

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
March 28, 1973

EXAMINER HEARING

IN THE MATTER OF:

Application of Shenandoah Oil
Corporation for a unit agreement
and for a waterflood project,
Eddy County, New Mexico.

Case No. 4925 and 4926

BEFORE: Daniel S. Nutter
Examiner

TRANSCRIPT OF HEARING

dearnley, meier & mc cormick

1 MR. NUTTER: We will now call Cases 4925 and 4926.

2 Case 4925: Application of Shenandoah Oil Corporation for a
3 unit agreement, Eddy County, New Mexico. Case 4926: Application
4 of Shenandoah Oil Corporation for a waterflood project, Eddy
5 County, New Mexico.

6 Cases 4925 and 4926 will be consolidated for the
7 purpose of hearing.

8 MR. JENNINGS: James T. Jennings appearing on behalf
9 of Shenandoah. We have one witness. Does the Examiner have
10 any preference as to how we proceed?

11 MR. NUTTER: Probably take the unit agreement first
12 so we can get acquainted with the land.

13 NEIL F. TOLER

14 was called as a witness and, after being duly sworn according
15 to law, testified as follows:

16 DIRECT EXAMINATION

17 BY MR. JENNINGS:

18 Q Would you state your name, place of residence, and occupa-
19 tion, sir.

20 A My name is Neil Toler and I am employed by Shenandoah Oil
21 Corporation.

22 Q Mr. Toler, have you appeared before and testified before
23 the Commission or one of its examiners in the past?

24 A Yes, I have.

25 MR. JENNINGS: Are Mr. Toler's qualifications

1 acceptable?

2 MR. NUTTER: By whom are you employed?

3 THE WITNESS: Shenandoah Oil Corporation.

4 MR. NUTTER: Yes, they are.

5 Q (By Mr. Jennings) Are you familiar with the application
6 filed by Shenandoah seeking approving of the Robinson-
7 Jackson Unit Area Agreement?

8 A Yes, sir.

9 Q I believe, Mr. Toler, this was the unit agreement originally
10 put together by Atlantic-Richfield.

11 A Yes, sir.

12 Q And after being put together and preliminary negotiations
13 worked out, your company acquired the acreage from Atlantic-
14 Richfield.

15 A That's correct.

16 Q And I believe the agreement covers 1160 acres of Federal
17 land.

18 A Correct.

19 Q That is all in Eddy County and all in Township 17 South,
20 Range 29 East.

21 A Right.

22 Q Is Shenandoah Oil Corporation the unit operator?

23 A Shenandoah will be the operator.

24 Q What percentage of working interests does it own?

25 A 100%.

1 Q What is the unitized substance as defined by the unit
2 agreement?

3 A The Grayburg-San Andres formation.

4 Q Is that specifically defined in the unit agreement?

5 A Yes, sir. The Robinson D Well which is the offset well
6 of the No. 8 well in Section 27 is 1830 feet from the
7 south and 1730 feet from the west lines of Section 27.

8 Q Have you submitted this for tentative approval of the
9 USGS?

10 A Yes, sir. I have a letter dated March 15th, 1973.

11 Q Mr. Toler, who is the record title holder of all this
12 acreage?

13 A Atlantic-Richfield is the lessee of record.

14 Q And they have joined in the unit agreement?

15 A Yes, they have signed it.

16 Q Do you think the proposed unit agreement will prevent
17 waste and protect the correlative rights of all interests
18 in the area?

19 A I am a firm believer in that.

20 Q Have you obtained the approval of all royalty owners,
21 overriding royalty owners?

22 A Yes, we have obtained approval of the USGS. It is all
23 Federal land and we have obtained USGS approval. There
24 are overriding royalties in Tracts 1 and 1A and we
25 previously obtained approximately 77% of the overriding

1 interest owners besides the USGS.

2 Q What percentage of the owners have you obtained approval
3 from?

4 A Approximately 77.19% of the overriding royalty interest
5 owners.

6 MR. JENNINGS: At this time we will offer the unit
7 agreement which has been executed by all parties concerned and
8 I will just proceed with the other case.

9 MR. NUTTER: Go right ahead with your waterflood
10 project now.

11 (Whereupon Applicant's Exhibit 1 in Case 4925 was
12 admitted in evidence)

13 Q (By Mr. Jennings) Mr. Toler, are you also familiar with
14 the Shenandoah application for a waterflood project in
15 Eddy County, New Mexico?

16 A I am.

17 Q Briefly what does Shenandoah propose in connection with this
18 application?

19 A A desire to initiate a waterflood project to inject fresh
20 water into the Grayburg-San Andres formation through 16
21 existing wells as described in the application in Section
22 27, 34, and 35, Township 17 South, Range 29 East.

23 Q Are these wells all described in the application?

24 A Yes, sir.

25 Q With the locations set forth therein?

1 A Right, sir.

2 Q. And will you state what you propose to inject into those
3 wells.

4 A We propose to inject fresh water into the wells at a rate
5 of approximately 900 barrels a day in three separate zones
6 which are described later on in the application.

7 Q Please refer to what has been marked as Exhibit A and
8 explain just what that is and what it shows.

9 A Exhibit A is a plat showing the locations of our project.
10 In this particular plat, we have the unit outlined, the
11 project area. You will notice that two wells outside of
12 the unit area are included in the project area. This is
13 comprised of 10 injection wells and approximately 22 pro-
14 ducing wells at the present time that will probably be put
15 on production and injection in the San Andres and Grayburg
16 formations.

17 Q Mr. Toler, this area is in the unit agreement we have just
18 been discussing along with some adjacent land, is that true?

19 A It is shown more clearly in Exhibit B. The adjacent lands
20 are located to the east in Section 26 as shown by the
21 exhibit.

22 Q Referring again to Exhibit A, Mr. Toler, on that you have
23 outlined all of your present injection wells with solid
24 triangles.

25 A. That's correct.

1 Q And the injection wells you propose are outlined in
2 dashed triangles.

3 A That's correct.

4 Q Do you propose to flood these 16 wells simultaneously?

5 A Yes, we propose to put all of those wells on initially.

6 Q What is the general nature of production in the area at
7 this time?

8 A At the present time it is in the range of 80 to 90 barrels
9 a day from a total of 22 producing wells.

10 Q Do you feel that waterflooding these formations, the
11 Grayburg and San Andres, is feasible?

12 A Yes, I do.

13 Q And will it result in ultimate increased recovery.

14 A Yes.

15 Q And I believe you have stated that you're virtually sur-
16 rounded by currently operating waterflood projects.

17 A That's correct.

18 Q Are these offsetting projects successful?

19 A They are successful in several different categories.

20 They are partially unsuccessful because of loss of control
21 and injection. I think we will probably control our in-
22 jection more specifically with bottom hole flow regulators.

23 Q Do you contemplate, assuming the flood is successful,
24 converting additional wells to water injection?

25 A We have an 80 acre five-spot pattern and it's possible

1 that at some future date we might want to convert additional
2 wells to injection in order to form a 40 acre five-spot
3 flood plan.

4 Q And you are requesting the Commission to grant administra-
5 tive approval for such an application?

6 A Yes.

7 Q Now, where do you propose to obtain your water from,
8 Mr. Toler?

9 A There is a commercial water company in the area to the
10 east and we will probably be getting it from one of the
11 commercial water companies.

12 Q Will you inject the produced water when it is available?

13 A Yes, when water breakthrough occurs in conjunction with
14 fresh water.

15 Q What are the exact zones that you propose to flood?

16 A The Grayburg formation to a depth of 2359 feet and into
17 the Jackson zone of the San Andres formation to a depth
18 of approximately 2774 feet.

19 Q How much water do you propose to inject per day?

20 A A total of 900 barrels a day. There are two zones within
21 the Grayburg formation and we will inject 300 barrels a
22 day per zone and 300 barrels into the Jackson zone of the
23 San Andres, making a total of 900 barrels of water per
24 day per well.

25 Q Mr. Toler, referring now to what has been designated as

1 Exhibit C and which consists of 16 separate parts, would
2 you state what this is and describe the exhibit?

3 A Exhibit C are diagrammatic sketches of the injection wells
4 which we propose to convert to injection wells. Each
5 sketch contains the same information as to casing and
6 cementing and the perforated intervals.

7 Q You have this information on each, the same information
8 on each of the wells reflected in the exhibit?

9 A Yes, it is essentially the same information on each dia-
10 gramatic sketch.

11 Q Mr. Toler, referring now to what has been marked as
12 Exhibit D, would you tell us just what that exhibit shows.

13 A Exhibit D is a diagram showing the typical down hole
14 equipment to be installed in each injection well.

15 Q Do you have logs of the wells, Mr. Toler?

16 A I have the available logs given to us by Atlantic-Richfield
17 which consist of ten at the present time, ten of the
18 16 wells listed in the application.

19 Q Mr. Toler, have you requested the approval of the USGS for
20 the waterflood project?

21 A We have.

22 Q I hand you a letter dated March 15th, 1973, from the USGS
23 and ask you if that is the letter you received from them
24 approving the project.

25 A This is a copy of the letter we received from the USGS

1 outlining their approval and recommendations for further
2 requirements in regard to plats showing treating plat
3 locations.

4 Q Are you prepared to comply with all of the regulations
5 and requirements made by the USGS?

6 A Yes, I am.

7 Q Do you have anything further you wish to add in connection
8 with this application?

9 A Not at this time.

10 MR. JENNINGS: We have nothing further to offer, but
11 we do offer Exhibits A through E and we would also like to
12 offer the logs as exhibits if you would like them.

13 MR. NUTTER: Would you offer them as a package under
14 Exhibit F?

15 MR. JENNINGS: As a package, yes.

16 MR. NUTTER: Without objection Applicant's Exhibits
17 A through F will be admitted in evidence.

18 (Whereupon Applicant's Exhibits A through F were
19 admitted in evidence)

20 CROSS EXAMINATION

21 BY MR. NUTTER:

22 Q Do you anticipate that each of the injection wells will
23 have three injection zones?

24 A I anticipate every injection well will --- we have yet
25 alot of work to do in this area and I must point out

1 that the Jackson zone is the predominant producing zone in
2 the area. The metex tends to thin out in Section 27 and
3 it might be possible that we might not have metex in one
4 or two of the injection wells. However, I feel that
5 Loco Hills is productive in the area and we may have Loco
6 Hills and Jackson in all the wells.

7 Q Whether or not you had all three zones, you would still
8 have this uppermost packer shown on Exhibit B?

9 A Yes, sir.

10 Q So in all cases, your annularus will be added above a packer
11 and have a gauge at the surface.

12 A Yes.

13 Q And you anticipate that this 300 barrels would be the rate
14 of injection into each of the zones per day.

15 A Yes. We are limiting it to that right now because if you
16 take the total number of wells times 900 barrels, it's
17 approximately 14,400 barrels a day. At some later date,
18 we may be able to increase that.

19 MR. NUTTER: Are there any further questions of Mr.

20 Toler?

21 (No response)

22 MR. NUTTER: He may be excused.

23 (Witness excused)

24 MR. NUTTER: Do you have anything further, Mr.

25 Jennings?

1 MR. JENNINGS: I would offer one observation even
2 though I'm sure it's not required. We have to have this
3 approved by July 1st.

4 MR. NUTTER: If there is nothing further, we will
5 take Cases 4925 and 4926 under advisement.

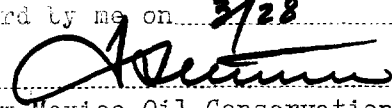
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1 STATE OF NEW MEXICO)
) ss.
2 COUNTY OF BERNALILLO)

3 I, RICHARD E. McCORMICK, a Certified Shorthand Reporter,
4 do hereby certify that the foregoing and attached Transcript of
5 Hearing before the New Mexico Oil Conservation Commission was
6 reported by me; and that the same is a true and correct record
7 of the said proceedings, to the best of my knowledge, skill and
8 ability.

9 
10 Certified Shorthand Reporter

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23 I do hereby certify that the foregoing is
24 a true and correct record of the proceedings in
the Examiner hearing of Case No. 4925-4926
heard by me on 3/28, 19 73.

25 , Examiner
New Mexico Oil Conservation Commission

I N D E XWITNESSPage

NEIL F. TOLER

Direct Examination by Mr. Jennings

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Cross Examination by Mr. Nutter

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EXHIBITSOfferedAdmitted

Exhibit 1 in Case 4925

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Exhibit A in Case 4926

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Exhibit C in Case 4926

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Exhibit D in Case 4926

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Exhibit E in Case 4926

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Exhibit F in Case 4926

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