CASE 3854: Application of SINCLAIR 401L & GAS CO. FOR SALT WATER DISPOSAL, LEA COUNTY, N. MEX.

ase Number Application Transcripts. Small Exhibits

GOVERNOR DAVID F. CARGO CHAIRMAN

State of New Mexico **Bil Conservation** Commission

LAND COMMISSIONER GUYTON B. HAYS MEMBER



STATE GEOLOGIST A. L. PORTER, JR. SECRETARY - DIRECTOR

P. O. BOX 2068 SANTA FE

September 12, 1968

Mr. Charles White White, Gilbert, Koch & Kelly Attorneys at Law Post Office Box 787 Santa Fe, New Mexico

Re:	Case No.	3854	
	Order No.	R-3498	
	Applicant:		
	Sinclair Of	l & Gas Co.	

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

Tulu

A. L. PORTER, Jr. Secretary-Director

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Carbon copy of drder also sent to:

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Irtesia OCC

Aztec OCC

Other Mr. Harold Berends - Bureau of Land Management

and State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE No. 3854 Order No. R-3498

APPLICATION OF SINCLAIR OIL & GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION :

This cause came on for hearing at 9 a.m. on September 4, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this <u>12th</u> day of September, 1963, the Commission, a quorum being present, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sinclair Oil & Gas Company, is the owner and operator of the Ballard DE Federal Well Mo. 6, located in Unit L of Section 22, Township 20 South, Range 34 East, NNPM, Lynch Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Yates formation, with injection into the perforated interval from approximately 3636 feet to 3700 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 3600 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge -2-CASE No. 3854 Order No. R-3498

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should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Sinclair Oil & Gas Company, is hereby authorized to utilize its Ballard DE Federal Well No. 6, located in Unit L of Section 22, Township 20 South, Range 34 East, NMPM, Lynch Field, Lea County, New Mexico, to dispose of produced salt water into the Yates formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3600 feet, with injection into the perforated interval from approximately 3636 feet to 3700 feet;

<u>PROVIDED HOWEVER</u>, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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



STATE OF NEW MEXICO OIL CONSERVATION COMMISSION DAVID F. CARGO/ Cha HA PORTER, Jr., Member & Secretary Ľ.

Care 3854 Recard 9- 4-68 Rec. 9-6-68 thank Sudai permission to courset. their Ballard DE Ded. #6, 800+44 1650/5, 290/w(L)22-205-34E. to a SuD wellin the Hill Fynch - yates Zone of this Pool. internally Pla dividention shall the thing tuking & under a packer to be set at approx 3600 The and

Hearing



SINCLAIR OIL & GAS COMPANY P. O. Box 1470 MIDLAND, TEXAS 79701

August 5, 1968

WEST TEXAS REGION

New Mexico Oil Conservation Commission Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr. Secretary-Director

Gentlemen:

Sinclair Oil & Gas Company hereby makes application for a hearing to permit the disposal of produced salt water into its Ballard DE Federal Well No.-6, located in Section 22, T-20S, R-34E, Lynch Pool, Lea County, New Mexico.

Attached please find: Plat of Area; Electrical Log; Diagrammatic Sketch of Well and form C-108.

Yours very truly Use R. M. Anderson

Region Regulatory Engineer

Attachments (4)

RMA/rd

White, Guilbert, Koch & Kelly cc: P.O. Box 787 Santa Fe, New Mexico 37501

Horace Burton

368 AUG 6 AH 8 36

DOCKET MAILED Date 8/22/68

all Form C-108 (Revised 1-1

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

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NOTE: Should waivers from the State Engineer, the suifade owher, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Otl Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.



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	Y MEXICO	BEFORE THE NEW MEXICO OIL CONSERVATION Santa Fe, New Mexic September 4, 1968 <u>EXAMINER HEARING</u>	COMMISSION
	ALBUQUERDUE, NEW MEXICO	IN THE MATTER OF:	• • • • • • • • • • • • • • • • • • • •
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MR. UTZ: Case 3854.

MR. HATCH: Case 3854. Application of Sinclair Oil and Gas Company for salt water disposal, Lea County, New Mexico. MR. WHITE: Charles White, White, Gilbert, Koch and Kelly, Santa Fe, New Mexico, appearing on behalf of the Applicant. I have one witness to be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Numbers 1 through 6 were marked for identification.)

MR. UTZ: Are there any other appearances in this case? You may proceed.

R. M. ANDERSON

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

0 Will you state your full name for the record and state by whom you are employed and in what capacity.

A R. M. Anderson. I'm Region Regulatory Engineer of Sinclair Oil and Gas Company in their Midland, Texas office.

Q Have your professional qualifications been accepted by the Commission previous to this hearing?

A Yes, they have.

Q Will you state what Sinclair seeks by the subject application?

A Sinclair seeks permission to dispose of produced salt water from its Ballard DE Federal, its Fletcher A-DE Federal and its Gulf DE Federal Leases in the Lynch-Yates-Seven Rivers Pool, Lea County, New Mexico, by injecting said produced water into its Ballard DE Federal Well Number 6.

Q Will you explain Exhibit Number 1?

A Exhibit Number 1 is an area map in the vicinity of the Sinclair leases. The Yates-Seven Rivers producers have been colored in green. The Bone Springs producers which are located in the northeast part of the exhibit, and the Pennsylvanian and Devonian producers are colored in red, purple and yellow on said map. The deeper production is in the Lea Field.

Q And this shows the three leases of which you spoke? A Well, the lease that is colored in red is our Ballard Lease which has the proposed disposal well circled in orange thereon and indicated as a dry hole. Immediately south of the area colored in red is Sinclair's Fletcher A-DE Federal Lease, and our Gulf DE Federal Lease is a 40-acre lease occupying the southwest quarter of the southwest quarter of Section 27. It's a one-well lease.

Q Will you now refer to Exhibit 2 and explain that

A Exhibit 2 is an area map of the same area and I have indicated with yellow ovals the current allowables of all producing wells within a mile of our proposed injection well.

For instance, the Well Number 5 immediately south of the proposed injection well has an August, 1968 allowable of 58 barrels.

Q This exhibit shows a state of depletion in the area, does it not?

 Λ Yes. The other wells are marginal wells and are so indicated on the map.

Q Will you explain Exhibit 3?

A Exhibit 3 is Commission Form C-108 and contains all of the pertinent data requested by the Commission in applications of this nature.

Q Is it self-explanatory?

A I believe so.

Q What volume of water do you anticipate?

A We anticipate disposing about 1500 pounds per day.

Q Under what pressure?

A We're not sure of how much pressure it will take.

We're asking for as much as 1800 pounds. Exhibit Number 4 is a diagrammatic sketch reflecting the data that is tabulated on

Exhibit 3.

Q

Will this be a retrievable packer, a standard brand?

A Yes, this will be a retrievable packer right on the end of the tubing. We will fill the annulus with corrosion inhibited fluid. We will equip the well with a pressure gauge on the annulus and we will use plastic lined tubing; two-inch tubing, plastic lined.

Q In your opinion, will this installation prevent the injected water from entering other zones?

A Yes. In my opinion, the injected water will not be able to enter any other zone but the zone opposite the perforations which is the producing zone in the Yates-Seven Rivers-Lynch Field .

Will you explain Exhibit 5?

Q

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A Exhibit 5 is a tabulation of all of the wells within a mile of the proposed disposal well. Those are the wells with the allowables shown on Exhibit 2, and this exhibit reflects that none of the wells are completed lower than the proposed disposal well and most of them are completed considerably higher than the proposed disposal well. The proposed disposal well was drilled in 1965 and completed as a dry hole.

It tested 100% water and was low, structurally, to the other producing wells in the field.

Will you explain Exhibit 6, please?

A Exhibit 6 is the sonic gamma-ray log on the disposal well and I have indicated the current perforations which will be used for disposal purposes and which are the same perforations as listed on Exhibit 3 and Exhibit 4.

Q Were these exhibits prepared by you or under your direction?

A Yes, they were.

MR. WHITE: At this time, we offer Exhibits 1 through 6 and that completes our direct.

MR. UTZ: Without objection, Exhibits 1 through 6 will be entered into the record in this case.

> (Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were entered in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Referring to Exhibit 2, all these allowables shown here are Lynch-Yates allowables?

A Except for the two wells, the northernmost two wells which are Lynch-Yates-Seven Rivers middle pool. These wells are completed a little higher in the section than our disposal well, maybe 100 to 150 feet higher in the section, about 100 feet higher in the section. These Lynch-Yates-Seven Rivers middle pool wells are the first two wells listed on my Exhibit 5 immediately after the proposed disposal well.

Q You don't anticipate injection of water into the Yates Zone will be harmful to production in the area? A No, sir. It might prove helpful. The Yates-Seven Rivers Zones have flooded successfully and, if anything, it could prove helpful. It certainly will tend to offset the natural pressure declines that are occurring as a result of production. So I would anticipate, if anything, that the injection will be helpful. It's apparently into a zone below the oil-water contact and insofar as results in a natural water encroachment, it will be helpful towards increasing the ultimate recovery of oil from this field.

Q How much water do you anticipate that you will inject here?

A Well, we're going to start off with about 1600 barrels of water per day, and we have been experimenting with Reeder Pumps in this area. We anticipate most wells make appreciable amounts of water in this northern part of the field where Sinclair properties are located and we anticipate that we will have more water than this 1600 barrels of water a day, fairly soon, when we get our Reeder Pumps going and if they work out all right, if it's successful.

MR. UTZ: Are there any questions of the witness? He may be excused. Any statements? The case will be taken under advisement.

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	WITNESS			PAGE
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	Cross Examinati	on by Mr. Utz	1 x.	6

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

I, CHARLOTTE MACIAS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability. Witness my Hand and Seal this 7th day of October, 1968.

Notary Public

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My Commission Expires: February 10, 1971.

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Form C-108 Revised 1-1-65

NEW MEXICO	OIL	CONSERVATION	COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

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SINCLAIR OIL & GAS COMPANY COMPLETION INTERVALS (GROSS) OF ALL PRODUCING WELLS WITHIN ONE MILE OF PROPOSED DISPOSAL WELL

<u>Operator, Lease & Well</u>	Elevation	Gross Comp. Inter.	Subsea <u>Interval</u>
Proposed SWD Well Sinclair, Fed. Ballard DE #6	3667	3636-3700	+31/-33
Berry, Muse #1 Hanson, Fed. RB #1 Sinclair, Fed. Ballard DE #5 Vogel, D & E Fed. #1 Vogel, D & E Fed. #2 Vogel, R&B Fed. #1 Sunset, Perry Fed. #1 Burke, Han. Fed. C #1 Sinclair, Fed. Ballard DE #2 Sinclair, Fed. Ballard DE #3 Sinclair, Fed. Ballard DE #4	3679 3675 DF 3686 3687 DF 3688 DF 3692 DF	3523-3560	+135/+114 +126/+89 +180/+48 +121/-14 +31/-5 +37/-6 +94/-90 +98/+90 +39/+2 +77/+23 +121/+107

	and the second
	BEFORE EXAMINER UTZ
	CIL CONSERVATION COMMISSION
\langle	SINCLAIR EXHIBIT NO. 5
	CASE NO. 3854

Ì	Sinclair.Oil & Gas Co. 3854
	3854
	Exhibit No.
	EAHOID TTOP