

# DRILLING & COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

CHAMPLIN NO. 4-35

Rio Arriba County, New Mexico  
July 2, 1963

RECEIVED

JUL 1 1963

Location: 1650' F/NL, 1650' F/WL, Section 35, RIO ARriba COUNTY, NEW MEXICO  
T27N-R4W, NMPM

Elevations: 7068' GL  
7080' KB - all measurements from KB

Spud: April 11, 1963

Drilling Completed: May 6, 1963  
Well Completed: June 13, 1963

Total Depth: 8350' Drilled  
8334' PBTB

Casing:

Surface: 10 3/4" 32.75# set at 320' with 250 sx. reg.  
CaCl<sub>2</sub> cement.

Production: 7" 23# set at 5761' cemented with 80 sx. 50/50  
Pozmix thru casing shoe and 125 sx 50-50  
Pozmix thru stage collar @ 4053'. 4 1/2" liner  
set at 8350' KB with 145 sx. Diacel "D" and 90  
sx regular. Top of liner at 5641' KB.

Tubing: 1 1/2" landed at 8033'  
1" landed at 3793'

Logs: Lane Wells Gamma Ray - Neutron  
Western Co. Gammatron

Cores & Drillstem Tests: None

Formation Tops: (Log)

Fruitland	3724'(+3356')
Pictured Cliffs	3888'(+3192')
Cliffhouse	5667'(+1413')
Greenhorn	8035'(-955')
Dakota	8130'(-1050')

Producing Perforations:

	PC	DK
	3906'-3916'	8136'-8154'
	3923'-3946'	8166'-8172'
	3954'-3966'	8178'-8194'
		8238'-8244'
		8274'-8296'
		8320'-8330'

Treatment: PC Sand water frac with 100,000 lbs. sand and  
98,000 gals water.

DK Sand water frac with 95,000 lbs. sand and  
134,776 gals water in two stages.

Initial Potential: PC Flow volume thru 3/4" choke - 1,425 MCF  
CAOF - 3976 MCF

DK Flow volume thru 3/4" choke - 2,309 MCF

WELL: CHAMPLIN NO. 4-35  
1650' F/NL, 1650' F/WL, Sec. 35, T27N-R4W  
FIELD: Basin Dakota, Tapicito Pictured Cliffs  
COUNTY: Rio Arriba STATE: New Mexico  
ELEVATIONS: 7068' GL  
7080' KB

4/9/63

Moving in rotary rig.

4/10/63

Moved in rotary rig.

4/11/63

Started spudding at midnight. Depth 234'. Present operation: drilling 15" hole to complete surface. Dev. 1/2° at 100', 1/2° at 210'.

4/12/63

Drilled 320' of 15" hole. Ran 7 joints 10 3/4" surface casing. Cemented with 250 sx. regular, CaCl<sub>2</sub>. Plug down at 2 p.m. 4/11/63. Good returns on cement. Nippled up, pressured up to 1000 lbs., held 15 minutes. Present operation, drilling 8 3/4" hole at 700'.

4/13/63

Depth 1840, drilled 1140' sand and shale. Present operation drilling with Bit 3. Mud weight 8.9, visc. 35, water loss 9. Dev. 3/4° at 1650'.

4/14/63

Depth 2660'. Drilled 820' sand and shale. Present operation drilling with Bit #4, mud weight 9.1, visc. 35, water loss 10, Dev. 1 1/2° at 2100'. 1 1/4° at 2520'.

4/15/63

Depth 3235'. Present operation drilling with Bit 5. Mud weight 9.1, visc. 39, water loss 9.2, Cake 2/32. Ph. 10. 1 1/4° Dev. at 2798'. 1 1/2° at 3107'.

4/16/63

Depth 3685'. Drilled 450' sand and shale. Present operation drilling with Bit 7. Mud weight 9.2, Visc. 39, water loss 9. 1 1/2° Dev. at 3170'. 2° at 3500'.

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4/17/63

Depth 4100'. Drilled 415' sand and shale. Present operation drilling ahead with Bit 8. Mud weight 9, Visc. 40, water loss 11.2. 1 1/2° Dev. at 4010'. Lost 75 barrels of mud at 3935'. Lost 200 barrels of mud at 4010'.

4/18/63

Depth 4461'. Drilled 371' sand and shale. Present operation drilling with Bit 9. Mud weight 9.1, visc. 41, water loss 9.8. Dev. 1° at 4400'.

4/19/63

Depth 4797'. Drilled 336' sand and shale. Present operation drilling with Bit 10. Mud weight 9.3, visc. 42, water loss 9.2, 1° Dev. at 4400'. Gas pressure 250#.

4/20/63

Depth 4987', drilled 190' sand and shale. Present operation drilling with Bit 12. Mud weight 9.4, visc. 44, water loss 9.

4/21/63

Depth 5204'. Drilled 217' sand and shale. Present operation drilling. Mud weight 9.5, visc. 46, drilling with Bit 13.

4/22/63

Depth 5369'. Drilled 165' sand and shale. Present operation tripping for Bit 15. Mud weight 9.4, visc. 43, water loss 10, 1° Dev. at 5281'.

4/23/63

Depth 5506'. Drilled 137' sand and shale. Drilling with Bit 16. Mud weight 9.4, visc. 44, water loss 10.4, 1/4° Dev. at 5281'.

4/24/63

Depth 5660'. Drilled 141', making trip for Bit 18, mud weight 9.3, visc. 45, water loss 10.4, started injecting gas at 5660'.

4/25/63

Depth 5750'. Drilled 130'. Present operation - circulating to log. Mud weight 9.2, visc. 65, water loss 10.4, Dev. 1° at 5685'. Lost approximately 200 barrels of mud at 5697'.

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4/26/63

Came out of hole - ran Gammaray-Neutron log. Went back in hole with drill pipe. Came out of hole - laid down 4 1/2" drill pipe, rigged up - ran 177 joints of 7" 23# casing, total of 5767.91', set at 5760.91 KB, stage collar set at 4053.24 KB - cemented first stage with 80 sx. 50-50 Posmix, 2% CaCl<sub>2</sub> plug down at 5:00 a.m. 4-26-63. Bumped plug with 2000#. Cemented second stage at 8:20 a.m. with 125 sx. 50-50 Posmix, 2% CaCl<sub>2</sub>, bumped plug with 2000#. Good circulation throughout both stages.

4/27/63

Rig shut down, waiting on drill pipe.

4/28/63

Will start up today.

4/29/63

Picked up 3 1/2" drill pipe. Ran to top of differential valve tool 4053'. Pressured up to 1500#. Held okay. Drilled differential valve tool 4053'. Pressured up to 1500#. Held okay. Came out of hole. Present operation - blowing down at 5000'.

4/30/63

Depth 6095'. Drilled 345', drilling with Bit 21. 1 1/2° Dev. at 6016'. Gas pressure 600#.

5/1/63

Depth 6680'. Drilled 585' sand and shale. Drilling with bit #22. Gas pressure 550#. 1 1/2° Dev. at 6400'. Had estimated 100 MCFD natural show at 6150'.

5/2/63

Depth 7477'. Drilled 794' sand. Drilling with Bit 23. 4 1/4° Dev. at 7400'.

5/3/63

Depth 8200'. Drilled 723'. Hit oil at 8149'. Had oil on drill pipe. Present operation blowing hole with Bit 24. Dev. 6° at 7900'. Gas psi 550.

5/4/63

Depth 8280'. Drilled 80' with no dust. (making oil). Gas pressure 550#. Present operation waiting on motor for rig. Blowing hole.

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5/5/63

Depth 8280'. Present operation blowing hole - came out of hole. Ran logs - showed to be 75' low compared to Champlin No. 1-35. Now blowing hole to drill out. Going to drill 66' to 70' more hole.

5/6/63

Drilled from 8280' to 8350'. Blowing and cleaning hole. Came out of hole - ran liner. Ran 89 joints of 4 1/2" 11.60# casing. Total 2796.17'. Burns hanger, 2.65'. Total pipe and hanger 2708.82'. 4 1/2" casing set at 8350' from KB. Top of liner 5641.18' from KB. Total overlap 119.73'. Cemented with 145 sx Diacel "D" - 90 sx regular 4% gel. Bumped plug with 1000# - released pressure, held okay. Plug down at 8 a.m.

5/7/63

Waiting on completion rig

5/8/63

Waiting on completion rig.

5/9/63

Still have rotary over hole.

5/10/63

Still have rotary over hole.

5/11/63

Still have rotary over hole.

5/12/63

Still have rotary over hole.

5/13/63

Still have rotary over hole.

5/14/63

Still have rotary over hole.

WELL: CHAMPLIN NO. 4-35

5/26/63

Moved in completion rig, rigged up. Nippled up, started picking up 2 3/8" completion string. Started hitting cement bridges at 3800'. Present operation drilling cement bridges at 4125'.

5/27/63

Finished drilling, cleaned out from 4125' to 4800' from soft to hard cement. Fell through cement at 4800'. Went on to top of liner at 5641'. Pressured up to 1500#, top of liner held. Present operation coming out of hole with 6 1/4" bit. Note: Drilling soft to firm cement from 3800' to 4800'.

5/28/63

Drilling line stranded. Shut down waiting on new drilling line. Put on new drilling, finished pulling 6 1/4" bit. Went back in hole with 3 7/8" bit. Cleaned out to 8334'. Pressured up to 3000#, held okay. Spotted 1000 gals of 15% acid. Present operation coming out of hole and preparing to log.

5/30/63

Rig shut down. Waiting on frac water. Cleaning water hole today.

5/31/63

Completion rig shut down. Cleaning out water hole. Will finish cleaning out water hole by noon today. Will start pumping sometime tonight.

6/1/63

Got water hole cleaned out, should start pumping water this a.m.

6/2/63

Started completion rig up this a.m. Rigged up Dowell, pressured up on casing to 3000#. Held okay. Present operation 1st stage of Dakota.

6/3/63

Rig up Western. Perforated 4 per foot, 8320' - 8330', 8274' - 8296', 8238' - 8244'. Rig up Dowell to stage acid. First stage pressured up to 2450#, formation started taking acid. Pumped 5 bbls acid, broke from 2450 to 1600#. Let set 5 minutes, pressure dropped to 700#.

Second stage: Start pumping, rate 5 BPM, pressure went from 750# to 2800#. Let set 5 minutes. Pressure dropped to 1000#.

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6/3/63 (con't)

Third stage: Start pumping - rate 5 BPM, pressure went from 1000# to 2800#. Let set 5 minutes, pressure dropped to 1100#.

Fourth stage: Put all pumps on - pressure went from 1100# to 3200#, pumped 1 minute, pressure dropped from 3200# to 2600#. Shut pumps down. Pressure gradually dropped from 2600# to 2100#. Total acid displaced. Started frac. (4 Allison)

## 1st stage Dakota

All pumps on: 3600#	B. D. and fill 70 bbls
Maximum pressure 3200#	Treatment fluid 64,000 gals.
Minimum pressure 2200#	Over flush 50 bbls
Average treatment pressure 2300#	# of sand 20,000# 40-60, 35,000# 20-40
Maximum treatment pressure 2750#	average injection rate 46.0 BPM
Minimum treatment pressure 2200#	Rubber balls 65
Final treatment pressure 2750#	J-100 150# 2 1/2# per 1,000 gals
Instant shutin pressure 2100#	Job complete @ 11:01 a.m. 6-2-63
5 minute shut in pressure 1400#	

Rig up lubricator well had 1400#. Started in hole with plug. Got to 4000'. Lubricator stopped leaking. Set Baker magnet plug @ 8210' KB. Attempted to pressure up on bridge plug at 8210'. Well taking fluid rate of 10 BPM. at 800#. Stopped pump. Well on vacuum. Ran Baker 4 1/2" F.B. packer, set @ 5671' KB. just inside of 4 1/2" liner. Pressured up down tubing to 2200#, held okay. Attempted to pump down back side, hole taking fluid rate of 6 BPM @ 600#. Released 4 1/2" packer came out of hole, ran 7" packer, found hole in casing @ 2927', 963' above PC. Pressured up to 2100# below hole, held okay. Pulled packer up to 2722' and set. Pressured up on back side to 1000#, held okay. Pumped down tubing rate of 6 BPM @ 800#. Shut down pump, well on vacuum. Started squeeze. Squeezed well with 100 sx regular 2% calcium chloride. After pumping 50 sx in formation, started squeezing. Total pumped into formation 80 sx, left 20 sx inside of casing. Well squeezed almost immediately. Final squeeze and standing pressure 2200#. Job completed @ 3:30 a.m., 6-3-63. Left 120' of cement above hole in casing. Released tool, come out of hole. Present operation, waiting on cement.

6/4/63

Went in hole with 6 1/4" bit. Found top of cement at 2784'. Drilled good, firm cement from 2784' to 3000'. Total of 216' of cement drilled. Pressured up to 900# with rig pump - held okay. Came out of hole with 6 1/4" bit. Ran wire line to check for possible bridges. Hit bridge at 7777'. Could not spud through. Present operation going in hole with 3 7/8" bit to clean out to top of bridge plug at 8210'. Will set Baker Model FA 7" packer at approximately 3800'. Packer should be in this a.m.

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6/5/63

Went in hole with 3 7/8" bit. Hit sand at 7765' tubing measurements. Cleaned out sand from 7765' to 8210', top of plug. (sand is of real silty, fine grain, looks like surface sand.) Pressured up on casing to 900#. Held okay. Came out of hole with tubing. Ran and set Baker Model FA packer at 3810' KB. Set with wire line. Ran approximately 1700' of 4 1/2" casing. Picked up one joint of 4 1/2" casing. Traveling blocks hit tubing board. Board came loose, 8300' of 2 3/8" tubing shifted, swung around side of derrick. Derrick and tubing in danger of falling. Present operation attempting to lay 2" tubing down with cat line.

6/6/63

Finished laying down 2 3/8" tubing. Finished running 4 1/2" casing. Stung into Model FA packer. Rig up Dowell, pressured up 4 1/2" casing to 3000#, held okay. Rig up Western Co. Perforating Graneros. 8194'-8178' 2 per foot, 8172'-66' 2 per foot, 8154'-8136' 4 per foot, total of 66 holes.

Rig up Dowell - started to frac. B. D. 1 pump. Pumped in with 2 1/2 Allison rate of 21 BPM @ 3100#. Started to start J-114, Dowell had forgot to bring J-114. Shut down. Waited on J agent from 10:30 p.m. to 3 a.m.

Started frac.

Started pumping in	B. D. and fill 4,200 gals
Maximum pressure treatment 3100#	Treatment fluid 70,776 gals.
Minimum pressure treatment 2900#	Over flush none
Average treatment pressure 3000#	# of sand 20-40 - 40,000#
Final treatment pressure 3100#	Injection rate treatment 40 BPM
Instant shut in pressure 1900#	Rubber balls none
8 minute shut in 1900#	J-114 300#
Job complete at 4:05 a.m.	Flushed with 7,224 gals.
17 minute shut in 1750#	

Rig up Western to set plug @ 5760'. Perforated 3966'-3954'; 3946'-3923'; 3916'-3906', 2 per foot, total 70 holes.

All pumps on 2400#	B. D. and fill 2,000 gals.
B. D. 1 pump 1500# to 1200#	Treatment fluid 98,000 gals.
Maximum treatment pressure 2650#	Over flush none
Minimum treatment pressure 2400#	# of sand, 100,000# 20-40
Average treatment pressure 2400#	Injection rate treatment 47.1 BPM
Final treatment pressure 2650#	Rubber balls 30
Instant shut in 500#	Flushed with 5,628 gals
5 minute shut in 500#	
Job complete @ 8:04 a.m.	

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6/7/63

Bled well off after frac - pulled and laid 3810' of 4 1/2" casing. Rigged up, going in hole blowing down. Well started kicking at 2100'. Ran tubing to 3100'. Well unloading good on its own. Went on to 4800'. Guaged well. Well making 3210 MCFD from PC. Float in tubing started leaking - pressured back up above PC. Put Baker string float on. Present operation going on in hole to drill plug at 5760'. PC still making some sand a slight spray of water.

6/8/63

Go in hole after putting Baker float on. Hit frac sand @ 5452'. Cleaned out sand from 5452' to 5760' (308) had lot of trouble cleaning out sand. Hung tubing up for 2 hours. On bridge plug @ 10:30 p.m. 6-7-63. Drilled on plug from 10:30 p.m. to this 4:30 a.m. Have not drilled plug. Think there is a hole in tubing. Started out of hole to check for leak @ 4:30 a.m.

6/9/63

Came out of hole with tubing, found hole in tubing 6 joints above bit, found bit locked up. Ran new bit back in, drilled plug @ 5760', water came in, pulled back up hole, blew back down, finished drilling plug loose. Present operation blowing down @ 7620'. Well making some sand, water, lot of oil.

6/10/63

Finished blowing down and drilled plug down to 8210'. Have been drilling at this depth for 13 hours. Have made about one foot. Hole is clean of water and sand. Still making oil and gas.

6/11/63

Made trip from 8210' for new bit. Bit had all teeth off and locked up. Ran new bit. Broke circulation 3 times before reaching depth of 8210'. Blew lots of oil out of hole, drilled top off of plug at 8210'. Water and sand came in. Pulled back up hole, started blowing down. Blew back to 8210' - bridge plug. Drilled plug loose. Present operation blowing and drilling plug down to 8230'. Have picked up sizeable increase in gas since drilling last plug. Still making lots of sand and water.

6/12/63

Finished drilling and pushing plug to 8334', plug back TD. Blowing and cleaning hole. Well logging too much to get gauge. Laying down 8334' of 2 3/8" tubing. Closed preventer. Rigged up Western to run Model D packer. Could not get preventer open. Had to get another closing unit out of Farmington. Rigged up closing unit and opened preventer. Ran and set Model D packer at 8050'. Got packer set at 1:30 a.m. 6-12-63. Present operation running 1 1/2" tubing.

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## OPEN FLOW TEST DATA

6/13/63

Finished running 1 1/2" and 1" tubing. Landed tubing at 4:30 p.m. 6-12-63. Ran 248 joints of 1 1/2" tubing to 8000.56 plus subs and donut 19.20 plus 13' KB. Tubing landed at 8032.76 from KB. Ran 120 joints of 1" tubing to 3780.23' plus KB. Landed tubing at 3793.23 from KB. One jet collar at 3512.98 from KB and one jet collar at 3069.63 from KB.

6/20/63

Moving in completion rig. Start rigging up. Set choke in Dakota tubing. Opened Pictured Cliffs. Start bleeding well down. Will start pulling tubing this a.m.

6/23/63

Finished rigging up. Pulled 1" tubing and 1 1/2" tubing. Could not find anything wrong. Present operation preparing to start back in hole with 1 1/2" tubing. Checking tubing with rig pump.

6/24/63

Got ready to run 1 1/2" tubing back in hole. Could not get closing unit to work. Last 7 hours working on shaffer. Rigged up 12 extension nipples with mill on bottom of 1 1/2" tubing. Backed off 1 1/2". Going in hole with 1 1/2" tubing. Tubing stopped 4' above packer. Pressured up to 1200# on tubing. Held okay. Rotated tubing approximately 4', fell free. Indicated that pump out plug was lodged in packer. Present operation coming out of hole with tubing to run seal assembly.

6/25/63

Came out of hole with 1 1/2" tubing. Took off mill. Put seal assembly on. Ran to 8050'. When going into packer, there was a definite change in gas flow. Spaced out and landed 1 1/2" tubing. Ran 1" tubing. Ran 1" tubing with jet collars and landed. Tubing data same as original tally. Shut well in.

DATE July 12, 1963

Operator Consolidated Oil & Gas, Inc.		Lease Champlin 4-35	
Location 1650' FNL & 1650' FWL, Sec. 35, T27N, R4W		County Rio Arriba	State New Mexico
Formation Dakota		Basin Dakota	
Casing Diameter 4 1/2"	Set At: Feet 8350	Tubing Diameter 1 1/2"	Set At: Feet 8033
Pay Zone: From 8136	To 8330	Total Depth: 8350	
Stimulation Method Sand water frac		Flow Through Casing	Flow Through Tubing X

Choke Size, inches 0.75	Choke Constant: C		
Shut-in Pressure, Casing, PSIG 158	+ 12 = PSIA 170	Days Shut-in 7	Shut-in Pressure, Tubing, PSIG 1874
Flowing Pressure: P, PSIG 158	+ 12 = PSIA 170	Working Pressure: P <sub>w</sub> , PSIG 1874	+ 12 = PSIA 1886
Temperature: T 47 °F	n = 0.75	F <sub>pv</sub> (From Tables) 1.023	Gravity 0.7 (est)

$$\text{CHOKE VOLUME} = Q = C \times P_1 \times F_1 \times F_g \times F_{pv}$$

$$Q = 14.1605 \times 170 \times 1.0127 \times .9258 \times 1.023 = 2,309 \text{ MCF/D}$$

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

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

$$Aof = \text{MCF/D}$$

TESTED BY: Clyde Phillips

WITNESSED BY:

*W. H. Williams*  
W. H. Williams, Chief Engineer

## OPEN FLOW TEST DATA

DATE July 5, 1963

Operator Consolidated Oil & Gas, Inc.		Lease Champlin No. 4-35	
Location 1650' FNL & 1650' FWL, Sec. 35, T27N, R4W		County Rio Arriba	State New Mexico
Formation Pictured Cliffs		Tapicito	
Casing Diameter 7"	Set At: Feet 5761'	Tubing Diameter 1"	Set At: Feet 3790'
Pay Zone: From 3906'	To 3966'	Total Depth: 8350'	
Stimulation Method Sand water frac		Flow Through Casing	Flow Through Tubing X

Choke Size, inches 0.75	Choke Constant: C 14.1605		
Shut-in Pressure, Casing, PSIG 944	+ 12 = PSIA 956	Days Shut-in 7	Shut-in Pressure, Tubing, PSIG 943
Flowing Pressure: P, PSIG 93	+ 12 = PSIA 105	Working Pressure: P <sub>w</sub> , PSIG 782	+ 12 = PSIA 794
Temperature: T 38 °F	n = .85	F <sub>pv</sub> (From Tables) 1.013	Gravity 0.7 (est)

$$\text{CHOKE VOLUME} = Q = C \times P_1 \times F_1 \times F_g \times F_{pv}$$

$$Q = 14.1605 \times 105 \times 1.0218 \times .9258 \times 1.013 = 1,425 \text{ MCF/D}$$

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

$$Aof = \left( \frac{956^2}{956^2 - 794^2} \right)^n = \frac{913,936}{273,500} = 3.34 \times .85$$

$$Aof = 3,976 \text{ MCF/D}$$

TESTED BY: A. Prater

WITNESSED BY:

*W. H. Williams*  
W. H. Williams  
Chief Engineer