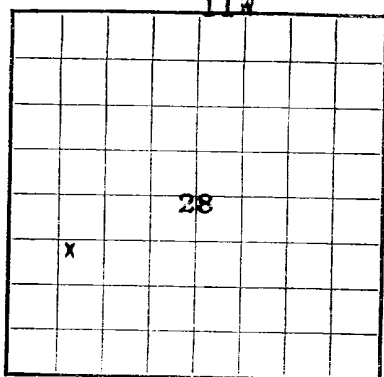




LOCATE WELL CORRECTLY

27N

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYU. S. LAND OFFICE Santa Fe
SERIAL NUMBER SF 080382-A
LEASE OR PERMIT TO PROSPECT

LOG OF OIL OR GAS WELL

Company The Frontier Refining Co. Address 4040 E. Louisiana Ave. Denver 22, Colorado
Lessor or Tract Frontier-Aztec Unit "E" Field Basin Dakota State New Mexico
Well No. 1-D Sec. 28 T. 27N R. 11W Meridian N. 4. P. M. County San Juan
Location 1850 ft. N. of S. Line and 790 ft. E. of W. Line of Sec. 28 Elevation 6299 (KB)
(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 [Signature]Date March 23, 1961 Title Petroleum Engineer

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

Commenced drilling February 7, 1961 Finished drilling February 23, 1961OIL OR GAS SANDS OR ZONES
(Denote gas by G)

No. 1, from (G) 6436' to 6492' No. 4, from _____ to _____
No. 2, from _____ to _____ 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 _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
8-5/8"	24#	8Rd	Spang	215	None	-	-	-	Surface csg.
4-1/2"	11.6	S.T.C. 8Rd	CP&I	6552.69	Howco	-	6457	6480	Prod. casing
2-3/8"	4.70	8Rd	CP&I	6439	-	-	-	-	Tubing

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8-5/8"	227'	200 + 2 1/2 CaCl	circ to suff. water		water
4-1/2"	3564.39KB	275	Plug	9.7# / gal	-

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 _____ feet to _____ feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

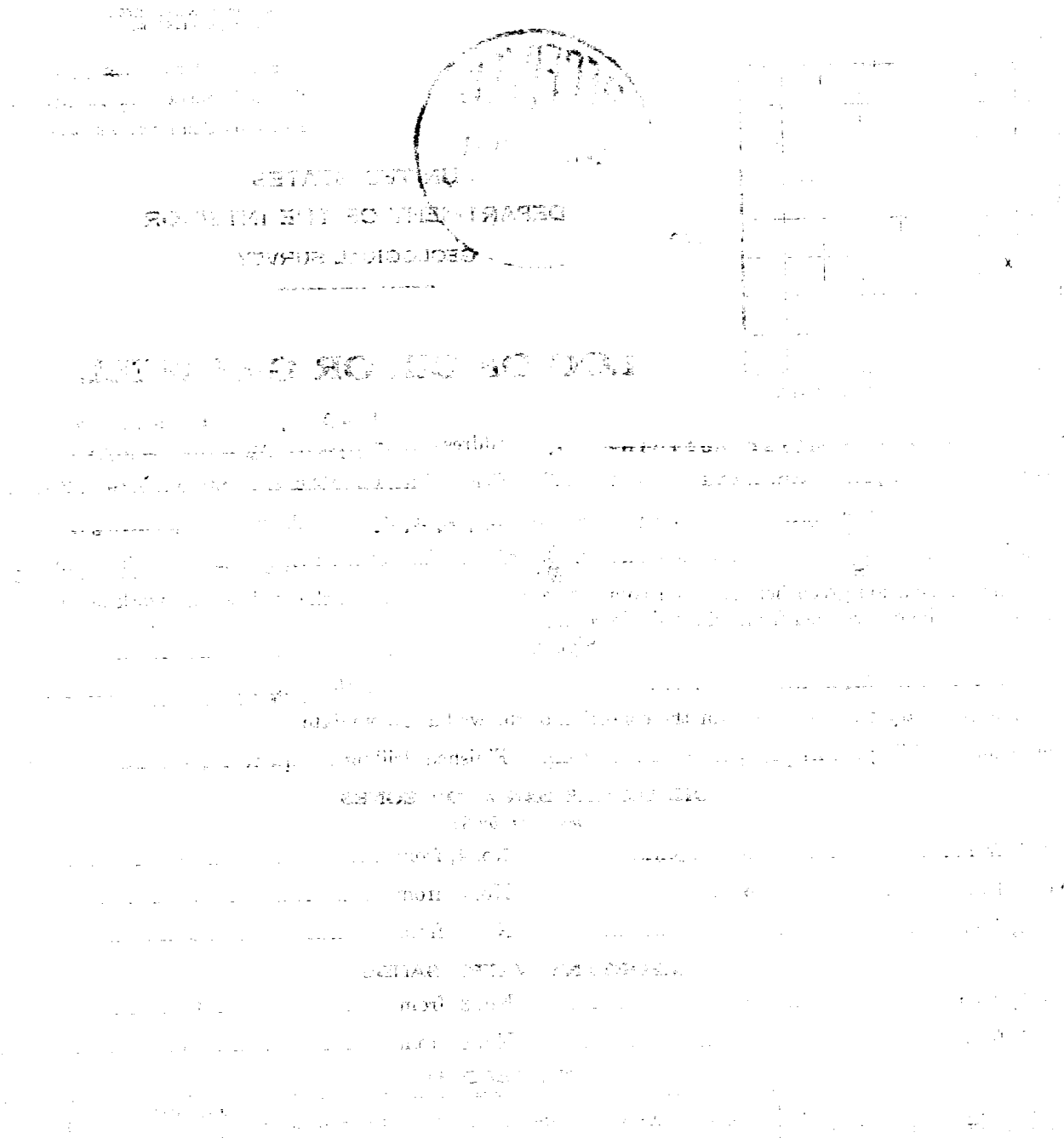
_____, 19____ Put to producing _____, 19____
The production for the first 24 hours was _____ barrels of fluid of which _____% was oil; _____%
emulsion; _____% water; and _____% sediment. Gravity, °Bé. 61° @ 60° F.

* If gas well, cu. ft. per 24 hours 5020 MCF Gallons gasoline per 1,000 cu. ft. of gas _____Rock pressure, lbs. per sq. in. _____ *As measured against 500# back pressure.
EMPLOYER'S _____ choke, pitot, uncorrected.

J. W. Baker _____, Driller F. C. Seale _____, Driller
Doyle Castle _____, Driller Doc Seale _____, Driller
XXXX

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
			From the Schlumberger Induction-Electric Log.
			Kirtland 885
			Fruitland 1620
			Pictured Cliffs 1784
			Chacra 2703
			Pt. Lookout 4190
			Wancos 4592
			Gallup 5410
			Huerfano 5771
			Tocito 5928
			Greenhorn 6285
			Graneros Shale 6350
			1st Graneros S.S. 6389
			2nd Graneros S.S. 6411
			Dakota "A" 6454
			P.B.T.D. 6528
			T.D. 6576



It is of the greatest importance to have a complete history of the well. Please state in detail the dates of reworking, 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.

HISTORY OF OIL OR GAS WELL

FROM—	TO—	TOTAL FEET	FORMATION
Spudded 8:30 PM February 7, 1961.			
Drilled 12 1/2" hole to 240 and set 8 5/8" casing @ 227'. KB. Cemented with 200 sacks cement, regular plus 2% CaCl, circulated cement. 6 3/4" hole to 6392', cored (6 11/16") Drilled 7 3/8" hole to 4172'. 6 3/4" hole to 6392', cored (6 11/16") Interval 6392-6506', drilled 6506'-6517', ran Schlumberger I-E log over log, cored 6517-6576 (T.B.), ran Schlumberger I-E log over newly drilled interval. T.B. by Schlumberger 6538'. Set 4 1/2" J-55 casing (premium tested to 4900 psi), 11.64, @ 6564.69 KB w/HOWCO two stage cementing tool @ 2077.89'. KB @ battle collar @ 6530.57'. KB. Cemented first stage w/ 125 sacks 50/50 Pozmix S, 12 1/2% Glsomite, 4% Gel, followed by 75 sacks 50/50 Pozmix S, 2% Gel, 2nd stage w/ 75 sacks 50/50 Pozmix S, 4% Gel. Indicated cement top 1st stage 5400', 2nd stage 1720'. KB. Centralizers run on joints 1, 2, 4, 5, 6 @ on joints above and below D.V. tool. Rotating scratchers run from T.D. up for 250' over Dakota section. Moved completion rig on location 2-25-61.			
Drilled D.V. tool and cleaned out to P.B.T.D. of 6528'. KB. Ran B-J Gamma Ray-Neutron log for P.D.C. log, tagged bottom @ 6523 1/2'. Perforated Dakota sand 6457'-6486 w/ 4 strip "Perfo-jets" per foot. Broke formation down w/ 1 Dowell truck @ 1500 psi, inject water @ 3 1/2 b/w @ 1200 psi. Swabbed ran tubing w/ bottom @ 6454'. to wash test prior to frac. Swabbed approx 90 bbls. water, well kicked in w/ 300 psi casing pressure, allowed gas natural @ estimated rate of 200-300 MCF/day. Fraced well w/ 4 Dowell Allison pumps. Filled casing w/ 100 bbls water, 50 bbls to pumps and breakdown. 1310 bbls water w/ 49,000# 20/40 sand, 100 bbls displace water. Water contained 1% CaCl & 25% J-101/1000 gal of water. Started sand @ 1/4 gal, increased to 1 3/4 gal. Average injection rate 36 b/w @ 2700 psi, 9 1/2 gal, instantaneous shut-in pressure 1650 psi, 5 min. 1300#. Left well shut-in 2 hours, bleed off pressure to run tubing and wash well in. Ran 1 jt. tubing well blow in @ estimated rate of 8-10 MCF/d. Ran tubing, landed @ 6448'. KB. Installed well head. Kicked well off, blow to clean up and shut-in for hook-up. Tested 3-10-61 through 3-11-61. 24/64 choke, 500 psi back pressure to stimulate deliverability. Shut-in tubing 1850 psi, shut-in casing 1850 psi. Recovery gauged 5,020 MCF/d (uncorrected pitot tube) and 72 bbls distillate in 24 hours. (61 at 60°F). Stabilized tubing 760 psi, casing 900 psi. No water. Shut-in tubing and casing pressures 24 hours after test were 1800 psi each. Well shut-in - RFD approval and gas sales contract received. Wait-			
Note: Two copies each of Schlumberger I-E log, and core analysis are attached.			
6438			