

DRILLING AND COMPLETION HISTORY
CONSOLIDATED OIL & GAS, INC.
NAVAJO NO. 3-11
SAN JUAN COUNTY, NEW MEXICO
January 19, 1965

LOCATION: 1850' FSL, 710' FEL, Section 11
Township 25 North, Range 10 West

ELEVATIONS: 6802' GL
6814' KB

SPUD: December 20, 1964

DRILLING COMPLETED: January 5, 1965
WELL COMPLETED: January 9, 1965

TOTAL DEPTH: 6698'

CASING: Surface - 8 5/8" 32# set at 268' with 150 sx. regular with 2% CaCl.
Production - 5 1/2" 17# & 15.5# set at 6695' with 200 sx. 50/50 Pozmix with 4% gel.

TUBING: 1 1/2" EUE landed at 6621' KB.

LOGS: Welex Acoustic Velocity & Induction Electric Logs

CORES & DRILLSTEM TESTS: None

FORMATION TOPS: (Log)

Pictured Cliffs	2032'
Cliffhouse	3510'
Pt. Lookout	4540'
Gallup	5596'
Greenhorn	6478'
Dakota	6628'

PRODUCING PERFORATIONS: 6630' - 6635'
6646' - 6654'

TREATMENT: Sand water frac with 40,000 lbs. 20-40 sand and 43,176 gal. water.

INITIAL POTENTIAL: Flow volume thru 3/4" choke: 2949 MCFD.
Calculated Absolute Open Flow Potential: 3757 MCFD.



WELL:

NAVAJO NO. 3-11

1850' FSL, 710' FEL, Sec. 11-T25N-R10W

FIELD:

Basin Dakota

COUNTY:

San Juan STATE: New Mexico

ELEVATIONS:

6802' GL

6814' KB

12/20/64

Depth 236'. Drilled 236' of 12 1/4" hole. Dev. 1/2° at 180'. Vis. 38.
Spudded 2 a.m.

12/21/64

Depth 1120'. Drilled 265' of 12 1/4" hole. Ran 9 joints to 268', 8 5/8" 32# casing. Cemented with 150 sx. regular with 2% CaCl, good returns throughout. Plug down 10 a.m. Pressured up to 1000#, held OK. Present operation, drilling with Bit 1. Dev. 3/4° at 860', drilling with water.

12/22/64

Depth 2520'. Drilled 1400' of sand and shale. Dev. 1/2° at 1500'. Present operation, drilling with Bit 3. Drilling with water.

12/23/64

Depth 3240'. Drilled 720' of sand and shale. Dev. 1/2° at 2550', 3/4° at 3000'. Drilling with water. Present operation, drilling with Bit 5.

12/24/64

Depth 3691'. Drilled 451' of sand and shale. Dev. 3/4° at 3485'. Drilling with water. Present operation, making trip for Bit 7.

12/25/64

Depth 4038'.

12/26/64

Depth 4382'. Dev. 1/2° at 4150'.

WELL:

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12/27/64

Depth 4813'. Mud 9.0. Vis. 48.

12/28/64

Depth 5146'. Drilled 333' of sand and shale. Present operation, tripping for Bit 12. Vis. 51. Mud. 9.0. Water loss 8.8. PH 9.5. Dev. $3/4^{\circ}$ at 4900'.

12/29/64

Depth 5355'. Drilled 210' of sand and shale. Mud 9.1. Vis. 61. Water loss 8.8. Filter cake 2/32. .25% sand. Drilling with Bit 13.

12/30/64

Depth 5645'. Drilled 290' of sand and shale. Mud 9.1. Vis. 56. Water loss 8.0. Filter cake 2/32. Sand content .25%. Present operation, drilling with Bit 15.

12/31/64

Depth 5946'. Drilled 295' of sand and shale. Mud 9.2. Vis. 55. Water loss 8.2. Present operation, making trip for Bit 16.

1/1/65

Depth 6237'.

1/2/65

Depth 6525'.

1/3/65

Depth 6626'. Top of DK 6618', drilled 101' of sand and shale. Mud 9.4. Vis. 61. Water loss 8.0. Mud cake 2/32. PH 8.5.

1/4/65

Depth 6674'. Drilled 48' of sand. Strapped drill pipe 9' deep. Rigged up Welex. Present operation, logging.

WELL:

NAVAJO NO. 3

1/5/65

Depth 6698'. Drilled 24' of sand and shale. After logging well, found they were not deep enough. Went back in hole and drilled 20', pulled out and logged bottom 20'.

1/6/65

Started rigging up at 3 p.m. went in hole and circulated. Came out of hole laying down drill pipe. Started running 5 1/2" casing at 2 a.m. Present operation, running pipe.

1/7/65

Ran 82 joints of 5 1/2" 17# casing - 2765'. Ran 114 joints 5 1/2" 15.50# - 3947' for a total of 196 joints, 6712', set at 6695' KB. Float collar at 6663' KB. Pretreated 200 barrels of mud with 12 gal. hydrazine and 15 gal. bactrin. Preflushed with 20 bbls. GP 100. Cemented with 200 sx. 50/50 Poz with 4% gel. Plug down 9 a.m. 1/6. Bumped plug with 2000#, held OK. Good circulation throughout job. Cut pipe off and nipped up, ran wire line, found TD at 6664' KB. Shut down at midnight, will start picking up 1 1/2" this a.m.

1/8/65

Picked up 222 joints 1 1/2" EUE total 6673.93', tagged float collar at 6669' KB. Pressured up 3000 psi, held OK. Circulating hole, spotted 500 gal. 15% HCL. Pulled tubing, rigged up Welex, ran correlation log. Perforated 4 per foot from 6630' to 6635', 6 per foot from 6646' to 6654'. Hooked up Western Company, five FM 600's. Treated with 40,000 lbs. 20-40 sand. Average treating pressure 2000#, average injection rate 39.6 BPM, job complete 12:55 a.m. Flowed back till 1:45 a.m. Started in hole with tubing. At 6 a.m. blowing at 1320', unloading sand and water. Well kicked off with 2800 MCFD, with very heavy spray of water and sand and trace of green oil. Present operation, running tubing.

Broke	1800#	Put acid away in three stages	
Initial treat. press.	2200#	Initial IR	40 BFM
Max. treat. press.	2700#	Max. IR	42 BPM
Min. treat. press.	2200#	Min. IR	38 BPM
Final treat. press.	2600#	Final IR	38 BPM
Average treat. press.	2400#	Average IR	39.6 BPM
Initial shut in press.	2000#	Sand	40,000 lbs. 20-40
5 min. shut in	1800#	Additives	2 1/2# FR2/1000 gal.
10 min. shut in	1500#	Ball Sealers	55
Hyd. HP	2329#	Total fluid	52,164 gal.
		Treating fluid	43,176 gal.
		Flush	None
		Avg. sand	9.5#/Gal.

WELL:

NAVAJO NO. 3

1/9/65

Gauged well at 3750 MCF. Ran a total of 220 joints of 1 1/2" EUE, total footage of 6610.32' landed at 6621' KB. Dropped ball and pumped out plug. Blew well through casing and shut in. Released rig at 2:30 p.m.

1/10/65

14 hour shut in. 1700/1700 psi.

1/11/65

1850/1850#.

1/12/65

1975/1975#.

1/13/65

Shut in pressure 2000#, tubing and casing. Will run 3 hr. test on well tomorrow.

1/14/65

Will test today.

1/15/65

Ran 3 hour test. Instant shut in pressure 2177/2177#. Average rate of flow 3757 MCFD.

OPEN FLOW TEST DATA

DATE January 14, 1965

Operator Consolidated Oil & Gas Inc.		Lease Navajo 3-11	
Location 1850' FSL & 710' FEL Sec 11, 25 N, 10 W		County San Juan	State New Mexico
Formation Basin Dakota		Pool Basin Dakota	
Casing: Diameter 5 1/2" 15.50#	Set At: Feet 6696	Tubing: Diameter 1 1/2"	Set At: Feet 6673
Pay Zone: From 6650	To 6690	Total Depth: 6700	
Stimulation Method Sand & Water Frac.		Flow Through Casing	Flow Through Tubing XX

Choke Size, Inches 3/4"	Choke Constant: C 14.1605			
Shut-In Pressure, Casing, PSIG 2117 2177	+ 12 = PSIA 2129 2189	Days Shut-In 7 Days	Shut-In Pressure, Tubing PSIG 2177	+ 12 = PSIA 2189
Flowing Pressure: P PSIG 200	+ 12 = PSIA 212		Working Pressure: Pw PSIG 1150	+ 12 = PSIA 1162
Temperature: T °F 40	n = .75		Fpv (From Tables) 1.030	Gravity .700

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

$$Q = 14.1605 \times 212 \times 1.0302 \times .9258 \times 1.030 = \underline{2949} \text{ MCF/D}$$

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

$$Aof = \left(\frac{4,791,721}{3,469,221} \right)^n = 1.3812^{.75} = 1.2740$$

$$Aof = \underline{3,757} \text{ MCF/D}$$

TESTED BY A.A. Prater

WITNESSED BY Ralph Abbott

Clyde Phillips
Clyde Phillips