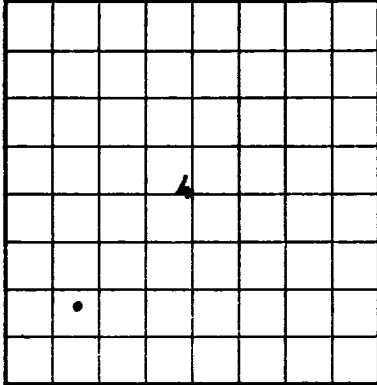


U. S. LAND OFFICE Santa Fe  
SERIAL NUMBER 081101  
LEASE OR PERMIT TO PROSPECT .....



LOCATE WELL CORRECTLY

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company The Frontier Refining Company Address 4040 East Louisiana, Denver, Colorado  
Lessor or Tract Chartier, S 1/2 Sec. 4 Field Undesignated State New Mexico  
Well No. 1 Sec. 4 T. 26N R. 12W Meridian NMPM County San Juan  
Location 790 ft. (N.) of S Line and 790 ft. (E.) of W Line of Sec. 4 Elevation 5981 KB  
(Denote 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.

Date July 8, 1957 Signed E. B. Granville  
E. B. Granville  
Title Drilling & Production Supt.

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

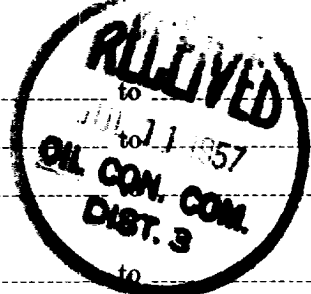
Commenced drilling May 30, 1957 Finished drilling June 10, 1957

OIL OR GAS SANDS OR ZONES  
(Denote gas by G)

No. 1, from 4925 to 4953 No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from 4982 to 5010 No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
No. 3, from 5020 to 5063 No. 6, from \_\_\_\_\_ to \_\_\_\_\_

IMPORTANT WATER SANDS

No. 1, from 1225 to 1310 No. 3, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_



CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From-	To-	
9 5/8	32.3	8	H-40	213.6	guide				
5 1/2	15.2	8	H-40	41.3	guide		5010	4982	
							4952	4916	

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9 5/8	228 KB	175	Pump & Plug		
5 1/2	5126	100	" "		

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
NOT SHOT						

TOOLS USED

Rotary tools were used from surface feet to 5127 feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Cable tools were used from \_\_\_\_\_ feet to \_\_\_\_\_ feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

DATES

\_\_\_\_\_, 19\_\_\_\_ Put to producing Shut in, 19\_\_\_\_

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

If gas well, cu. ft. per 24 hours 3,600,000 est. Gallons gasoline per 1,000 cu. ft. of gas unknown

Rock pressure, lbs. per sq. in not determined

EMPLOYEES

Claude Carroll Drilling Company Driller \_\_\_\_\_, Driller  
Fernington, New Mexico \_\_\_\_\_, Driller \_\_\_\_\_, Driller

FORMATION RECORD AND CORES

FROM-	TO-	TOTAL FEET	FORMATION
945	973	28	Fruitland
1225	1505	280	Pictured Cliffs
1505	2068	563	Lewis
2068	3950	1882	Mesa Verde
3950	4802	852	Mancos
4802	5070	268	Gallup
5070	5127	57	Lower Mancos

CORE DESCRIPTIONS

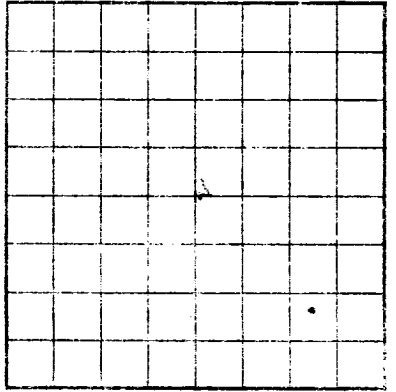
Core #1: 4920-4954' Full recovery. Core barrel jammed. Sand and shale. 75% sand, light gray, very fine grained. No apparent permeability & porosity. Sand dirty w/interbedded shaley streaks. Vertical fractured throughout. Bleeding gas, poor fluorescence.  
4920-29'  
4929-32' Sand and shale as above. 75% shale. Vertical fracture. Bleeding gas.  
4932-34' Shale, black, fissile, fossiliferous, no shows  
4934-43' Sand & shale. 90% sand as above, very fine. Bleeding gas, no odor, poor fluorescence, poor permeability and porosity.  
4943-47' Sand & Shale. 40% sand as above. No vertical fractures. No shows.  
4947-52' Sand & shale. 90% sand as above. All vertical fractured. Bleeding gas, poor fluorescence, no apparent permeability and porosity.  
4952-54' Shale, black, fossiliferous, very fine, no shows.

FOLD MARK

U. S. LAND OFFICE  
SERIAL NUMBER  
LEASE OR PERMIT TO PROSPECT

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

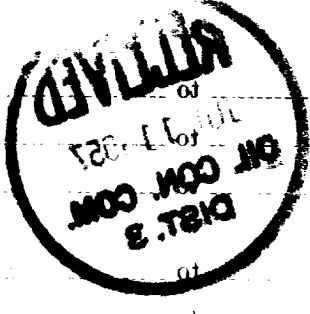


LOCATE WELL CORRECTLY

Company Name  
Address  
State  
County  
Well No.  
Location  
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.

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

Table with columns for OIL OR GAS SANDS OR ZONES and IMPORTANT WATER SANDS. Includes depth ranges and descriptions.



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 "struck" 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 reason for pumping or bailing.

HISTORY OF OIL OR GAS WELL

Main data table with columns: FROM, TO, FORMATION, EMPLOYEES, DATES, TOOLS USED, SHOOTING RECORD, ADAPTERS, PLUGS AND BRIDGES, MUDGING AND CEMENTING RECORD.

FORMATION RECORD - continued