

DRILLING & COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

PHILLIPS NO. 1-23

San Juan County, New Mexico

February 28, 1963

RECEIVED

U.S. GEOLOGICAL SURVEY
1963

Location: 1750' F/SL, 875' F/EL, Section 23,
T31N-R13W, NMPM

Elevations: 5719' GL
5729' KB (all measurements from KB)

Spud: January 18, 1963

Drilling Completed: February 6, 1963
Well Completed: February 19, 1963

Total Depth: 6645'

Casing:

 Surface: 9 5/8" set at 229' with 110 sx. regular
 2% Calcium Chloride

 Production: 4 1/2" J-55 10.5 set at 6644 KB. Cemented
 with 300 sx. 50-50 Pozmix, thru casing
 shoe and 82 sx regular 40% Diacel D thru
 stage collar at 4631

 Tubing: 1 1/2" IJ at 6456 KB

Logs: PGAC, Gamma-Ray Neutron

Cores & Drillstem Tests: None

Formation Tops: (Log)

Point Lookout	4460 (+1268)
Mancos	4755 (+ 770)
Greenhorn	6378 (- 120)
Dakota	6498 (- 770)

Producing Perforations:

<u>DAKOTA</u>		
6518	-	6538
6546	-	6552
6566	-	6570
6584	-	6600

2/ft.

Treatment: Sand water frac with 125,000 gallons
water and 83,000 lbs. sand in two stages.

Initial Potential: Flow volume through 3/4" choke: 2534 MCFD
Calculated absolute open flow potential:
2758 MCFD

WELL: PHILLIPS NO. 1-23
 1750' F/SL, 875' F/EL, Sec. 23-T31N-R13W
 FIELD: Basin Dakota
 COUNTY: San Juan STATE: New Mexico
 ELEVATIONS: 5719' GL
 5729' KB

2/18/63

Depth 220'. Drilled 220' of 12 1/4" surface hole. Ran 6 joints 9 5/8" 36#, Range-2 surface pipe for total 229', set at 201' KB. Cemented with 110 sx. regular 2% CaCl₂. Plug down 4 a.m. 1/18, good returns on cement.

2/19/63

Nipple up, pressure up to 1000#. Depth 820'. Drilled 600' of sand and shale. Drilling with Bit 1. Drilling with water. Dev. 1/2° at 800'.

2/20/63

Depth 1472'. Drilled 652' of sand and shale. Mud 8.9. Vis. 31. Dev. 3/4° at 1332'.

2/21/63

Depth 2123'. Drilled 651' of sand and shale. Making trip for Bit 5. Mud 9.8. Vis. 31. Dev. 1/2° at 1850'.

2/22/63

Depth 2540'. Drilled 417'. Sand and shale. Mud 9. Vis. 31. Dev. 1/4° at 2393'.

2/23/63

Drilling at 3040'. Drilled 500' of sand and shale. Drilling with Bit 7. Mud 9. Vis. 32.

2/24/63

Depth 3332'. Drilled 295' of sand and shale. Tripping for Bit 9. Mud 9.4. Vis. 32.

PAGE 2

Page 4

WELL: PHILLIPS NO. 1-23

2/25/63

Depth 3515'. Drilled 200' of sand and shale. Present operation, drilling with Bit 10. Mud 9. Vis. 30. Water loss 20. Dev. 1/4° at 3473'.

2/26/63

Depth 3755'. Drilled 220' of sand and shale. Present Operation, drilling with Bit 12. Mud 9. Vis. 31.

2/27/63

Depth 4100'. Drilled 345' of sand and shale. Present operation, drilling with Bit 14. Mud 9. Vis. 31.

2/28/63

Depth 4485'. Drilled 385' of sand and shale. Present operation, tripping for Bit 16. Mud 8.9. Vis. 33. Dev. 1/2° at 4452', no loss of mud.

2/29/63

Depth 4843'. Drilled 358' of sand and shale. Present operation, drilling with Bit 17. Mud 9. Vis. 31. Water loss 28.

2/30/63

Depth 5221'. Drilled 378' of sand and shale. Tripping for Bit 19. Mud 9. Vis. 38. Dev. 1/2° at 4950'.

2/31/63

Depth 5475'. Drilled 254' of sand and shale. Present operation, drilling with Bit 20. Mud 9.1. Vis. 40. Water loss 15.

2/1/63

Depth 5859'. Drilled 381' of sand and shale. Tripping for Bit 21. Mud 9.2. Vis. 50. Water loss 13. Mud cake 2/32. PH 9. Dev. 3/4° at 5500'.

2/2/63

Depth 6036'. Drilled 177' of sand and shale. Present operation, drilling with Bit 22. Mud 9.3. Vis. 50. Water loss 13. Mud cake 2/32. PH 9. Dev. 3/4° at 5955'. Los approximately 50 bbls. mud at 5960'.

WELL: PHILLIPS NO. 1-23

2/3/63

Depth 6300'. Drilled 273' of sand and shale. Present operation, drilling with Bit 23. Mud 9.4. Vis. 55. Water loss 7.6. Mud cake 1/32. PH 7.5.

2/4/63

Depth 6516'. Drilled 207' of sand and shale. Drilling with Bit 24. Mud 9.5. Vis. 60. Lost some mud at 6516', recovered full circulation.

2/5/63

Depth 6571'. Drilled 55' of sand. Drilling with Bit 26. Mud 9.5. Vis. 66. Dev. 3/4° at 6560'. Lost 130 bbls. mud at 6520'. Drilling mud.

2/6/63

Depth 6607'. Drilled 36' of sand. Present operation, making trip for Bit 28. Mud 9.4. Vis. 75. Water loss 8.2.

2/7/63

Depth 6645'. Reached TD 2/6/63 at 4 p.m. Circulated and conditioned hole for logs, pulled out of hole, rigged up PGAC, ran logs. Ran drill pipe back to bottom, conditioned hole for 1 1/2 hours. Present operation, laying down drill pipe to run 4 1/2" casing.

2/8/63

Ran 210 joints of 4 1/2" J55, 10.5#, L.T. & C. casing, total 6650.96' set at 6643.96' KB. Float collar at 6610', stage collar at 4630.72'. One centralizer on shoe joint, one centralizer at 6305', one centralizer at 4695', one cement basket at 4662', one centralizer at 4369'. First stage cement - preflushed with 10 bbls. water, 1 gal. Morfil, 25 sx. 50% Pozmix, 50% Strata-crete 6, 10 bbls. water with 200# lime, 25 sx. 50% Pozmix, 50% Strata-crete 6. Cemented with 300 sx. 60/50 Pozmix, 2% gel. Good circulation throughout job, plug down 2:45 p.m. 2/7/63. Bumped plug with 2000#, waited 3 hours between stages. Second stage cemented with 82 sx. regular with 40% Diacel D, 4% CaCl₂. Job complete 6:30 p.m. 2/7.

PHILLIPS NO. 1-23

2/16/63

Moved in and rigged up completion rig. Picked up 2 3/8" tubing, set in hole, drilled stage collar, cleaned out to TD of 6610'. Rigged up Western Co., spotted 1000 gal. BDA, 15%. Present operation, pulling out of hole in preparation to run correlation log. Pressured up on casing to 3000#, held OK.

2/17/63

Rigged up PGAC, ran correlation log. Rigged up and perforated for per foot 6600' to 6584' (16'). Staged acid in 250 gal. per stage for total of 1000 gal. First stage - breakdown 450#, -400#, 250 gal., 8 min. Second stage - breakdown pump in at 150#, 250 gal. 7 min., 0# 3/4 BPM. Third stage - pump in at 1000#, 4 BPM. Rigged up Western Co. All pumps on.

Breakdown	2400#	Breakdown & fill	90 bbls.
Maximum pres.	3000#	Treatment fluid	22,000 gal.
Minimum pres.	2400#	Sand	13,000 lbs.
Avg. treat. pres.	2800#	Balls	None
Final treat. pres.	3000#	Injection Rate	40 BPM
Five min. shut in	1400#	Flush	58 bbls.
		Overflush	None

When 2000# sand in pipe, well sanded off. Final injection rate 9 BPM. Well sanded off. Went in hole with bit and tubing, cleaned out to 6603', came out of hole, rigged up PGAC.

Reperforated lower zone at two shots per foot - 6518-6538, 6546-6552, 6566-6570, 6584-6600. Did not set plug. Rigged up Western Company. (5 pumps)

Breakdown	2000#	Breakdown & fill	90 bbls.
Max. treat. pres.	2600#	Treatment fluid	103,000 gal.
Min. treat. pres.	2000#	Sand	70,000
Avg. treat. pres.	2500#	Balls	60
Final treat. pres.	2600#	Injection Rate	40.2 BPM
Instant shut in	1400#		
Five min. shut in	1000#		

Job completed at 10 a.m. 2/17/63, no over flush.

2/18/63

Went in hole with completion string to 3400'. Well started unloading, blew on to bottom, on bottom at 3 a.m. PBTD 6610'. Blew and cleaned

PHILLIPS NO. 1-23

OPEN FLOW TEST DATA

DATE February 26, 1963

2/20/63

Shut bottom for five hours, well gauged 1000 MCFD with heavy spray of water and some sand. Laying down completion string.

2/21/63

Load down completion string, rigged up and ran tubing. Ran 205 joints 1 1/2" ID tubing for 6432.47', ran 12.29' of subs, tubing landed at 6455.76' KB. One jet collar at 6202.88' KB, one jet collar at 5948.92' KB. Job completed at 12 midnight 2/19/63.

2/21/63

Shut in. Will blow and clean today.

2/21/63

Blowing and cleaning hole.

2/22/63

Blow and cleaned well for five hours through tubing. Well at end of five hours gauging 2190 MCFD with 520# casing pressure. Light spray of water.

2/22/63

Shut in for test.

2/23/63

Shut in for test.

2/23/63

Shut in for test.

2/26/63

Shut in for test.

2/27/63

Shut in for test.

Operator Consolidated Oil & Gas, Inc.		Lease Phillips No. 1-23	
Location Unit I, Section 23, T31N, R13W		County San Juan	
State Dakota		New Mexico	
Casing Diameter 4 1/2"		Tubing Diameter 1 1/2"	
Set At Feet 6644'		Set At Feet 6432'	
Per Zone From 6518		To 6570	
Simulation Method Sand - Water Frac		Flow Through Casing 6645	
		Flow Through Tubing X	

Choke Size, inches 0.75		Choke Constant, C 14.1605	
Shut-in Pressure, Casing, PSIG 1786		Days Shut-in 7	
Shut-in Pressure, Tubing, PSIG 1798		Flowing Pressure, P _w , PSIG 174	
Flowing Pressure, P _w , PSIG 174		Working Pressure, P _w , PSIG 572	
Temperature, T, °F 46		Exp. (From Tables) 1.025	
		Gravity 0.7 (est)	

$$\text{CHOKE VOLUME} = Q = C \times P_c \times F_c \times F_g \times F_v$$

$$Q = 14.1605 \times 186 \times 1.0137 \times 1.025 \times 1.025 = 2,534 \text{ MCF D}$$

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

$$\text{Aof} = \left(\frac{3,232,804}{2,884,523} \right)^n$$

$$\text{Aof} = 2,758 \text{ MCF D}$$

TESTED BY W. L. JacksonWITNESSED BY John Walker

W. H. Williams, Jr.
W. H. Williams, Jr.
Chief Engineer

PHILLIPS NO. 1-23

2/28/63

Will test well today.

3/1/63

Ran 3 hour test - flow calculation 2,534 MCF absolute potential 2,761 MCF. Heavy spray of distillate last hour of test.