Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. LAND OFFICE New Mexico
SERIAL NUMBER NM 04443
LEASE OR PERMIT TO PROSPECT

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOCATE WELL CORRECTLY

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 487, Farmington, New Mexico
Lessor or Tract O. J. Hoover "B" Field Horseshoe-Gallup State New Mexico
Well No. 1 Sec. 11 T. 30N R. 16W Meridian N.M.P.M. County San Juan
Location 470 ft. {N. / S.} of N Line and 620 ft. {E. / W.} of W Line of Section 11 Elevation 5511 (Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed ORIGINAL SIGNED BY R. M. Bauer, Jr.
Date February 17, 1959 Title Field Engineer

The summary on this page is for the condition of the well at above date.

Commenced drilling November 25, 1958 Finished drilling December 5, 1958

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 1524 to 1568 No. 4, from to
No. 2, from 1641 to 1670 No. 5, from to
No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

No. 1, from to No. 3, from to
No. 2, from to No. 4, from to

RECEIVED FEB 19 1959 OIL CON. COM. DIST. 3

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
8-5/8"	22.7	Slip Joint	Armco	205	Guide				Surface
4-1/2"	9.5	8 RT	National	1730	Guide				Oil String

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8-5/8	215	160 sacks cement	Halliburton	No. 1 plug	
4-1/2	1728	170 sacks cement	Halliburton	No. 2 plug	

FOLD MARK

PLUGS AND ADAPTERS

Heaving plug—Material Length Depth set
Adapters—Material Size

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 1733 feet, and from feet to feet
Cable tools were used from feet to feet, and from feet to feet

DATES

Completed as pumping oil well Horseshoe-Gallup Field February 14, 1959 Put to producing (Date first new oil to tanks) February 7, 1959

The production for the first 24 hours was 11 barrels of fluid of which 99.8 % was oil; % emulsion; % water; and .2 % sediment. Gravity, °Bé. 40.6

Gas well, cu. ft. per 24 hours Gas-oil ratio not yet available. Gallons gasoline per 1,000 cu. ft. of gas

Rock pressure, lbs. per sq. in.

EMPLOYEES

A. Y. Old, Driller C. A. Flemmons, Driller
V. C. Sartor, Driller George L. Hollowell, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	215	215	Surface sands & shale.
215	1485	1270	Mancos shale.
1485	1522	37	Verde-Gallup sands & shales.
1522	1638	166	Verde-Gallup pay sand & shale.
1638	1733	95	Horseshoe-Gallup pay sand & shale.
			(Tops from E log)

16—43094-4

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION

16—43094-2 U. S. GOVERNMENT PRINTING OFFICE

HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

O. J. Hoover "B" Well No. 1 was spudded on November 25, 1958, and 8-5/8" casing was landed at 215' with 160 sacks of cement. After waiting on cement, casing and water shut-off were tested with 400 pounds pressure for thirty minutes, which held with no drop in pressure.

4-1/2" casing was set at 1728' with 120 sacks 6% gel cement with 1-1/2 pounds medium Tuf Plug per sack and followed by 50 sacks neat cement. Released rotary rig on December 5, 1958 and moved in pulling unit. Ran 2" tubing to 1680' and spotted 200 gallons 15% mud clean out agent and pulled tubing. Tested 4-1/2" casing with 2500 pounds pressure for thirty minutes, which held with no drop in pressure.

Perforated upper Gallup 1524-1568 with two shots per foot. Attempted to perforate 1641-1670 but hit bridge in casing at 1662'. Drilled out bridge at 1671' with tubing and power tongs. Spotted 200 gallons mud clean out agent. Perforated lower Gallup 1641-70 with two shots per foot. Sand-oil fracked with 40,500 gallons oil and 40,000 pounds sand. Breakdown pressure 1850 pounds. Treating pressure maximum 2150 pounds, minimum 1450 pounds. Injected 60 ball sealers in 3 batches of 20 each after frac volumes of 500, 600 and 700 barrels. Average injection rate 55 barrels per minute. Cleaned out to 1692' with sand pump. Landed 2" tubing at 1677'. Installed pumping equipment. Inasmuch as well was not recovering load oil satisfactorily, moved in pulling unit and pulled and re-ran rods to change out sub-surface pump. Pulled rods, pump and tubing. Checked perforations and found no sand fill-up. Retrievable bridge plug set at 1600'. Sand-oil fracked upper Gallup 1524-1568 with 30,000 gallons oil and 25,000 pounds sand. Breakdown pressure 1500 pounds, treating pressure 1550 pounds. Average injection rate 59 barrels per minute. Pulled retrievable bridge plug. Landed 2" tubing at 1580'. Ran pump and rods and started well pumping.

Completed as pumping oil well Horseshoe-Gallup field February 14, 1959. Potential test pumped 11 barrels oil in 24 hours.

FOR OIL OR GAS WELL

OFFICE OF STATE

PROMINENT OIL AND GAS MERCHANTS

DANIEL BUILDER