

DRILLING AND COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

MILLS #1

San Juan County, New Mexico

June 25, 1965

LOCATION: 1,650' FWL, 1,650' FSL
Section 19-T25N-R9W, NMPM

ELEVATIONS: 6,734' GL
6,743' DF
6,744' KB

SPUD: May 21, 1965

DRILLING COMPLETED: June 4, 1965
WELL COMPLETED: June 8, 1965

TOTAL DEPTH: 6,460' Drilled (Logger's TD 6,463')

CASING:

Surface:	8-5/8" 20# casing set at 322', cemented with 155 sx. regular 2% CaCl.
Production:	4-1/2" 11.60# & 10.50# SCT casing set at 6,466' KB, cemented with 250 sx. 50/50 Pozmix and 4% gel.

TUBING: 1-1/2" EUE set at 6,430' KB.

LOGS: Lane Wells Induction Electrolog and Densilog.

CORES & DRILL STEM TESTS: None

FORMATION TOPS: (Log)

Pictured Cliffs	1,884'	(+4,860')
Chimney Hills	3,418'	(+3,326')
Point Lookout	4,317'	(+2,427')
Gallup	5,380'	(+1,364')
Greenhorn	6,290'	(+ 454')
Graneros	6,414'	(+ 330')
Dakota	6,434'	(+ 310')

PRODUCING PERFORATIONS: 6,437' to 6,452'

TREATMENT: Acidized with 500 gal. regular acid 15% HCL in 1 stage.

Sand water frac with 60,000# of 20/40 sand and 67,580 gal. treated water.

INITIAL POTENTIAL: Choke volume thru 3/4" choke: 8470 MCFD
Calculated Absolute Open Flow: 10,525 MCFD

WELL: MILLS NO. 1
LOCATION: 1650' F/WL & 1650' F/SL, Section 19-T25N-R9W
FIELD: Basin Dakota
COUNTY: San Juan STATE: New Mexico
ELEVATIONS: 6,734' GL 6,743' DF
6,744' KB

5/22/65

Spud 2 p.m. 5/21. Drilled 322' 12 1/4" surface hole. Dev. 3/4° at 200'. Rigged up and ran 8 joints 8 5/8" 20# surface casing set at 322'. Cemented with 155 sx. regular 2% CaCl. Plugged down 10 p.m. 5/21. Good returns on cement job. WOC.

5/23/65

Nippled up, pressured up to 1000#, held OK. Depth 2226'. Drilled 1900' of sand and shale. Present operation, drilling with Bit 2, with water. Dev. 3/4° at 1700', 3/4° at 700'.

5/24/65

Depth 3257'. Drilled 1031' of sand and shale. Tripping for Bit 5. Drilling with water. Dev. 1° at 2280', 1° at 2900'.

5/25/65

Depth 3675'. Drilled 418' of sand and shale. Present operation, drilling with Bit 6 with water. Dev. 1/4° at 3250'.

5/26/65

Depth 4240'. Drilled 565' of sand and shale. Drilling with Bit 8, with water. Dev. 1/2° at 4200'.

5/27/65

Depth 4680'. Drilled 444'. Present operation, drilling with Bit 9. Mud 8.9. Vis. 38. Water loss 12. Dev. 1 1/2° at 4560'.

WELL: MILLS NO. 1 Page 3

6/6/65

Started picking up tbg. at 7 a.m. Pressured to 3000# before drilling float collar at 6,432'. Drilled float collar and firm cement to 6,460. Pressure to 3000#, held OK. Spotted 500 gal. regular 15% HCL. Pulled out of hole, rigged up Lane Wells, ran correlation log. Perforated 6 per foot from 6,437 to 6,452'. Rigged up Halliburton 5-HT-400's, staged acid away. Formation broke at 1300#.

Initial treating press.	3500#	Initial Inj. rate	28 BPM
Max. treating press.	3600#	Max. Inj. rate	32 BPM
Min. treating press.	2900#	Min. Inj. rate	10 BPM
Final treating press.	3500#	Final Inj. rate	10 BPM
Avg. treating press.	3000#	Avg. Inj. rate	28 BPM
Five-Min. shut-in	1600#	Sand	60,000# 20/40
Hyd. horse power	2265	Balls	70 in 5 stages
		Total Fluid	67,580 gals.
		Treating Fluid	62,000 gals.
		Flush	4,280 gals.
		Additives	100# FR 8

Job complete at 3:40 a.m.

6/7/65

Blew well to bottom in 11 hrs. Gauged well at 1140 MCF with 1/2 stream of water and trace of oil. While entering tubing, pump out plug broke. Well kicked off through tubing. Left well flowing through night. Will finish landing tubing this a.m.

6/8/65

Set choke in tbg. Removed blow-out preventer. Nippled up wellhead. Gauged well after 12 hrs. flowing. Well making 1790 MCF w/night spray of wtr. and trace of oil. Ran a total of 198 jts. of 1-1/2" EUE tbg. set at 6,430' KB. Shut well in at 9 a.m. June 8 for 7-day test.

6/9/65

24 hr. SI - 1825 psig tubing pressure and casing pressure.

6/10/65

SI for test.

6/11/65

48 hr. SI - 1845# tubing pressure and casing pressure.

WELL: MILLS NO. 1 Page 2

5/28/65

Depth 5012'. Drilled 332' of sand and shale. Present operation, tripping for Bit 11. Mud 9. Vis. 37. Water loss 12.

5/29/65

Depth 5155'. Drilled 143' of sand and shale. Present operation, tripping for Bit 12. Mud 9.1. Vis. 51. Water loss 9.2. Dev. 3/4° @ 5150'.

5/30/65

Depth 5435'. Drilled 280' of sand and shale. Present operation, drilling with Bit 13. Mud 9.2. Vis. 51. Water loss 9.6. Dev. 1° @ 5350'.

5/31/65

Depth 5730'. Drilled 295' of sand and shale. Drilling with Bit 14. Mud 9.3. Vis. 48. Water loss 96.

6/1/65

Depth 6050'. Drilled 320' of sand and shale. Drilling with Bit 15. Mud 9. Vis. 49. Water loss 8.4. Dev. 1° @ 5838'.

6/2/65

Depth 6369'. Drilled 319' of sand and shale. Present operation, drilling with Bit 16. Mud 9.1. Vis. 59. Water loss 8.8.

6/3/65

Depth 6460'. Drilled 91' of sand and shale. Now tripping out to run logs. Mud 9.3.

6/4/65

6460'. Ran Lane Wells Induction Gamma Ray and Acoustic Logs. Ran drill pipe and bit to condition hole.

6/5/65

Ran 4-1/2" OD csg. as follows: 115 jts. 11.6# casing (3697.69'). Ran 86 jts. 10.5# casing (2772.19'). Total 201 jts. (6469.88'). Landed csg. at 6465.88' KB per casing tally with float collar at 6432.33' KB. (Note: TD was 6' deeper by casing tally than by Driller's TD). Pre-treated mud (200 bbls.) with Hydrazine and Bactin #2. Pre-flushed with 30 bbls. of GP 100. Cemented csg. with 250 sx. 50/50 pozmix and 4% gel with good circ. throughout job. Pumped plug with 2000 psig, held OK. Job completed at 8:25 A.M. WOC.

WELL: MILLS NO. 1 Page 4

6/12/65

SI for test.

6/13/65

SI for test.

6/14/65

SI for test.

6/15/65

Will test well today.

6/15/65

Ran 3-hour test through 3/4" choke. Initial SITP & SICP 1845#. Final flowing pressure 547#. Well tested through casing. Calculated choke volume 7850 MCFD. Absolute open flow 7938 MCFD. Medium to heavy spray of oil and wtr. throughout test.

6/16/65

Ran 3-hour retest through 3/4" choke. ISIP 1817#. Tested through csg. Calculated choke volume 8470 MCFD w/spray of oil and wtr. throughout test. Absolute open flow 10,525 MCFD.

15-Min. flowing pressure	- 770#
30-Min. "	- 694#
45-Min. "	- 593#
60-Min. "	- 575#
2-Hour "	- 589#
3-Hour "	- 593#

6/17/65

Shut in. Will file potential test.

OPEN FLOW TEST DATA

DATE: 10-1-1965

Operator Consolidated Oil & Gas Inc.		Location Mills # 1	
Location Section 19, Twp 25 North, R-4 West, N2PM.		County San Juan	State New Mexico
Basin Basin Dakota		Field Dakota	
Casing Diameter 4 1/2"	Set At Feet 6475	Tubing Diameter 1 1/2" EUE	Set At Feet 6430
Per Inch Flow 6420	Yd 6460	Total Depth 6475	
Stratigraphic Interval Sand & Water Freqs.		Flow Through Casing XX	Flow Through Tubing

Choke Size, inches 3/4"	Choke Extension C 14.1605		
Shut-in Pressure, Comp. 1817	PSIG 1824	Days Shut-in 1	Shut-in Pressure, Tubing 1817
Flowing Pressure P 593	PSIG 12 - PSIA	Flowing Pressure P _u 905	PSIG 12 - PSIA
Temperature T 58	" 75	Sp. Grav. (Tablet) 1.066	Gravity 1.70 est.

CHOKE VOLUME $Q = C \times P_r \times F_v \times F_g \times F_p$

$$Q = 14.1605 \times 605 \times 1.0019 \times .9458 \times 1.066 = 8470 \text{ MCF/D}$$

OPEN FLOW And $Q \left(\frac{P_r}{P_r - P_w} \right)^n$

$$\text{And} \left(\frac{54524}{4504352} \right)^n 1.336^{75} = 1.2426$$

$$\text{And } 10,545 \text{ MCF/D}$$

Witnessed by: A.A. Prater

Witnessed by: Ralph Abbott

Clyde Phillips
Clyde Phillips