CASE 3971: Application of SOUTHERN MINERALS FOR SALT WATER DISPOSAL, CHAVES COUNTY, NEW MEXICO.

Number ase Application Transcripts. Small Exhibits

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

December 2, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Southern)
Minerals Corporation for)
salt water disposal,)
Chaves County, New Mexico.)

Case No. 3971

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING



MR. NUTTER: Case 3971.

MR. HATCH: Application of Southern Minerals
Corporation for salt water disposal, Chaves County, New Mexico.

MR. COOTER: Paul Cooter, of Atwood and Malone, appearing for the applicant. I have one witness, William McCoy.

(Whereupon, Applicant's Exhibits Numbers 1 through 4, inclusive, were marked for identification.)

WILLIAM G. McCOY

called as a witness on behalf of the Applicant, and having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. COOTER:

- Q Would you state your name for the record, please?
- A William G. McCoy.
- O You are a graduate of Texas A&M?
- A Correct.
- Q You have previously testified before the Oil Conservation Commission?
 - A I have.
 - Q And made your qualifications a matter of record?
 - A That's right.

MR. COOTER: Are they acceptable to the Examiner?

MR. NUTTER: Yes, they are.

- Q What is your relationship, Mr. McCoy, with Southern Minerals Corporation, the applicant in this case?
- A I'm on a retainer fee from Southern Minerals
 Corporation as a consultant.
- Q What does Southern Minerals Corporation seek to do by this application?
- A Southern Minerals Corporation seeks to dispose of produced salt water in their No. 1, 2, 3, and 4 State "C" Wells, into a previously abandoned producer, located 1,980 feet to the west, and 660 from the north of Section 1, Township 8 South, Range 33 East.
- Q I will hand you what is marked as Exhibit Number 1, a map. Does that show the proposed injection well?
 - A It does.
- Q That is in the northeast quarter of the northwest quarter of Section 1?
 - A That's right.
 - Q Into what formation will the water be injected?
 - A San Andres Formation.
- Q This map, Exhibit Number 1, shows some contour lines on it. What are those?
 - A Those are contours depicting the subsurface structure

of the Slaughter Zone of the San Andres, which is the principal producing reservoir of the Chaveroo Field.

- Ω This is the reservoir from which this proposed injection water is produced, and into the same zone it will be injected?
 - A Right.
- O There is one well noted down in Section 12, which appears to be lower on the formation than the proposed injection well. By whom is that operated?
- A That is operated by Jack McClellan of Roswell, New Mexico.
 - Q Have you discussed this matter with him?
- A I have, by phone conversation. Mr. McClellan advised that this well is currently a marginal producer, and due to the salt water produced, he doesn't feel it would be economical to join or pay the expenses of disposing of the water, and he has already secured Marathon's approval to plug and abandon the well, which will probably occur during this week.
- Q Have the other offset operators been notified of this application by Southern Minerals Corporation?
 - A They have.
 - Q And return receipts received from all of them?

A That is correct.

MR. COOTER: We have those, if the Examiner would like them. We hadn't planned to offer them.

MR. NUTTER: They are not necessary.

- Was Exhibit Number 1 prepared by you?
- A It was.
- Q Next, I hand you what we have marked as Exhibit 2, and I ask you to relate what this is.

A This is a Xerox copy of the detailed section of a formation density log run on the No. 5-C State Well.

- O This is the proposed injection well?
- A It is.
- Q And are the perforations or holes marked?
- A They are shown there as indicated on the log. I might mention that the contour marker on the contour map is the top of the Slaughter, as shown on the log.
- Q Next, I hand you what has been marked as Exhibit 3, and ask you to relate what that exhibit shows.
- A Exhibit 3 shows the diagrammatic sketch of the well as it exists in the proposed installation of the salt water disposal system.
- Q Let's start with your surface casing on that. Was that cemented from the bottom of that surface casing to the

surface?

A That is correct. Eleven-inch hole was drilled to a total depth of 378 feet, and eight and five-eighths, twenty-four-pound run to 378 feet, cemented with 250 sacks of cement, which was circulated to the surface.

- Q Then the production string, sir?
- A Production string was run to a total depth of 4,500 feet, consisted of four and a half, ten and a half J-55 casing, cemented with 350 sacks. According to Halliburton, the top of the casing is 3,400 feet.
 - 0 When was that determined by Halliburton?
 - A At the time the cement job was completed.
 - Q Now, your tubing?

A The proposed installation of the salt water disposal system would consist of two and three-eighths, 4.7-pound J-55 tubing, plastic-lined, set on a packer, Model R packer at a depth of 4,200 feet. The disposal water would be injected below 4,200 feet. The annulus behind the two and three-eighths and four and a half would be filled with either oil or treated water.

- Q And there would be a pressure gauge installod?
- A A pressure gauge would be installed on the annulus to protect pressure leakage.

- Was this exhibit prepared by you?
- Λ It was.
- O I will hand you the final exhibit, Exhibit 4, and ask you what that is.

A Exhibit 4 is a water analysis prepared by Halliburton of Lovington, New Mexico, showing the characteristics of the San Andres water as produced on State "C" Lease. This is a typical San Andres water in the Chaveroo Field.

Q What about the water production, or the water that will be injected into No. 5 Well?

A A summary of the production since January, 1968, shows the average monthly production of water from the State "C" Lease to be 958 barrels per month.

- Q That is from Wells No. 1 through 4?
- A That is correct.

MR. COOTER: We would move to amend the application in that respect from 400 barrels per month to 1,000 barrels per month.

MR. NUTTER: The application will be so amended.

MR. COOTER: That concludes the direct testimony.

MR. NUTTER: Any questions of Mr. McCoy?

CROSS EXAMINATION

BY MR. NUTTER:

- O Mr. McCoy, as I understand your Exhibit Number 2, you will be going into the very top part of the Slaughter Formation?
 - A We have one proration there.
- Q With one proration up there, and then the remainder of the water would go into the top zone?
 - A Right.
- O And the wells which you show to the west and northwest of your disposal well are all producing from the Slaughter Zone?
 - A Yes, sir.
- Q And they are all structurally higher than this proposed disposal zone, with the exception of the one McClellan well you referred to?
 - A Yes, sir.

MR. NUTTER: Any further questions? You may be excused. Do you have anything further?

MR. COOTER: I would offer the exhibits.

MR. NUTTER: Applicant's Exhibits 1 through 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Numbers 1 through 4, inclusive, were admitted in evidence.)

MR. NUTTER: Does anyone have anything they wish to offer in Case No. 3971? We will take the case under advisement.

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STATE	OF 1	NEW	MEXICO)	
)	SS
COUNTY	OF	BEI	RNALILLO)	

I, SAM MORTELETTE, Court Reporter 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.

COURT REPORTER

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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

December 9: 1968

Mr. Paul Cooter Atwood & Malone Attorneys at Law Post Office Box 700 Roswell, New Mexico 88201

Re: Case No. 3971
Order No. R-3615
Applicant:

Southern Minerals Corp.

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

ALP/ir		
Carbon copy o	of order also sent to:	
Hobbs OCC	K	
Artesia OCC	×	
Aztec OCC		
Othor	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. 3971 Order No. R-3615

APPLICATION OF SOUTHERN MINERALS CORPORATION FOR SALT WATER DISPOSAL, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 2, 1968, at Santa Fe, New Møxico, before Examiner Daniel S. Nutter.

NOW, on this 9th day of December, 1968, 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, Southern Minerals Corporation, is the owner and operator of the State "C" Well No. 5, located in the NE/4 NW/4 of Section 1, Township 8 South, Range 33 East, NNPM, Chaveroo-San Andres Pool, Chaves County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the perforated interval from approximately 4239 feet to 4416 feet.
- (4) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 4200 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should

-2-CASE No. 3971 Order No. R-3615

be attached to the annulus 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, Southern Minerals Corporation, is hereby authorized to utilize its State "C" Well No. 5, located in the NE/4 NW/4 of Section 1, Township 8 South, Range 33 Bast, NMPM, Chaveroo-San Andres Pool, Chaves County, New Mexico, to dispose of produced salt water into the San Andres formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4200 feet, with injection into the perforated interval from approximately 4239 feet to 4416 feet;

PROVIDED HOWEVER, 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 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 CONNERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON DO HAYS, Member

A. L. PORTER, Jr., Member & Secretary

DOCKET: EXAMINER HEARING - MONDAY - DECEMBER 2, 1968

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

- CASE 3968: Application of Texaco, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from approximately 12,400 feet to 12,550 feet in its U. D. Sawyer Well No. 4 located in Unit O of Section 34, Township 9 South, Range 36 East, Crossroads-Devonian Pool, Lea County, New Mexico.
- CASE 3969: Application of Sinclair Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Lea 878 State Well No. 1 located in Unit K of Section 4, Township 14 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from an undesignated Wolfcamp pool and oil from the Cerca-Upper Pennsylvanian Pool through parallel strings of tubing.
- CASE 3970: Application of Superior Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its State "K" Well No. 1 located in Unit J of Section 4, Township 14 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from an undesignated Wolfcamp pool and oil from the Cerca-Upper Pennsylvanian Pool through parallelstrings of tubing.
- CASE 3971: Application of Southern Minerals Corporation for salt water disposal, Chaves County, New Mexico. Applicant, in the abovestyled cause, seeks authority to dispose of produced salt waterinto the San Andres formation in the perforated interval from approximately 4239 feet to 4416 feet in its State "C" Well No. 5 located in the NE/4 NW/4 of Section 1, Township 8 South, Range 33 East, Chaveroo-San Andres Pool, Chaves County, New Mexico.
- CASE 3972: Application of Sunset International Petroleum Corporation for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Bough "C" zone of the Pennsylvanian formation in the perforated interval from approximately 9679 feet to 9685 feet in its O'Neill State Well No. 1 located in Unit L of Section 16, Township 8 South, Range 36 East, South Prairie-Cisco Pool, Roosevelt County, New Mexico.

Nov 2

BALIK OF

610 SECURITY NATIONAL BANK BLDG. ROSWELL, NEW MEXICO 88201

November 12, 1968

Mr. A.L. Porter, Jr. New Mexico Oil Conservation Commission P.O. Box 2088 Santa Fe, New Mexico 87501

Reference: Application for salt water

disposal well NE/4 NW/4 Sec.1 T-8-S R-33-E Southern Mineral Corporation

Dear Mr. Porter:

Attached are the original and one copy of the application referred to above. Please examine these data and advise if they are sufficient to be scheduled for the December 2, 1968 hearing. Please direct your advisement to: Southern Mineral Corporation, P.O. Box 716, Corpus Christi, Texas 78403, Attention: Mr. E.F. Bowers, with a carbon copy to me at this address.

Very truly yours,

WGM:re cc: Mr. E.F. Bowers

DOCKET MARKED

Date 11-21-68
Vaice 397/

BEFORE OIL CONSERVATION COMMIS CKSE NO. 3971 TXAMINER NOT

342·A

HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY MIDLAND DIVISION CASE NO. 3971

	LABORATORY WA	TER ANALYSIS No. 11-158-00
To Bill McCoy		Date_ <u>11-25-68</u>
Roswell, New	Mexico	and employees thereof receiving such report from Hulliburto
Submitted by		Date Rec11-22-68
Well No	Depth	Formation
County	Field Southern Minerals "C" Lease	Source
Resistivity	.048 9 71 F.	
Specific Gravity	3 300	
рННа		
Calcium (Ca)	28,000	
Magnesium (Mg)	9,600	The annual contract of the second
Chlorides (Cl)	161,500	BEFORE EXAMINER NUTTER
Sulfates (SO ₄)	120	OIL CONSERVABLE A
Bicarbonates (HCO ₃)	390	010 EXBERT NO. 4 CHE NO. 3971
Soluble Iron (Fe)	Nil	
Sulfides (H2S)	5	
		And the second s
	4.	-
Remarks:	•	*Milligrams per liter
		•
-	Respectfully su	ubmitted,
Analyst: Whitfield		HALLIBURTON COMPANY
cc:		

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF SOUTHERN MINERALS CORPORATION FOR AUTHORITY TO DISPOSE OF PRODUCED SALT WATER INTO THE SAN ANDRES FORMATION IN ITS STATE C LEASE, WELL NO. 5, LOCATED IN THE NE \$\frac{1}{4}\text{NW} \frac{1}{4}\text{SECTION 1,} TOWNSHIP 8 SOUTH, RANGE 33 EAST, N. M. P. M., CHAVES COUNTY, NEW MEXICO.

No. 397/

APPLICATION

COMES NOW Southern Minerals Corporation and respectfully presents this application to the Oil Conservation Commission of the State of New Mexico for an order permitting it to dispose of produced salt water into the San Andres formation in the interval from 4,239 feet to 4,416 feet in its State C Lease, Well No. 5, situate in the NE½NW½ Section 1, Township 8 South, Range 33 East, N.M.P.M., Chaves County, New Mexico, through plastic coated tubing with a packer set at 4,200 feet and the annulus filled with inert fluid, and a pressure gauge installed thereon, and in support thereof states:

- 1. Attached hereto, marked Exhibit "A", is a plat showing the location of the proposed injection well and the location of all other wells within a radius of two miles from the proposed injection well. The plat also indicates the lessees within this two mile radius. All such wells, including applicant's wells Nos. 1 through 4 on its State C Lease, are producing from the San Andres formation only.
- 2. Attached hereto, marked Exhibit "B", is the log of the proposed injection well.

3. Attached hereto, marked Exhibit "C", is a diagrammatic sketch of the proposed injection well showing all casing strings, including diameters and setting depths, quantities used in tops of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths and the type and location of packers, if any.

The salt water to be disposed of would be that produced by applicant from its wells Nos. 1 through 4, the anticipated volume of which would be approximately 400 barrels per month.

WHEREFORE, Southern Minerals Corporation requests that this application be set for examiner hearing and that after such hearing this Commission enter its order authorizing the salt water disposal as herein requested.

Respectfully submitted,

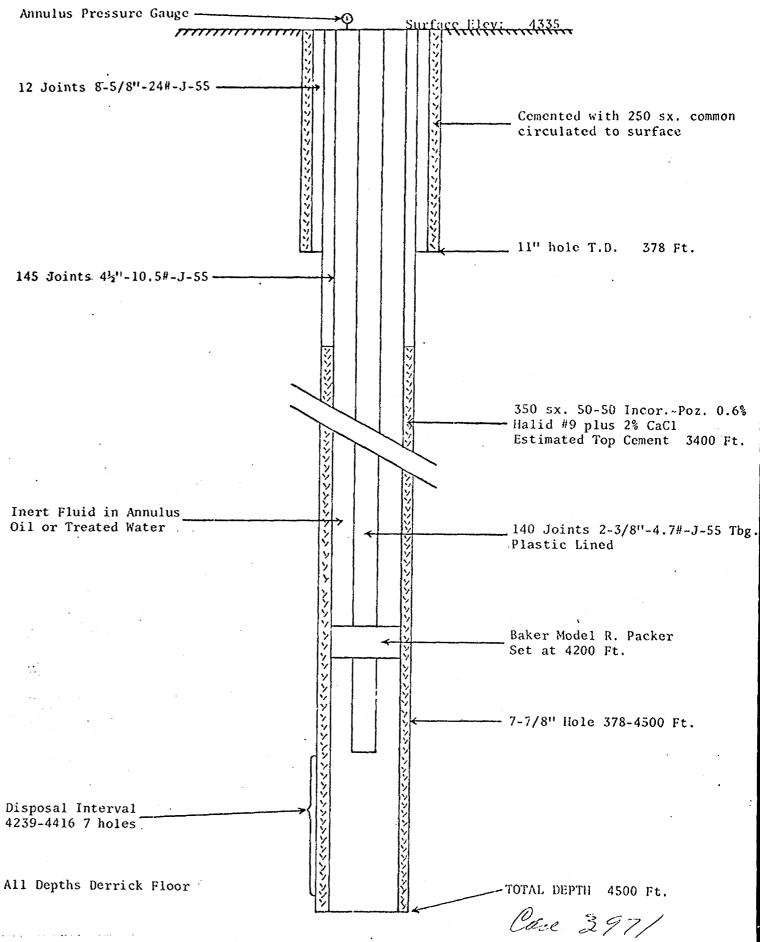
SOUTHERN MINERALS CORPORATION

ATWOOD & MALONE

Its Attorney

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EXHIBIT "C" DIAGRAMMATIC SKETCH OR PROPOSED INSTALLATION SOUTHERN MINERALS CORPORATION No. 5 STATE "C"



GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

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CASE No. 3971
Order No. R- 36/5

APPLICATION OF SOUTHERN MINERALS CORPORATION FOR SALT WATER DISPOSAL, CHAVES COUNTY, NEW MEXICO.

Jun 2

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 2, 1968, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this <u>day of December</u>, 1968, 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, Southern Minerals Corporation
 is the owner and operator of the State "C" Well No. 5

 the NE/4 NW/4
 located in V////// of Section 1 , Township South , Range

 33 East , NMPM, Chaveroo-San Andres Pool , Chaves

 County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the perforated interval from approximately 4239 feet to 4116 feet.
- (4) That the injection should be accomplished through 236 -inch plastic-lined tubing installed in a packer set at

approximately 4200 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packers

(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, Southern Minerals Corporation
is hereby authorized to utilize its State "C" Well No. 5
the NE/4 NW/4 located in phit//// of Section 1 Township 8 South, Range
33 East, NMPM, Chaveroo-San Andres Pool Chaves
County, New Mexico, to dispose of produced salt water into the
San Andres formation, injection to be accomplished through
23/8 -inch tubing installed in a packer set at approximately
4200 feet, with injection into the perforated interval
from approximately 4239 feet to 4416 feet;

PROVIDED NOWEVER, 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.