16 to know what's going on here. is this situation going to be
17 cleared up and are you going to operate or are we going to
18 have consistent violations of the rules, failures to file
19 reports, and just kind of wandering around making kind of a
20 half-assed effort to run this operation out there.

21 MR. HALL: Again I'm going to
22 renew my objection and request a ruling.

23 MR. CATANACH: Let's take a
24 five minute break.

25

1 (Thereupon a recess was taken.)

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MR. CATANACH: On the ruling that was raised by -- the objection raised by the applicant's attorney, we are going to hear this case today and just the issues that involve this case and before this case, before a decision is made on this case, the Division is going to schedule a show cause hearing to address the other issues that have been raised at this hearing.

MR. HALL: At this time I call Mr. James Woods.

JAMES R. WOODS,
being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. HALL:

Q For the record please state your name.

A James R. Woods.

Q And where do you live?

A Box 1417, Socorro.

Q How are you employed?

A I'm a geologist for Geo Engineering, Inc.

Q Mr. Woods, have you previously testified

1 before the Division and --

2 A No.

3 Q -- had your credentials accepted?

4 A No. No, I have a resume in case they
5 want to see it.

6 Q All right.

7 MR. HALL: We'll mark these as
8 Exhibit Six and provide them to the Examiner.

9 Q Why don't you briefly summarize your
10 educational background and work experience?

11 Again, would you briefly summarize your
12 educational background and work experience?

13 A I have studied geological engineering at
14 New Mexico Institute of Mining and Technology and finished
15 all the requirements at the University of New Mexico.

16 I have worked for Superior Oil Company,
17 Sinclair Oil Company, and old Humble Oil Company.

18 Q Okay, in what capacities?

19 A As field geologist.

20 Q All right. And how are you employed now
21 with Geo Engineering?

22 A Project geologist in the Red Mountain
23 Oil Pool.

24 Q All right. Are you familiar with the
25 lands and the subject applications?

1 A Yes, I am.

2 MR. HALL: At this point we'd
3 tender Mr. Woods as a qualified geologist.

4 MR. CATANACH: Mr. Woods is
5 considered qualified.

6 Q Mr. Woods, are you familiar with the
7 geology in the application area?

8 A Yes, I am.

9 Q Are you also familiar with the producing
10 formation?

11 A Yes.

12 Q What are the geological characteristics
13 of that formation?

14 A The Menefee formation in the Red Mountain
15 Pool and the Chaco Wash Pool is a fluvial flood deposit that
16 was laid down with a stream, meandering stream system, and
17 oil sands are being produced from the different lenses of
18 sands in the Menefee.

19 Q Okay. Mr. Woods, do you have an opinion
20 as to whether the sands in the subject area are contiguous
21 across the whole property?

22 A The sands are -- we don't -- we haven't
23 done enough exploration yet to determine the continuity but
24 my feeling is that there is no continuity.

25 Q Then are the sands generally undefineable

1 boundary-wise?

2 A They're undefineable lenses laid down in
3 these channel deposits.

4 Q How many lenses or reservoirs, if you
5 will, have you identified?

6 A Eight.

7 Q And what is the areal extent --

8 A I'm not sure at this time.

9 Q Okay. What is the average depth of these
10 lenses?

11 A From 12 to 18 feet.

12 Q All right. In your opinion is drilling
13 on 330-acre spacing sufficient to drain lenses such as
14 these?

15 A No, it's not. There's no energy. The
16 only oil that's produced primarily is just what's dripped
17 into the bore hole.

18 Q Okay. In your opinion would the granting
19 of this application prevent waste by lifting otherwise unre-
20 coverable oil?

21 A Yes.

22 Q Will granting this application be in the
23 interest of conservation, the prevention of waste, and the
24 protection of correlative rights?

25 A I think so.

1 Q All right, let me ask you, as an officer
2 of Geo Engineering do you understand Geo Engineering to be
3 in compliance with the Oil Commission regulations --

4 A Yes.

5 Q -- with respect to operations?

6 A Yes.

7 Q All right, no further questions.

8 MR. HALL: We'd move the admis-
9 sion of Exhibit Six, the resume.

10 MR. CATANACH: Exhibit Six will
11 be admitted into evidence.

12 MR. TAYLOR: I don't have any
13 questions.

14 MR. CATANACH: Mr. Dehiya, do
15 you have any questions for the witness regarding the appli-
16 cation?

17 Mr. Stockton or Mr. Sabo?

18 MR. HALL: That concludes our
19 case, Mr. Examiner.

20 MR. CATANACH: Well, I have no
21 further questions of the witness.

22 I'll state again that this case
23 will -- the decision on this case will be pending the deci-
24 sion on the case that the Division is going to bring forth
25 to show cause, so we could leave the record open on it in

1 case there's any other testimony that we might need to pre-
2 sent later on.

3 Would you agree to that?

4 MR. HALL: I don't believe so.
5 We would request that an order be entered in this case as
6 soon as possible.

7 MR. CATANACH: Well, as I said,
8 an order will not be entered in this case until after the
9 decision has been made on the show cause hearing.

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11 (Hearing concluded.)
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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) 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 CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8932, 8933, 8974 heard by me on August 20 1986.

David R. Catlett, Examiner
Oil Conservation Division