

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

22 October 1986

EXAMINER HEARING

IN THE MATTER OF:

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

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:	Geoffrey Sloan Legal Counsel for the Division Energy and Minerals Dept. Santa Fe, New Mexico 87501
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For the Applicant:	J. Scott Hall Attorney at Law CAMPBELL & BLACK P.A. P. O. Box 2208 Santa Fe, New Mexico 87501
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For the Navajo Nation:	Richie Nez Attorney at Law Window Rock, Arizona
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MR. CATANACH: We'll call next Case 8932.

MR. SLOAN: This is an application of Geo Engineering, Incorporated, for exceptions to Division General Rules 104 (F) and 104 (C) (I), McKineley County, New Mexico.

MR. CATANACH: Are there appearances in this case?

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

I don't anticipate putting on any witnesses today but we have some available if need be.

MR. NEZ: Mr. Examiner, my name is Richie Nez. I'm an attorney for the Navajo Nation in Window Rock, Arizona.

I'll be appearing for the Navajo Nation in this case.

MR. HALL: Mr. Examiner, also we'd like this case to be consolidated and heard along with Cases 8974 and 8933.

MR. CATANACH: Okay, we'll call next Case 8933.

MR. SLOAN: 8933 is an applica-

1 tion of Geo Engineering, Incorporated, for exceptions to  
2 Division General Rules 104 (F) and 104 (C) (I), McKinley  
3 County, New Mexico.

4 MR. CATANACH: And we'll call  
5 next Case 8974.

6 MR. SLOAN: That is an applica-  
7 tion of Geo Engineering, Inc., for exceptions to Division  
8 General Rules 104 (F) and 104 (C) (I), McKinley County, New  
9 Mexico.

10 MR. CATANACH: For the record  
11 Case 8932, 8933, and 8974 were heard on August 20th, 1986,  
12 and were reopened at the request of the Navajo Nation.

13 You may proceed, Mr. Hall.

14 MR. HALL: Mr. Examiner, if I  
15 could just make a brief statement.

16 These cases are indeed a con-  
17 tinuation of the cases heard on August 20th of this year.  
18 The record was reopened on the request of the Navajo Nation.

19 Interrogatories were propounded  
20 by the applicant to the Navajo Nation to determine the  
21 nature of their request to reopen, whether or not it was on  
22 engineering or geologic grounds.

23 Subsequently the applicant was  
24 contacted by Mr. Nez, the attorney for the Navajo Nation and  
25 we are advised that there were some concerns that certain of

1 the applicant's surface operations might interfere with the  
2 grazing activities on Section 28, which are part of the ap-  
3 plication lands.

4 The Navajo Nation has a State  
5 of New Mexico grazing lease on part of Section 28 and I be-  
6 lieve the grazing lease is coterminous with the oil and gas  
7 lease held by the applicant in Section 28.

8 Subsequently a meeting was had  
9 between myself, Mr. Jim Law, Geo Engineering, and Mr. Nez,  
10 and the parties reached an accommodation over the matters  
11 concerning the surface use. Those, the terms of that accom-  
12 modation have been put forth in a letter dated October 21,  
13 1986, signed by myself and addressed to Mr. Nez.

14 We offer that into the record  
15 as Applicant's Exhibit One-A, and if there is no objection  
16 from Mr. Nez, we would tender that as a part of the eviden-  
17 tiary record at this time.

18 MR. NEZ: No objection at this  
19 time, Mr. Examiner; however, there are some ambiguities in  
20 this exhibit which needs to be cleared up on the record.

21 The ambiguities will be  
22 initially we had talked about establishing time lines, spec-  
23 ifically in reference to Sub-paragraph 1 and 2 and 3. At our  
24 initial conference we had talked about having Geo Engineer-  
25 ing come into full compliance with the State rules and regu-

1 lations and we had talked about, at that time, I believe it  
2 was thirty days.

3                   When we had a meeting this  
4 morning we were going to concur in this subject to the Nava-  
5 jo Nation's inspections to make sure that the compliance and  
6 the grazing portions of our rights on that land are fully  
7 protected.

8                   And Geo Engineering, their ap-  
9 plication will be -- will be concurred in by the Navajo Na-  
10 tion subject to our inspection and if there is any -- any  
11 noncompliance going on out there, they will concur in having  
12 this thing reopened.

13                   MR. HALL: That's basically  
14 correct, Mr. Examiner.

15                   It's my understanding from  
16 representatives of Geo Engineering that the items set out in  
17 -- or the matters set out in Items 1 through 3 of Exhibits  
18 One-A have indeed already been taken care of and it's our  
19 understanding that Geo Engineering is in full compliance  
20 with the surface use matters on the location.

21                   We do agree to allow this  
22 matter to being reopened upon subsequent application of the  
23 Navajo Nation but at this point we think that this agreement  
24 puts the Oil Conservation Division in that position of  
25

1 immediately approving the application and we would request  
2 an expedited order in this matter.

3 MR. CATANACH: As I understand  
4 it, Mr. Hall, the stipulations contained in Paragraphs 1, 2,  
5 and 3 have already been accomplished?

6 MR. HALL: That's my  
7 understanding.

8 MR. CATANACH: Fine.

9 MR. NEZ: Mr. Examiner, the  
10 Navajo Nation hasn't had the opportunity to confirm this.  
11 I've requested my people to go out there and to check out  
12 to make sure that any compliance has been done.

13 My phone call to the office  
14 this morning has -- hasn't produced anything. The people  
15 that are supposed to be out there are on their way to  
16 Albuquerque on another matter, and so we should be able to  
17 know for our -- to our own satisfaction whether in fact Geo  
18 Engineering has done all this stuff within a week.

19 MR. CATANACH: All right.  
20 Then, Mr. Nez, you have no objection to the Division  
21 entering an order before you check it out or would you like  
22 to --

23 MR. NEZ: Well, that's the --  
24 that's our -- that's our understanding between Mr. Hall and  
25 us. It shouldn't take that long to go out there and verify

1 it. If in fact it hasn't been done, that would still give  
2 us time before drilling operations start to try to reopen.

3 MR. CATANACH: Okay. Would you  
4 ask that you be allowed sufficient time to inspect the  
5 leases; maybe send in a letter to the Division?

6 MR. NEZ: Subject to Mr. Hall's  
7 concurrences I would request a week.

8 MR. HALL: Well, it's my under-  
9 standing of the agreement is that we have concurrence here  
10 today that if there is an incident of noncompliance then  
11 this matter may be reopened.

12 We expressed our concern to Mr.  
13 Nez that we take the proceeding to a position where the Oil  
14 Conservation Division can enter its order as soon as pos-  
15 sible and I believe that was the understanding between the  
16 parties.

17 And that's why we're requesting  
18 an expedited order, and further, we contemplated that the  
19 matter be reopened later at any time if there was a noncom-  
20 pliance. I don't think we really agreed to any further de-  
21 lays in this matter. It's been going on for several months  
22 now.

23 MR. NEZ: Before -- Mr. Exam-  
24 iner, if I may, we'll go ahead and concur in the applica-  
25 tion. It will take a matter of weeks for them to start

1 drilling operations anyway, and during that interim we can  
2 certainly go out there and inspect.

3 MR. CATANACH: All right.  
4 Okay, then an order will be issued as soon as possible in  
5 this case, in these cases.

6 Is there anything further, Mr.  
7 Nez?

8 MR. NEZ: No, sir.

9 MR. KENNEDY: I'm Claude C.  
10 Kennedy, appearing for and on behalf of myself in Case 8932.  
11 Do you want me to go ahead and  
12 read my statement?

13 MR. CATANACH: Yes, sir, Mr.  
14 Kennedy.

15 MR. KENNEDY: I'm an independ-  
16 dent oil operator residing at 6115 Del Campo Place, Albu-  
17 querque.

18 I am the record title owner of  
19 State Lease E-5113-69, consisting of the southwest quarter  
20 of the northwest quarter of Section 32, 20 North, 9 West.

21 This is a State lease issued on  
22 4-4-1951. I took assignment on 4-7-1972. The lease is held  
23 by production and will probably be held by production for  
24 the next forty years, and I merely want the OCD Hearing Exa-  
25 miner to be aware that I have not been properly notified in

1 this case.

2 MR. CATANACH: Mr. Kennedy, do  
3 you have any documents or proof of your ownership of this  
4 lease?

5 MR. KENNEDY: I don't have any  
6 documents with me but they're in this building. They're in  
7 a case file downstairs.

8 MR. HALL: May I ask a question  
9 --

10 MR. CATANACH: Yes.

11 MR. HALL: -- of Mr. Kennedy?

12 MR. CATANACH: Yes, you may.

13 MR. HALL: Mr. Kennedy, do you  
14 appear for any purpose other than stating that you did not  
15 receive notice of this case?

16 MR. KENNEDY: No, I don't ob-  
17 ject or agree to the application because I don't even know  
18 what it's about.

19 MR. HALL: Okay.

20 MR. CATANACH: Mr. Kennedy's  
21 statement will be entered into the record.

22 Is there anything further in  
23 Case 8932, 8933, or 8974?

24 If not, they will be taken un-  
25 der advisement.

(Hearing concluded.)

## C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY  
CERTIFY 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 October 22, 1986.

David K. Catanzano, Examiner  
Oil Conservation Division

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. SABO: 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

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BY MR. TAYLOR:

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

A Yes.

Q In the past haven't you had problems with the Division as far as complying with our rules and regulations on your existing size of your project?

A We did have some problems, yes.

Q Are those cleared up?

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

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

A Not to my knowledge.

Q You haven't seen that?

Why don't you take a look at it?

You haven't seen that yet?

A No.

Q Not yet?

A No.

Q Do you know why those things haven't been 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.)

2  
3 MR. CATANACH: On the ruling  
4 that was raised by -- the objection raised by the  
5 applicant's attorney, we are going to hear this case today  
6 and just the issues that involve this case and before this  
7 case, before a decision is made on this case, the Division  
8 is going to schedule a show cause hearing to address the  
9 other issues that have been raised at this hearing.

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

12  
13 JAMES R. WOODS,  
14 being called as a witness and being duly sworn upon his  
15 oath, testified as follows, to-wit:

16  
17 DIRECT EXAMINATION

18 BY MR. HALL:

19 Q For the record please state your name.

20 A James R. Woods.

21 Q And where do you live?

22 A Box 1417, Socorro.

23 Q How are you employed?

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

25 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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(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 M. Calamb, Examiner  
Oil Conservation Division