

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

14 May 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Eastland Oil Company CASE
for the amendment of Division Order 8895
No. R-8165, Eddy County, New Mexico.

BEFORE: David M. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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MR. CATANACH: Call next Case

3

8895.

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MR. TAYLOR: The application of
the Eastland Oil Company for the amendment of Division Order
No. R-8165, Eddy County, New Mexico.

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MR. CATANACH: Are there ap-
pearances in this case?

9

10

MR. KELLAHIN: Yes, sir. Tom
Kellahin appearing on behalf of Eastland.

11

12

If you'll give me just a moment
I'll get the exhibits.

13

14

(Witness sworn.)

15

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GEORGE D. NEAL,

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

19

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DIRECT EXAMINATION

21

BY MR. KELLAHIN:

22

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Q Mr. Neal, for the record would you please
state your name and occupation?

24

25

A My name is George Neal. I'm the Vice
President of Eastland Oil Company.

1 Q Mr. Neal, would you describe for the exa-
2 miner any professional degrees that you hold?

3 A I have an engineering degree. I'm a Reg-
4 istered Professional Engineer.

5 Q Did you testify on December 18th, 1985,
6 before Examiner Michael Stogner in Case 8787, the request by
7 Eastland Oil Company for the approval of a waterflood pro-
8 ject in Eddy County, New Mexico?

9 A I did.

10 Q Is the proposed application today in the
11 subject case, 8895, a request on behalf of your company to
12 amend certain well locations under that order entered in
13 Case 8787?

14 A It is. There was some objection to one
15 well in that original order that made it almost impossible
16 to use the pattern that we had originally planned in our or-
17 der that was approved by 8165.

18 Q As an engineer for your company have you
19 done the additional work required for the exhibits and tes-
20 timony for this hearing?

21 A I have.

22 MR. KELLAHIN: We tender Mr.
23 Neal as an expert petroleum engineer.

24 MR. CATANACH: Mr. Neal is con-
25 sidered qualified.

1 Q Mr. Neal, in order to apprise this exam-
2 iner of the status of your project, let me direct your at-
3 tention first of all, sir, to what is marked as Exhibit Num-
4 ber One and have you identify that for us.

5 A Exhibit Number One is the Order R-8165
6 resulting from our hearing on December 18th, 1985, approving
7 a unit for the Power-Grayburg-San Andres Pool.

8 Q All right, sir, now let me direct your
9 attention to Exhibit Number Two and have you identify Exhi-
10 bit Number Two for us.

11 A Exhibit Number Two is the unit area of
12 the Power-Grayburg-San Andres Unit, as was approved by both
13 the BLM and the Oil Conservation Division.

14 Q Exhibit Number Two is the exhibit that
15 was used at the December 18th, 1985, hearing and represents
16 the requested injection well locations that were approved by
17 Order R-8165?

18 A That is correct.

19 Q All right. As a result of receiving that
20 order, Mr. Neal, did you review the requirements the Divi-
21 sion set forth in that order to determine whether Eastland
22 could practicably comply with that order?

23 A Yes, we did. There was an objection to
24 the fact that one well, namely the Allied Federal No. 2, was
25 exactly one-half mile south of the plugged well that was on

1 -- that had been drilled in 1939 and plugged in 1940. It
2 was a dry hole and there was some doubt as to the plugging
3 procedure of that well and we could not find any adequate
4 information to confirm the fact that it was correctly or in-
5 correctly plugged.

6 Q Looking at Exhibit Number Two, would you
7 show us where the plugged and abandoned well is located?

8 A It is not shown on this plat on Exhibit
9 Two but it's exactly one-half mile, 2640 feet, north of Al-
10 lied Federal No. 2 in Section 6.

11 Q Subsequently to receiving that order, Mr.
12 Neal, did you determine whether or not it was effective and
13 efficient for Eastland to relocate its injection wells?

14 A Yes. We reviewed our pattern, the pos-
15 sibility of other patterns that we had previously looked at,
16 and decided that another injection pattern would be equally
17 as efficient in flooding this unit as the one that we had
18 proposed on the original order.

19 Q And it is that amended injection pattern
20 that you're submitting to this examiner today?

21 A Yes, it is.

22 Q Let's go now, sir, to Exhibit Number
23 Three and Exhibit Number Four.

24 MR. KELLAHIN: Mr. Catanach,
25 Exhibit Three and Four represent notice -- notifications to

1 the offset operators, the surface owners, setting up the
2 hearing today.

3 Q Let's turn past the notices, Mr. Neal,
4 and go now to Exhibit Number Five.

5 A Exhibit Number Five is the plat of the
6 approved Power Grayburg Federal Unit, showing the proposed
7 changes in injection wells and wells that will be used for
8 production in this waterflood unit.

9 Q All right, let's take Exhibit Number Two,
10 which is the original pattern, and Exhibit Number Five,
11 which is the proposed amended pattern, and have you simply
12 go through and explain to us what changes are occurring.

13 A Starting from the right to left, the ARCO
14 Federal No. 3 will be an injector under the old pattern. It
15 will remain as an injector under the new pattern.

16 In Section 6, the Allied Federal No. 1
17 was formerly an injector -- I'm sorry, was formerly a pro-
18 ducing well and it would become an injection well, and then
19 alternating, Allied Federal No. 2, which was proposed as an
20 injector, will be a producing well.

21 And Kenwood Federal No. 1 will be an in-
22 jection well, which formerly was a producer, and also Ken-
23 wood Federal No. 3 will be a producing well and it was for-
24 merly an injection well.

25 And the two additional injectors, Kenwood

1 Federal No. 2 and Sibyl Federal No. 1 will also be injec-
2 tors.

3 Sibyl Federal No. 2 was an injector and
4 will be a producing well.

5 Q All right, sir, does that complete the
6 changes in producing from injection wells and injection --

7 A That's correct --

8 Q -- to producing?

9 A -- it's an alternating pattern very simi-
10 lar to the one that we had before, however, it does relieve
11 the problem of this Allied Federal No. 2 Well.

12 Q Do you have an opinion, Mr. Neal, as an
13 expert petroleum engineer whether or not the proposed
14 amended injection pattern is one that will still be effec-
15 tive and efficient for this project?

16 A It will be as efficient, if not more so,
17 than the one originally proposed. The reason for the orig-
18 inal proposal was the pattern was keyed on the Kenwood Fed-
19 eral No. 4, which was -- which is a disposal well in the
20 same formation, but if this acreage is not to be included in
21 the unit, so there's no other reason to use that -- even
22 consider that well as an injector.

23 Q Let's go to Exhibit Number Six and have
24 you identify Exhibit Number Six for us.

25 A Exhibit Number Six shows the distance of

1 the two proposed injectors that are being changed, Allied
2 Federal No. 1 and Kenwood Federal No. 1 from the -- and
3 their distance from the well that was in question there, the
4 Yates Hamon Stagner No. 1 (sic) which they say was drilled
5 in 1939.

6 Each well would be 2952 feet from this
7 dry hole.

8 Q The Stagner well is the well for which
9 there was lack of sufficient information to determine the
10 adequacy of the plugging?

11 A That is correct.

12 Q And originally the Eastland No. 2 Well
13 was the injector well.

14 A Yes, that is right, Allied Federal No. 2.

15 Q And they were exactly a half mile apart.

16 A Exactly, north to south.

17 Q By changing the No. 2 Well to a producer
18 well and then changing the other two to injector wells, now
19 the injector wells are each more than half a mile away from
20 the Stagner Well.

21 A That is correct.

22 Q All right, sir, let's turn now to the
23 specifics of the proposed amended C-108 and ask you first of
24 all to identify Exhibit Number Seven.

25 A Exhibit Number Seven is the Form C-108,

1 the Application for Authorization to Inject, that had pre-
2 viously been filed with the December presentation of the Al-
3 lied -- of the Power Grayburg Federal Unit, and all the geo-
4 logical information was filed at that time with the cross
5 sections and maps which are on file with the Division.

6 Q The form and all the attachments and ex-
7 hibits were prepared by you or compiled under your direc-
8 tion?

9 A That's correct.

10 Q Let's turn now to the Exhibit Number
11 Eight.

12 A Exhibit Eight shows the change actually
13 in the two-mile radius -- radius of interest around the pro-
14 posed injectors, and the half mile circle around each injec-
15 tor, which did change slightly due to the change in the in-
16 jection wells, but excludes the dry hole Stagner Well and
17 also the Hanson Gulf State, which was not under question but
18 it will be -- those two dry holes will be excluded from the
19 half mile radius.

20 Q As the result of modification of the in-
21 jection pattern, the half mile radius circles have shifted
22 slightly?

23 A Yes. Due to the change in the injectors
24 they have.

25 Q Has that shift resulted in additional

1 operators being affected within the half mile radius or are
2 we still dealing with the same operators as under the
3 original application within the half mile radius?

4 A Same operators are affected, same offset
5 operators, and there's no additional wells being taken into
6 the half mile radius.

7 Q The tabulation and wellbore information
8 you provided on producing and plugged wells in the original
9 application, then, is not modified with regards to the
10 amended application except for the deletion of those two
11 plugged and abandoned wells?

12 A That's correct.

13 Q We don't pick up any more plugged and
14 abandoned wells or any producing wells.

15 A No additional wells.

16 Q All right, sir, and let's turn now, then,
17 to Exhibit Number Nine.

18 A Exhibit Nine shows the same information
19 as Exhibit Eight, just on an enlarged scale with the radius
20 of the distance of the injectors being marked on the plat.

21 Q Okay. Let's turn now, sir, to the speci-
22 fic wellbore information about the four injector wells that
23 will be amended or changed from the original order.

24 Please start with Exhibit Number Ten.

25 A The four wells that will now become in

1 jectors are presented on the injection well data, both on
2 the schematic sketch and the tabular information.

3 We'll use a packer immediately above the
4 perforated interval in which the water will be injected;
5 will be internally coated plastic tubing, corrosion protec-
6 tion, and use of inhibited packer fluid in the annulus be-
7 tween the casing and the tubing.

8 Q Okay, turn to Exhibit Number Eleven and
9 let's talk about that injection well.

10 A Kenwood Federal No. 1, there is the same
11 provisions. The interval is basically the same, the perfor-
12 ated interval, using the same type of equipment in the well
13 and the corrosion protection, as previously mentioned.

14 Q All right, sir, describe for us the pro-
15 posed injector well that's identified on Exhibit Twelve.

16 A The Kenwood Federal No. 2 is -- follows
17 the same pattern also. It's the producing well with the
18 tension packer set above the perforated interval and provi-
19 sions for monitoring the pressures.

20 Q All right, sir, and let's go to Exhibit
21 Thirteen and have you describe that injector.

22 A The Sibyl Federal No. 1, it's become an
23 injector with the same corrosion protection as the other
24 three previously mentioned wells.

25 Q Other than the amendment of the injector

1 wells to comply with the proposed amended injectin pattern,
2 are you aware of any other significant factors that are
3 going to be altered in terms of the operation of the water-
4 flood project?

5 A We plan no -- no changes at all. It will
6 be carried out exactly as originally submitted.

7 Q The surface injection pressure will re-
8 main the same?

9 A Yes, we anticipate the same type pressure
10 we asked for in the original order.

11 Q In your opinion will the water and injec-
12 tion fluids that are injected into these injector wells re-
13 main confined in the injection interval?

14 A Yes, they will, both are protected from
15 casing and cement.

16 Q The injection rates and the volumes are
17 still within the same range as was requested in the original
18 order?

19 A That is correct; no changes.

20 Q With the exception of the notice letters,
21 Mr. Neal, were Exhibits One through Twelve prepared or tabu-
22 lated under your direction and supervision?

23 A They were.

24 MR. KELLAHIN: We move the in-
25 troduction of Exhibits One through Thirteen.

1 MR. CATANACH: Eastland Exhi-
2 bits One through Thirteen will be admitted into evidence.

3 MR. KELLAHIN: That concludes
4 my examination of Mr. Neal.

5

6 CROSS EXAMINATION

7 BY MR. CATANACH:

8 Q Mr. Neal, why was the decision not to re-
9 enter the Stagner well made?

10 A In 1956 Hanson attempted to re-enter that
11 well and they got only as far as -- they spend two weeks and
12 only got as far as the surface casing, bottom of the surface
13 casing. Apparently there's junk in the hole, in the pipe or
14 some other type; they described it as being metal junk. We
15 feel like it was almost impossible to -- from their informa-
16 tion as well as what we could find available to re-enter
17 that well.

18 Q Mr. Neal, the Eastland No. 3 Well, that
19 was previously approved?

20 A Yes, the ARCO Federal No. 3, uh-huh.

21 Q ARCO Federal No. 3.

22 A Right, it was approved and so it was not
23 mentioned in this re-hearing.

24 Q And you added an additional injection
25 well. Which one is it?

1 A Well, we have -- we now have a total of
2 five injectors where we previously had four.

3 But by changing the pattern it did incor-
4 porate one additional well.

5 Q Mr. Neal, referring to Exhibit Number
6 Ten, the schematic of the Allied Federal No. 1, I notice
7 that the casing is perforated from 3803 to 3831. Were those
8 perforations squeezed in any way, squeeze cemented?

9 A They were not. That was a dry test in
10 the San Andres. There has never been any San Andres produc-
11 tion in this area, but they were San Andres casing perfora-
12 tions.

13 Q In your opinion, Mr. Neal, there won't be
14 any communications between those perforations and --

15 A No, I don't think so, because we have
16 tested this in one other well. We have tested the San An-
17 dres and had no, no production.

18 Q The remaining three injection wells have
19 not been perforated in the San Andres?

20 A No, they have not.

21 MR. CATANACH: I have no fur-
22 ther questions of Mr. Neal.

23 Are there any other questions
24 of the witness?

25 If not, he may be excused.

1 Is there anything further in
2 Case 8895?

3 MR. KELLAHIN: No, sir.

4 MR. CATANACH: If not, it will
5 be taken under advisement.

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7 (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 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. 2875,
heard by me on May 12, 1986.
David R. Catasone, Examiner
Oil Conservation Division