

*Set for hearing Case 2762***PAN AMERICAN PETROLEUM CORPORATION**

P. O. Box 480, Farmington, New Mexico  
January 30, 1963

File: N-80-986.510.1

Subject: Application to Dispose of  
Salt Water in Pan American  
Petroleum Corporation's  
USG Section 19 Well No. 17  
Hogback Pennsylvanian Pool  
San Juan County, New Mexico

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NMOC

Mr. A. L. Porter, Jr., Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Dear Sir:

Pan American Petroleum Corporation hereby makes application under the Administrative Provisions of Rule 701 for permission to dispose of salt water produced from the Hogback Pennsylvanian Pool into the 7" - 9-5/8" casing annulus in its USG Section 19 Well No. 17, located in Unit I of Section 19, T-29-N, R-16-W, San Juan County, New Mexico. In connection with this application, attached are the following exhibits:

1. Three copies of NMOC form entitled Application to Dispose of Salt Water by Injection into a Porous Formation Not Productive of Oil or Gas. A copy of this form is also being sent to the New Mexico State Engineer and to the U.S.G.S. as representatives of the Navajo Tribe of Indians, the surface owner. There are no offset operators to the USG Section 19 lease.
2. A map of the area showing the location of USG Section 19 Well No. 17 in the SE/4 of Section 19, T-29-N, R-16-W, and the location of the USG Section 19 Well No. 13 in the NE/4 of Section 19, T-29-N, R-16-W. These are the only two wells producing from the Hogback Pennsylvanian Pool.
3. A copy of the Electric Log on USG Section 19 Well No. 17 showing the 9-5/8" casing point at 2157', approximately 112' below the top of the Entrada formation, and the top of the cement behind the 7" casing at 3100' or about 330' below the top of the Chinle formation.
4. A Schematic Diagram showing the casing program which was employed on USG Section 19 Well No. 17 together with the approximate location of the various formation tops in

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this well. This diagram also shows the present completion zone in the Hogback Pennsylvanian Pool and the amount of cement used on each casing string. It is the interval 2157', the 9-5/8" casing seat, to 3100', the top of the cement behind the 7" casing, that is proposed for use as a salt water disposal interval.

5. A copy of a letter from Mr. P. T. McGrath, District Engineer for the U.S.G.S., dated December 21, 1962, which advises that the U.S.G.S. does not object to the use of the interval 2157' to 3100' for disposition of the produced Hogback Pennsylvanian Pool salt water.
6. A copy of a letter from the State Engineer's Office dated January 28, 1963, advising that that office has no objection to the use of this interval as a disposal zone.
7. A copy of a water analysis obtained on a drill stem test from the Entrada zone on Pan American's Navajo Tribal No. 1, a dry hole located 790' from the north line and 1090' from the west line of Section 12, T-29-N, R-17-W, which shows the Entrada water to contain in excess of 9,000 parts per million total solids. A notation on the analysis indicates that this sample was contaminated with drilling fluids, and since the well was drilled with a fresh water base mud, it is concluded that the formation water may have salinity in excess of that shown by the water analysis form.

With regard to the use of the Entrada-Chinle interval in USG Section 19 Well No. 17 as a salt water disposal zone, the following points are submitted:

1. The proposed disposal interval is not known to be productive of oil, gas or fresh water anywhere in the vicinity of the Hogback Pennsylvanian Pool.
2. The casing program used on this well adequately protects the known fresh or brackish water zones of the Dakota-Morrison formation from contamination by the injected water and also protects the Hogback Pennsylvanian Pool producing interval from the injected water.
3. NMOCC Order R-2341 granted Pan American permission to use a watered out Pennsylvanian gas zone from 6514-24' in USG Section 19 Well No. 13 as a salt water disposal zone. In attempting to dispose of salt water into this zone it was found that extremely high injection pressures

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were necessary and, accordingly, the interval now proposed in USG Section 19 Well No. 17 was tested as a possible alternate salt water disposal zone. It was found that this interval would accept the volume of salt water being produced from the Hogback Pennsylvanian Pool at an injection pressure of about 350 psig.

It is therefore the purpose of this application to secure your approval for the use of the Entrada-Chinle zone of the Jurassic and Triassic age in USG Section 19 Well No. 17 as an alternate salt water disposal zone to that zone which was approved by Order R-2341.

Yours very truly,

PAN AMERICAN PETROLEUM CORPORATION

A handwritten signature in dark ink, appearing to read 'T. M. Curtis', is written over the typed name.

T. M. Curtis  
District Superintendent

GWE:en

Attachments

Case 2762

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

APPLICATION  
TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION  
NOT PRODUCTIVE OF OIL OR GAS

Operator Pan American Petroleum Corporation Address Box 480, Farmington, New Mexico

Lease USG Section 19 Well No. 17 County San Juan

Unit I Section 19 Township 29 Range 16

This is an application to dispose of salt water produced from the following pool(s):

Hogback Pennsylvanian

Name of Injection Formation(s): Entrada-Chinle

Top of injection zone: 2157' Bottom of injection zone: 3100'

Give operator, lease, well no , and location of any other well in this area using this same

zone for disposal purposes: None

CASING PROGRAM

	Diameter	Setting Depth	Sacks Cement	Top of Cement
Surface	13-3/8"	251	250	Surface
Intermediate	9-5/8"	2157	625	772
Long String	7"	5613	475	3100

Will injection be through tubing, casing, or annulus? Annulus

Size tubing 2-3/8" Setting depth: 6645' Packer set at. 6612'

Name and Model No. of packer Lane Wells BOCL-4A

Will injection be through perforations or open hole? Open hole between 7" and 9-5/8" casing strings

Proposed interval(s) of injection: 2157-3100'

Well was originally drilled for what purpose? Gas Well

Has well ever been perforated in any zone other than the proposed injection zone? Yes, Still producing oil from casing perforations 6643-59'. Also originally completed in Pennsylvanian gas zone.

List all such perforated intervals and sacks of cement used to seal off or squeeze each:  
6530-70' squeezed with 200 sacks. Re-perf and squeezed with 150 sacks. 6396-6426' squeezed with 200 sacks. 6350-70' squeezed with 150 sacks. 6045-80' squeezed with 200 sacks. Re-perf and squeezed with 200 sacks.

Give depth of bottom of next higher zone which produces oil or gas: 960'

Give depth of top of next lower zone which produces oil or gas. 6643'

Give depth of bottom of deepest fresh water zone in area: No fresh water in area. Morrison contains brackish water.

Expected volume of salt water to be injected daily (barrels): 750

Will injection be by gravity or pump pressure? Pump Estimated pressure: 350

Is system open or close type? Open Is filtration or chemical treatment necessary? No

Is the water to be disposed of mineralized to such a degree as to be unfit for domestic, stock, irrigation, and/or other general use? Yes

Is any water occurring naturally within the proposed disposal formation mineralized to such a degree as to be unfit for domestic, stock, irrigation, and/or other general use? Yes

List all offset operators to the lease on which this well is located and their mailing address

No offset operators

Name and address of surface owner Navajo Tribe of Indians, c/o U.S.G.S, P. O. Box 959,  
Farmington, New Mexico

Have copies of this application been sent by registered mail or given to all offset operators, surface owners, and to the New Mexico State Engineer? Yes

Is a complete electrical log of this well attached? Yes

Operator: PAN AMERICAN PETROLEUM CORPORATION

By: T. M. Curtis

Title: District Superintendent

STATE OF New Mexico )  
 ) ss.  
County of San Juan )

BEFORE ME, The undersigned authority, on this day personally appeared T. M. Curtis known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that said report is true and correct.

SUBSCRIBED AND SWORN TO before me this the 30th day of January,  
19 63

Notary Public in and for the County of San Juan

February 27, 1965  
My Commission Expires

NOTE: Should waiters from all offset operators, the surface owner, and the State Engineer not accompany an application, the New Mexico Oil Conservation Commission will hold the application for a period of fifteen (15) days from date of receipt by the Commission's Santa Fe office. If at the end of said fifteen-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

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