

DRILLING AND COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

PAN AM STATE NO. 1 - 36

San Juan County, New Mexico

September 23, 1960

Location: 790' F/SL & 1750' F/WL, Section 36
T32N-R13W, N. M. P. M.

Elevation: 5781' Ground
5793' K.B. - all measurements from K.B.

Spud: June 26, 1960

Drilling Completed: July 23, 1960
Well Completed: August 29, 1960

Total Depth: 6840' Drilled
6770' Plug Back

Casing:
Surface - 10-3/4", 32.75# H-40 cemented at 183' w/200 sx
2% CaCl₂ cement

Production - 7", 26# J-55 cemented at 6839' w/300 sx 6% gel
thru shoe, and 190 sx 50% Pozmix w/ 12% Gilsonite
cement thru stage collar at 4768'. Cemented thru
perforations at 4339' w/100 sx regular cement in
two stages.

Tubing - MV - 1-1/4" EUE CW hung at 4304'
DK - 2" EUE J-55 hung at 6615'

Logs: Lane Wells Gamma Ray-Neutron & Cemtron

Cores and Drillstem Tests: None

Formation Tops: (Log)

Pictured Cliffs	2060'	(✓ 3733')
Mesa Verde	3626'	(✓ 2167')
Cliffhouse	3748'	(✓ 2045')
Menefee	3903'	(✓ 1890')
Pt. Lookout	4420'	(✓ 1373')
Mancos	4712'	(✓ 1081')
Greenhorn	6505'	(- 712')
Dakota	6632'	(- 839')

Producing Perforations:

	MV		DK
4455' - 4464'	4622' - 4628'	6633' - 6670'	
4470' - 4496'	4637' - 4642'	6675' - 6690'	
4500' - 4516'	4647' - 4650'	6698' - 6714'	
4533' - 4536'	4654' - 4658'	6720' - 6738'	
4561' - 4570'	4661' - 4664'		
4583' - 4586'	4668' - 4672'		
	4678' - 4690'		

Treatment: Sand-Water Frac:

Mesa Verde: 100,000# (20-40 mesh) sand, 107,000
gal. water

Dakota: 70,000# (40-60 mesh) sand, 110,000
gal. water, 500 gal. acid in two stages

Initial Potential: MV Flow volume thru 3/4" choke: 1812 MCFD
Calculated Absolute Open flow potential: 1860 MCFD

DK Flow volume thru 3/4" choke: 1190 MCFD

WELL: PAN AM STATE NO. 1-36 (1750' F/WL & 790' F/SL
of Section 36, T32N, R13W, N.M.P.M.)
FIELD: Undesignated Dakota
COUNTY: San Juan STATE: New Mexico
ELEVATIONS: 5781' GD
5793' KB

6/25/60

Rigging up.

6/26/60

Rigging up.

6/27/60

Total Depth 120'. Drilling surface hole. Deviation 3/4 degree at 90'.

6/28/60

Total Depth 445'. Drilled 129' of 15" hole. Ran 195' of 10-7/4" set at 183'. Cemented with 200 sacks regular cement. Plug down 12:30 p.m.

6/29/60

Drilling at 1735' with Bit No. 2, using water. Drilled 1244', shale and sand. Deviation 1/2 degree at 600', 1/2 degree at 1175', 1/2 degree at 1650'. Bit No. 1 made 844' in 11-1/2 hours.

6/30/60

Total depth 2403'. Drilled 668', shale and sand. Tripping for Bit No. 4. Mud 9.2 - 35. Deviation 3/4 degree at 2150'.

WELL: PAN AM STATE NO. 1-36

7/1/60

Drilling at 2830' with Bit No. 5. Drilled 427', sand and shale. Mud 9-40. Deviation 3/4 degree at 2660'. Bit No. 4 made 403' in 11 hours.

7/2/60

Drilling at 3290' with Bit No. 6. Drilled 460', shale and sand. Mud 8.9 - 60 - 9 - 1-1/4 degrees at 3100'.

7/4/60

Drilling at 3661' with Bit No. 9. Drilled 214', sand and shale. Mud 9.2 - 52 - 8. Deviation 3/4 degree at 3485'.

7/5/60

Drilling at 3825' with Bit No. 11. Drilled 164', sand and shale. Mud 9.2 - 70 - 8.4. Anticipated tops: Pt. Lookout - 4442'
Dakota - 6667'

7/6/60

Drilling at 3995' with Bit No. 13. Drilled 170', sand and shale. Mud 9.2 - 48 - 10.

7/7/60

Drilling at 4188' with Bit No. 15. Drilled 193', sand and shale. Mud 9.2 - 50 - 3/4 degree at 3975'.

7/8/60

Total depth 4325'. Drilled 137', sand and shale. Presently tripping for Bit No. 16. Mud 9.6 - 54.

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7/9/60

Drilling at 4511'. Drilled 186', shale and sand with Bit No. 17. Mud 9.3 - 49 when lost circulation at 4505'. Presently mixing mud for lost circulation. Deviation 1-1/4 degrees at 4450'.

7/10/60

Total Depth 4625'. Drilled 114', shale and sand. Presently tripping for Bit No. 19. Mud 9.3 - 72.

7/11/60

Total Depth 4764'. Drilled 149', sand and shale. Tripping for Bit No. 21. Mud 9.3 - 52.

7/12/60

Drilling at 4880' with Bit No. 21. Drilled 116', sand and shale. Lost circulation at 4852' - have continued to lose some mud since that time.

7/13/60

Drilling at 5,056' with Bit No. 23. Drilled 176', sand and shale. Mud 9.2 - 54. Deviation 1 degree at 4950'.

7/14/60

Total Depth 5311'. Drilled 255', shale and sand. Tripping for Bit Nos 25. Mud 9.4 - 55.

7/15/60

Drilling at 5530' with Bit No. 26. Drilled 219', shale and sand. Mud 9.4 - 52.

7/16/60

Drilling at 5853' with Bit No. 27. Drilled 323', shale and sand. Mud 9.4 - 55.

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7/17/60

Drilling at 6140' with Bit No. 28. Drilled 287', shale and sand. Mud 9.5 - 68.

7/18/60

Drilling at 6373' with Bit No. 29. Drilled 233', shale and sand. Mud 9.5 - 71.

7/19/60

Drilling at 6595' with Bit No. 30. Drilled 222', shale and sand. Mud 9.6 - 68.

7/20/60

Total Depth 6681'. Drilled 86', sand and shale. Tripping for Bit No. 32. Mud 9.6 - 83.

7/21/60

Drilling at 6743' with Bit No. 33. Drilled 62', sand. Mud 9.5 - 80.

7/22/60

Total Depth 6806'. Drilled 63' of sand. Presently tripping for Bit No. 35. Mud 9.5 - 72. Deviation 1 degree at 6700'.

7/23/60

Logging. Total Depth 6840'. Drilled 34', sand. Mud 9.6 - 82.

7/24/60

WOC. Moving off rotary tools. Completed running Lane Wells radio-activity log to 6840' Total Depth. Ran 173 joints (6843') 7", J-55 26# ST&C casing set at 6839' KB. Differential float shoe used with differential float collar at 6770' - PBTD. Weevil plate (cast iron) in shoe. Umbrellas at 4808', 4376', 4307' with stage collar at 4768'. Six centralizers placed throughout Mesa Verde formation and three throughout Dakota Formation.

OPEN FLOW TEST DATA

DATE September 18, 1960

Operator CONSOLIDATED OIL & GAS, INC.		Lease PAN AM STATE NO. 1-36	
Location 790' F/SL & 1750' F/ WL Sec. 36-T32N-R13W		County San Juan	State New Mexico
Formation Dakota		Pool Undesignated Dakota	
Casing: Diameter 7" (M.V.)	Set At: Feet 6839	Tubing: Diameter 2" EUE	Set At: Feet 6615
Pay Zone: From 6633	To 6738	Total Depth: 6770	
Stimulation Method Sand-Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.75		Choke Constant: C 14.1065	
Shut-In Pressure, Casing, (Mesa Verde)	PSIG - 12 = PSIA	Days Shut-In 1750	Shut-In Pressure, Tubing 1762
Flowing Pressure: P 73	PSIG - 12 = PSIA	Working Pressure: P _w 85	PSIG - 12 = PSIA
Temperature: T 70	°F n =	F _{pv} (From Tables) .75	Gravity 0.60

CHOKE VOLUME $Q = C \times P_i \times F_i \times F_g \times F_{pv}$

$$Q = 14.1065 \times 85 \times .9905 \times 1.000$$

$$= \underline{\hspace{2cm}} 1190 \text{ MCF/D}$$

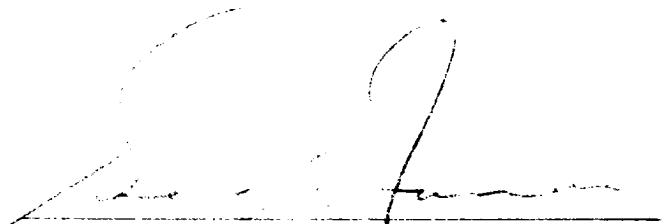
OPEN FLOW $Aof = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

$$Aof \left(\frac{\hspace{2cm}}{\hspace{2cm}} \right)^n$$

$$Aof \underline{\hspace{2cm}} \text{ MCF/D}$$

TESTED BY Robert B. Tenison

WITNESSED BY



OPEN FLOW TEST DATA

DATE September 9, 1960

Operator CONSOLIDATED OIL & GAS, INC.		Lease PAN AM STATE	
Location 790' F/SL & 1750' F/WL of 36-32N-13W		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 7"	Set At: Feet 6839'	Tubing: Diameter 1-1/4" EUE	Set At: Feet 4304
Pay Zone: From 4533	To 4690	Total Depth: 6662	
Stimulation Method Sand-Water Frac		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 3/4"		Choke Constant: C 14,1605			
Shut-In Pressure, Casing, PSIG 1119	- 12 = PSIA 1131	Days Shut-In 7	Shut-In Pressure, Tubing PSIG 1116	- 12 = PSIA 1128	
Flowing Pressure: P PSIG 126	- 12 = PSIA 138		Working Pressure: Pw PSIG 209	- 12 = PSIA 221	
Temperature: T °F 71	n = .75		Fpv (From Tables) 1.015	Gravity 0.70	

$$\text{CHOKE VOLUME } Q = C \times P_r \times F_r \times F_g \times F_{pv}$$

$$Q = 14,1605 \times 138 \times .986 \times .9258 \times 1.015 = \underline{1812} \text{ MCF/D}$$

$$\text{OPEN FLOW } A_{of} = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$A_{cf} = \left(\frac{1,279,161}{1,235,480} \right)^n = 1.026 Q$$

$$A_{of} = \underline{1860} \text{ MCF/D}$$

TESTED BY: Leo Case

WITNESSED BY: _____

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