

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE\*  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>NM - 18323</b>
2. NAME OF OPERATOR <b>Continental Oil Company</b>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR <b>152 North Durbin St., Casper, Wyo. 82601</b>		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface <b>1100' FSL, 1485' FWL</b>		8. FARM OR LEASE NAME <b>Conoco 29-4</b>
14. PERMIT NO.		9. WELL NO. <b>4</b>
15. ELEVATIONS (Show whether DF, RT, GR, etc.) <b>7020' GR, 7033' KB</b>		10. FIELD AND POOL, OR WILDCAT <b>E. San Juan - Dakota</b>
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA <b>Sec. 24, T29N, R4W</b>
		12. COUNTY OR PARISH <b>Rio Arriba</b>
		13. STATE <b>New Mexico</b>

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <b>Well Progress 3-15-74</b>	<input checked="" type="checkbox"/>

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

See attached Drilling Report.



USGS(5) NMOCC(2) File

18. I hereby certify that the foregoing is true and correct

SIGNED J. A. Uhlen TITLE Administrative Supervisor DATE 3/18/74

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

TD 8425', PBDT 8381'. 2-25: TP 50 psi, CP 1650 psi. Rigged up to swab. Fluid level at surface. Made four swab runs, approx. 1200' each time. Well kicked off. Flowing heavily gas cut load water to pit. CP bled down to 350 psi and leveled off after 8 hrs. Left well cleaning up to pit overnight.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

TD 8425', PBDT 8381'. 2-26: Well logged off during night. CP 750 psi. Went in hole with swab. Found fluid level 5200' from surface. Made one swab run. Pulled 800' fluid. Well kicked off. Flowed gas cut load water to pit. Pulled CP down to 150 psi. Well down to weak blow. SI for 1 hr. CP built up to 225 psi, TP 175 psi. Bled down tubing. Went in hole with swab. Found scattered fluid at 4600' from surface. Went to bottom with swab. Rec.  $\frac{1}{2}$  BF. Shut well in. Will hook up differential controller to clean up well. Drop from report until well cleans up and is tested.



0-13-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

TD 8425', PBTD 8381'. MORT.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

2-13-74 TD 8425', PBTD 8381'. Waiting on completion unit.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

2-14-74 TD 8425', PBTD 8381'. Waiting on completion unit.

Conoco 29-4 #3 - Conoco 1.0000000 - Mesaverde - 6730' - CONFIDENTIAL

TD 8136', PBTD 7300'. Waiting on completion.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

TD 8425', PBTD 8381'. Waiting on completion unit.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

0-19-74 TD 8425', PBTD 8381'. Waiting on completion unit.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

2-19: Moved on and rigged up Big "A" Well Service. Installed BOP's. Opened annulus to pit. Recovering frac water. Cannot flow. Tubing has float collar. Flowing to pit overnight.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

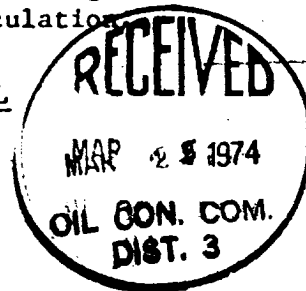
2-21-74 TD 8425', PBTD 8381'. 2-20: Tagged sand top at 7517' KB with 2 3/8" tubing. Bottom 18' perforations covered with sand. Pulled out of hole and well unloaded out annulus. Laid down float collar. Ran back in hole with 2 3/8" tubing. Hooked up circulating equipment. SDON.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

2-22-74 TD 8425', PBTD 8381'. 2-21: Bled press. off tubing. Well unloaded. Killed tubing with 1% KCl water. Broke circulation 10 jts. above bottom perms. Reverse circulating sand, indicating approx. 300' fillup above bottom perms. Sand must be suspended in annulus when tagging fillup at 7517' KB. Circ. out 3 jts. to 7324' KB. Have to kill tubing to make connection. Formation gas coming out of top set of perforations. Rigged over for normal circulation. SDON.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - CONFIDENTIAL

2-25-74 TD 8425', PBTD 8381'. No report.



Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

2-7-74  
Mixing frac fluid. TD 8425', PBTD 8381'. Closed pipe rams. Pressured casing and lines to 1200 psi for 15 min. Held okay. Circ. 2½ hrs. Shut down for 1 hr. Observed well. No gas to surface. Resumed circulating. Got gas cut water. After 1 hr. 10 min. water bubbled 1' above flow line and drilling nipple. Gas vapor above rig floor. Gas cut water decreased and disappeared after 15 min. Circ. 2 hrs. with no further shows of gas. Cleaned pits. Mixed KCl water. Displaced hole with same. Circ. with KCl water 1 hr. Pulled out of hole. Ran Gamma Collar Log 7650-7050'. Perf. 7534-7504' with 2 JSPF. Gas began breaking out of water when nipping down lubricator. Ran in hole with tubing open ended. Gas quit breaking out of water when tubing was half in hole. Lines and pumps froze up while circulating at 3 B/M. Now thawing lines and mixing frac fluid. Temp. -15° F. Cum. mud costs: \$18,893. Arapahoe 14/20½/6.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

2-8-74  
TD 8425', PBTD 8381'. Finished thawing lines. Mixed frac fluid. Hooked up to tubing head. Tested lines to 3000 psi. Broke circulation. Spotted 500 gals. 15% HCl across perfs 7504-7534'. Picked up tubing and hung at 6840'. Broke down formation with 2400 psi at 5 B/M. Broke back to 2200 psi at 27 B/M. Spotted pad to bottom of tubing. Closed in tubing valve. Pumped pad to perfs. Started frac. Pumped 500 gal. acid, 243 bbls. frac fluid, 30,000 gals. frac fluid with 40,000# 20-40 mesh sand and 62 bbls. KCl water in perfs. Pumped in 8160# sand in displacement at 4#/gal. to settle across perfs. Job complete at 2:45 p.m. 2-7-74. Shut well in 12 hrs. Released pressure. Began pulling out of hole with well flowing water. Breakdown of pressures: BDP 2400 psi at 5 B/M; max. pump-in press. 2500 psi at 23 B/M; final pump-in 2350 psi at 25 B/M; 15 min. SIP 1450 psi; max. rate 26 B/M at 2350 psi. Arapahoe 14/20½/7.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

2-9-74  
2-9: Rigging up to perforate. TD 8425', PBTD 8381'. Finished pulling out of hole. Perforated 7300-7320' with 2 JSPF. Rigged down lubricator. Well began kicking gas and water. Rigged up rotary head. Began stripping in hole with Baker aluminum pump-out plug and "S" nipple. Ran 2 jts. tubing. Pump-out plug fell out of nipple while going thru stripping rubber. Picked back up. Installed second pump-out plug. Stripped in to bottom. Tagged sand at 7555'. Filled hole with water. Picked up above liner. Circ. while waiting on sand for plug. Tubing at 6840'. Spotted 2600# sand thru tubing. SI for 1½ hrs., allowing sand to fall to bottom. Pulled out of hole with tubing. Rigged up GO-International. Considerable time spent thawing out lines, pump and rig. Temp. -20° F.

2-10-74  
2-10: Rig released 5 a.m. 2-10-74. Perforated 7210-38' and 7168-85' with 2 JSPF. Stripped tubing equipped with Baker knock-out float into hole with well flowing gas and water. Tagged sand at 7514' (calculated at 7270'). Circ. gas out of hole. Picked up to 6849'. Spotted 2300 sax sand out bottom of tubing. Waited 1 hr. Tagged sand at 7100'. Well dead. Washed sand to 7261'. Circ. 1½ hrs. Broke kelly. Rigged up Western. Spotted 500 gals. acid out tubing. Hung tubing at 6840'. Established inj. rate and frac'd perfs. Pumped total of 500 bbls. acid 239 bbls. pad, 28,500 gals. frac fluid with 40,000# 20-40 sand into perfs. Pumped up power end of one pump truck toward end of frac. Displaced frac fluid to perfs with one pump truck. Job complete at 2 a.m. 2-10-74 (Western Co.). Pressures: breakdown 2500 psi at 17 B/M, broke back to 2250 psi at 29 B/M; max. inj. 2500 psi at 31 B/M; final 2150 psi at 17.5 B/M; ISIP 1750 psi; 15 min. 1550 psi. Arapahoe 14/20½/9.

RECEIVED  
DIST. 3

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

2-2: WOC. Depth 8425'. 6 1/8" hole. Finished rigging up Halliburton. Mixed "Mud Flush." Pumped 500 gal. "Mud Flush" and 640 sax Class "G" cement with 18% salt and 0.5% "GPR-2." Pumped plug down with 77 bbls. mud at 3.4 B/M. Plug latched into liner. Plug okay but did not bump at float collar. Over-displaced 1/2 bbl. Final pump press. 1750 psi. Released pressure. Float held okay. Finished displacing cement at 8:30 a.m. 2-1-74. Picked up above 4 1/2" liner - 80'. Reversed out 120 sax cement. Rigged down Halliburton. Pulled out of hole. Finished reversing out at 9 a.m. 2-1-74. Sandblasted pipe is located 8380-8261' and 7355-7116'.

2-3: Picking up 2 3/8" tubing. Drilled cement stringers from 6350' to 6803', hard cement from 6803' to 6877' (top of liner). Circ. out cement. Closed pipe rams. Pressured up to 1000 psi. Bled back to 350 psi in 5 min. Checked pump. Dug out cellar. Opened bradenhead valve. Pressured up and pressure bled off as before. Found no surface leaks. Now prep. to clean out liner prior to testing same with 4 1/2" squeeze tool.

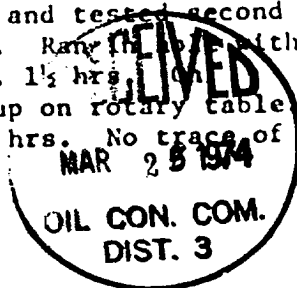
2-4: Pulling out of hole with 4 1/2" squeeze tool. Depth 8381'. Picked up 2 3/8" tubing to liner top at 6877'. Drilled 8' hard cement. Circ. out. Finished picking up tubing to 8371'. Drilled cement stringers to float collar at 8371'. Circ. out. Closed rams. Pressured up to 1200 psi. Bled off slowly. Displaced mud with fresh water. Pulled out of hole. Ran in hole with 4 1/2" squeeze tool. Set 4 1/2" Baker "Retrievamatic" squeeze tool 200' below liner top. Tested liner to 2500 psi. Held okay. Pressured on annulus. Pumped in at 2 1/2 B/M and 2200 psi. Now pulling out of hole with 4 1/2" squeeze tool. Drlg. with water. Cum. mud costs: \$18,893. Arapahoe 14/20 1/2/3.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

WOC. TD 8425', PBTD 8381'. Finished pulling out of hole with 4 1/2" Baker "Retrievamatic" squeeze tool. Ran in hole with Baker 7" "Retrievamatic" squeeze tool to 6854'. Tested liner top to 2500 psi. Held okay. Pumped into annulus. Failed to hold pressure. Pulled 37 stands to 3427'. Pumped into annulus. Held okay. Pressured below squeeze tool. Failed to hold. Ran in with 5 stands to 3892'. Pressured up below squeeze tool to 2500 psi. Held okay. Pumped in annulus. Failed to hold. Isolated leak between 3812' and 3820'. Set squeeze tool at 3674'. Established injection rate at 3 B/M and 2200 psi. Began mixing cement at 3:10 p.m. 2-4-74. Mixed 100 sax Class "A" at 3.2 B/M. Displaced cement with 16 BW. Cleared tool by 1 bbl. Held press. at 500 psi. Staged cement at 30 min. intervals and 1/2 bbl. each time - 3 times. Pressured to 2500 psi. Held okay. Released pressure. Pulled out of hole with squeeze tool. Installed tubing head. Arapahoe 14/20 1/2/4.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

TD 8425', PBTD 8381'. Circ. at 8359'. Drilled 90' cement from 3722' to 3812'. Drilled stringers to 3902'. Circ. 1 1/2 hrs. Closed pipe rams and pressure tested with B-J to 2500 psi for 15 min. Held okay. Released pressure and tested second time to 2500 psi for 15 min. Held okay. Pulled out 6 1/8" bit. Ran in hole with 4 1/2" bit and casing scraper. Washed 15' of fill to 8381'. Circ. 1 1/2 hrs. No trace of gas or flow. Drlg. with water. Arapahoe 14/20 1/2/5.



Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-30-74  
Tripping out to log. Depth 8425' - sand and shale. Made 68'. 6 1/8" hole. Bit #17 - Smith F-5 - 8353' to 8425'. Completed drlg. to TD at 1 a.m. 1-30-74. Circ. and cond. hole to log - 2 hrs. 20 4 3/4" drill collars; WOB 20,000#; 45 RPM; 4 1/2" x 15" pump; 56 SPM; 189 GPM; PP 1000#; ann. vel. 314. Gel-Chem - Wt. 9.5#; Vis. 72; WL 4.0 cc; FC 2/32; pH 9.0. Cum. mud costs: \$17,571. Arapahoe 14/18 1/2/0.

Conoco 29-4 #4 - Conoco 1.0900000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-31-74  
Tripping to log. Depth 8425'. 6 1/8" hole. Tripped out to log. Ran in IES tool. Stopped at 8230'. Logged 8230-7055'. Made conditioning trip. Found bridge at 8230'. Pushed thru. Washed 50' fill from bottom. Circ. 2 hrs. Made 10-stand short trip. Waited 30 min. before going back to T.D. Circ. 1 1/2 hrs. Pulled out to log. Ran IES Log to 8427'. Logged 8427' to 8225'. Ran in with Gamma-Density-CNL. Hit bridge at 8070'. Pulled out of hole. Ran in with bit for conditioning trip. 4 1/2" x 15" pump; 56 SPM; 189 GPM; PP 1000#; ann. vel. 184 and 314. Gel-Chem - Wt. 9.8#; Vis. 72; WL 4.0 cc; FC 2/32; pH 9.0. Cum. mud costs: \$18,071. Arapahoe 14/19 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

2-1-74  
Rigging up to cement liner. Depth 8425'. Finished pulling out of hole to log. Ran CNL, FDC, Gamma-Gamma-Caliper to 8427'. Stuck at 8220' while making calibration run. Pulled loose. Logged 7840' to 7050'. Ran BHC-Sonic from 8000' to 7050'. Laid down drill collars. Waited on orders 4 hrs. Picked up 39 jts. (1546') 4 1/2", 11.6#, K-55, ST&C liner with guide shoe at 8423'. diff. fill float collar at 8387'. Burns liner hanger at 6877'. Ran liner to bottom with drill pipe. No bridges and no fill. Circ. with kelly. Rigging up to cement and thawing lines. Tops: Gallup 7160'; Greenhorn 8048'; Graneros 8094'; Dakota 8263'. Gel-Chem - Wt. 9.8#; Vis. 76; WL 4.0 cc; FC 2/32; pH 10.0; gel strength ini./10 min. 5 / 11; 12% oil; 8% solids; 1/4 of 1% sand; salinity 800 ppm; PV 34; Yp 16. Cum. mud costs: \$18,893. Arapahoe 14/20 1/2/0.



Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-24-74  
Laying down drill collars to Magnaflux. Depth 8149' - sand and shale. Made 24'. 6 1/8" hole. Twisted off while drilling at 8149'. Pulled out. Pin twisted off on 13th drill collar from bottom. Left 12 drill collars in hole. Retrieved fish. Jarred loose with 30,000# over string weight. Now Magnafluxing drill collars. Probable top of Dakota 8155' by mud logger correlation. Bit #14 - Christ. MD-331 - 7333' to 8149'. 20 4 3/4" drill collars; WOB 12,000#; 45 RPM; 4 1/2" x 15" pump; 55 SPM; 185 GPM; PP 1200#; ann. vel. - 295 on drill collars, 180 on drill pipe. Gel-Chem - Wt. 9.8#; Vis. 46; WL 7.5 cc; FC 2/32; pH 9.0; gel strength ini./10 min. 3 / 7; 11% solids; 1/4 of 1% sand; salinity 700 ppm; PV 15; Yp 8. Cum. mud costs: \$14,517. Arapahoe 14/12 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-25-74  
Drilling in sand and shale at 8217'. Made 48'. 6 1/8" hole. Completed Magnafluxing drill collars. Found 2 cracked boxes and 4 pins, 1 cracked sub and 1 cracked stabilizer. Picked up remaining 14 drill collars. Magnafluxed and ran in hole. 20 4 3/4" and 2 3 1/2" drill collars; WOB 18,000#; 60 RPM; 4 1/2" x 15" pump; 50 SPM; 168 GPM; PP 1200#; ann. vel. 275. Gel-Chem - Wt. 9.9#; Vis. 46; WL 7.2 cc; FC 2/32; 1/4 of 1% sand. Cum. mud costs: \$13,995. Arapahoe 14/13 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

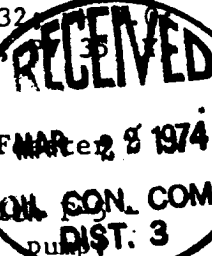
1-26: Working stuck drill pipe. Depth 8295' - sand and shale. Made 78'. 6 1/8" hole. Dev.: 1 1/2 deg. at 8271'. Stuck pipe on connection at 8295'. Circ. okay. 20' travel while working pipe. Considerable shale over shaler. Raising viscosity while working pipe. Gel-Chem - Wt. 9.8#. Bit #14 - Christ. MD 331 - 7333' to 8271'.

1-27: Running free pt. Depth 8295'. 6 1/8" hole. Circ. and cond. mud while working pipe. Could not move pipe with 190,000# max. pull. (100,000# over string wt.) Spotted 75 bbls. crude oil mixed with 55 gal. "Pipe-Lax" around pipe and collar in open hole. Pumped 2 bbls. each 30 min. for 7 hrs. while working pipe. Pipe would not free up. Backed pipe off at 2500' to break off kelly for free point. Set back kelly. Picked up 1 jt. drill pipe. Screwed back into drill pipe. Now running free pt. indicator with GO-International. Sample tops: Greenhorn 8030'; Graneros 8080'; Dakota 8255'. Gel-Chem - Wt. 9.2#.

1-28: Tripping in with bit. Depth 8295'. 6 1/8" hole. Finished running free pt. indicator. Found only bit stuck. Ran in with string shot. Backed off at 8245'. Pulled out of hole. Left one drill collar, sub and dia. bit in hole. Ran in hole with sub, bumper sub, jars, and 19 drill collars. Screwed into fish. Drove down. Jarred up - 3 1/2 hrs. Fish came free. Pulled out of hole. Laid down fish and fishing tools. Bit #15 - Christ. MD37 - 8271' to 8295'. 20 4 3/4" drill collars; 4 1/2" x 15" pump; 50 SPM; 168 GPM; PP 1200#; ann. vel. 275; BHA: bit-sub and 20 drill collars. Gel-Chem - Wt. 9.3#; Vis. 122; WL 4.0 cc; FC 2/32; pH 9.0; Gel strength ini./10 min. 8 / 20; 12% oil; 7% solids; salinity 800 ppm; PV 35; Yp 8. Cum. mud costs: \$15,845. Arapahoe 14/16 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-29-74  
Drilling sand and shale at 8357'. Made 62'. 6 1/8" hole. Bit #16 - Christ. MD 331 - 8295' to 8353'. 20 4 3/4" drill collars; WOB 20,000#; 45 RPM; 4 1/2" x 15" pump; 56 SPM; 189 GPM; PP 1000#; ann. vel. 314; jet vel. 184. Gel-Chem - Wt. 9.5#; Vis. 60; WL 9.2 cc; FC 2/32; pH 8.8. Cum. mud costs: \$16,345. Arapahoe 14/17 1/2/0.



1-17-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Drilling sand and shale at 7120'. Made 65'. 6 1/8" hole. Drld. stage collar at 3831'. Finished pulling up drill pipe. Circ. and cond. mud. Drilled float collar, cement and shoe to 7069'. Tested casing point to 10.7#/gal. equivalent. Bit #12 - Sec. S4 - 7055' to 7106'. 20 4 3/4" drill collars; WOB 20,000#; 60-80 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1150#; ann. vel. 275. Gel-Chem - Wt. 9.7#; Vis. 40; WL 9.0; FC 2/32; pH 13.0; gel strength ini./10 min. 8 / 12; 7% solids; 1/4 of 1% sand; salinity 1300 ppm; PV 14; Yp 8. Cum. mud costs: \$9025. Arapahoe 14/5 1/2/0.

1-18-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Tripping in sand and shale at 7333'. Made 213'. 6 1/8" bit. Bit #13 - DG - 7106-7333'. 20 4 3/4" drill collars; WOB 25,000#; 60 RPM; 5 1/2" x 15" pump; 56 SPM; 188 GPM; PP 900#; ann. vel. 193. Gel-Chem - Wt. 9.8#; Vis. 47; WL 7.0 cc. Cum. mud costs: \$10,095. 12" new snow. Arapahoe 14/6 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-19: Drilling sand and shale at 7469'. Made 136'. 6 1/8" hole. Gel-Chem - Wt. 9.7#.

1-20: Drilling sand and shale at 7679'. Made 210'. 6 1/8" hole. Dev.: 1/2 deg. at 7577'. Background prior - 5 to 20 units; 7060-7530' - 40 units to 850 units; 850 units - 7505-7530'. Gel-Chem - Wt. 9.8#.

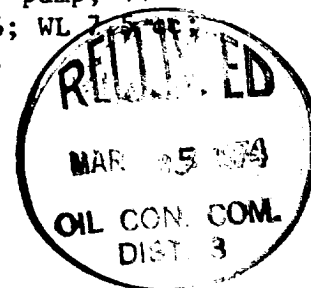
1-21: Drilling sand and shale at 7857'. Made 178'. 6 1/8" hole. 20 4 3/4" drill collars; WOB 18,000#; 90 RPM; 4 1/2" x 15" pump; 44 SPM; 148 GPM; PP 1250#; ann. vel. 245; BHA: bit, stabilizer, drill collar, sub, stabilizer, sub and 17 drill collars. Gel-Chem - Wt. 9.8#; Vis. 45; WL 7.0 cc; FC 2/32; pH 9.8; gel strength ini./10 min. 3 / 6; 11% solids; 1/4 of 1% sand; salinity 900 ppm; PV 13; Yp 7. Cum. mud costs: \$12,375. Arapahoe 14/9 1/2/0. Snowing - 3" new snow.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-22-74  
Drilling sand and shale at 7973'. Made 116'. 6 1/8" bit. Sanaster top 7530'. Background gas 90 to 100 units. Max. 1000 units at 7744' to 7746', min. 200 units 7710-7865'. 20 4 3/4" drill collars; WOB 18,000#; 90 RPM; 4 1/2" x 15" pump; 44 SPM; 140 GPM; PP 1250#; ann. vel. 245. Gel-Chem - Wt. 9.9#; Vis. 47; WL 7.2 cc; FC 2/32; pH 9.0; gel strength ini./10 min. 4 / 10; 14% solids; 1/4 of 1% sand; salinity 900 ppm; PV 23; Yp 18. Cum. mud costs: \$13,257. Arapahoe 14/10 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-23-74  
Drilling Dakota at 8125'. Made 152'. 6 1/8" bit. Sample top of Dakota 8120'. Decreased rotary speed and bit wt. to reduce torque while drilling fractured formation. 20 4 3/4" drill collars; WOB 12,000#; 45 RPM; 4 1/2" x 15" pump; 44 SPM; 148 GPM; PP 1250#; ann. vel. 245. Gel-Chem - Wt. 9.8#; Vis. 46; WL 7.5 cc; FC 2/32; 1/4 of 1% sand. Cum. mud costs: \$13,967. Arapahoe 14/11 1/2/0.



Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-12: Drilling sand and shale at 6821'. Made 313'. 8 3/4" hole. Dev.: 1 deg. at 6770'. Low solids mud - Wt. 9.0#.

1-13: Tripping to cond. hole. Depth 6986' - sand and shale. Made 165'. 8 3/4" hole. Dev.: 0 deg. at 6986'. Reached TD 6986' at 4:45 p.m. 1-12-74. Circ. 2 hrs. Pulled out of hole. Ran in hole with Schlumberger IES. Stopped at 972'. Spudded thru. Hit bridge at 2076'. Ran in hole with bit to 3032'. Circ. 1/2 hr. Pulled out of hole. Ran in with Schlumberger IES. Hit solid bridge at 3100'. Logged 3100' to 446'. Ran in with bit to TD. Bit #10 - Smith F-3 - 4936' to 6986'. Low solids mud - Wt. 9.4#.

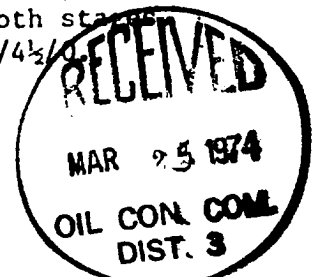
1-14: Logging. Depth 7046' - sand and shale. Made 60'. 8 3/4" hole. Completed trip to bottom. Broke thru bridge at 3100'. Circ. 2 hrs. Pulled out of hole. Ran Schlumberger IES from TD to 447'. Rigged down. Ran in hole with bit #11. Circ. while waiting on orders 6 hrs. Began drilling at 8:30 p.m. Reached casing depth of 7046' at 10:30 p.m. 1-13-74. Circ. 2 hrs. Strapped out. Rigged up Schlumberger. Logging. 18 6 1/4" drill collars; WOB 50,000#; 60 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1100#; ann. vel. 119; jet vel. 240. Low solids mud - Wt. 9.4#; Vis. 54; WL 9.4 cc; FC 2/32; pH 8.0; gel strength ini./10 min. 6 / 26; 5% solids; 1/2 of 1% sand; salinity 900 ppm; PV 16; Yp 21. Cum. mud costs: \$8642. Arapahoe 14/2 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Running casing. Depth 7055'. 8 3/4" hole. Ran IES Log from 7057' to 6750', BHC-Sonic-Gamma Caliper from 7054' to 444', FDC-CFL-Gamma Caliper from 6350' to 5650' and 4180' to 3380'. Misrun on FDC-Gamma. Pulled out of hole. Checked out tools. Found okay. Reran same. Gamma would not work. Rigged down loggers. Strapped in hole. Corrected to 7055'. Pulled out of hole. Began running 7" casing. Hit bridge and washed thru at 1935'. Log tops: Fruitland 3420'; Pictured Cliffs 3682'; Mesaverde 5780'; Mancos 6144'. Temp. -5° F. Wind blowing. Arapahoe 14/3 1/2/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Picking up drill pipe and drill collars. Depth 7055'. Finished washing thru bridge at 1945'. Hit bridges at 2156' and 2520'. Washed thru same. Ran 156 jts. (6464') 7", 23#, K-55, ST&C casing followed by 14 jts. 7", 26#, K-55, ST&C casing (606') equipped with Baker guide shoe, set at 7055'. Diff. float collar at 7014', cement basket at 3873', and stage collar at 3831'. "Ruff-Cote" 6108-5730' and 3746-3661'. Centralizers spaced 10' above shoe, 15 every other jt., 1 centralizer 10' above stage collar, and 5 centralizers on every other jt. above stage collar. Circ. 1 1/2 hrs. with pipe on bottom. Halliburton cemented with 10 BW, 500 gals. "Mud Flush", 350 sax 50-50 "Poz" with 6 1/4# "Gilsonite/sack, and 1/2% "CFR-2." Pumped plug down with mud at 6 B/M. Bumped with 2500 psi at 3:30 p.m. 1-15-74. Opened stage collar. Circ. 1 1/2 hrs. Pumped 10 BW, 100 sax 50-50 "Pozmix" with additives as in stage 1. Pumped plug down with mud at 7 B/M. Bumped plug with 2500 psi at 4:45 p.m. 1-15-74. Good circulation throughout both stages. Released pressure. Set slips with full casing weight. Arapahoe 14/4 1/2/0.



1-7-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-5: Washing to bottom. Depth 4333' - sand and shale. Made 311'. 8 3/4" hole. Bit #8 - HTC J-33 - 3853' to 4333'. Dev.: 1 deg. at 4333'. Low solids mud - Wt. 8.9#.

1-6: Drilling sand and shale at 4881'. Made 548'. 8 3/4" hole. Low solids mud - Wt. 8.8#.

1-7: Drilling sand and shale at 5160'. Made 279'. 8 3/4" hole. Bit #9 - Smith SDGH - 4333' to 4936'. Sample tops: Pictured Cliffs 3755'; Lewis Shale 3875'. Background gas - 160 units, increased to 240 units at 4400'. 18 6 1/4" drill collars; WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 50 SPM; 275 GPM; PP 900#; ann. vel. 119; jet vel. 260. Dev.: 1/4 deg. at 4936'. Low solids mud - Wt. 8.9#; Vis. 30; WL 7.0 cc; FC 2/32; pH 7.0; 3% solids; 1/4 of 1% sand; salinity 900 ppm. Cum. mud costs: \$4856. Arapahoe 8 1/2/1/0.

1-8-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Drilling sand and shale at 5545'. Made 385'. 8 3/4" hole. Bit #10 - Smith F-3 4936' to 5545'. 18 6 1/4" drill collars; WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1000#; ann. vel. 119; jet vel. 260. Low solids mud - Wt. 8.7#; Vis. 30; WL 8.6 cc; FC 2/32. Cum. mud costs: \$5416. Arapahoe 9 1/2/1/0. 6" new snow.

1-9-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

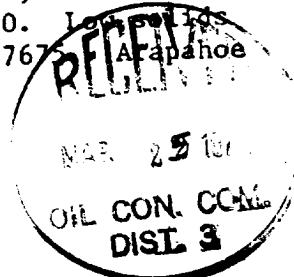
Drilling sand and shale at 5890'. Made 345'. 8 3/4" hole. 18 6 1/8" drill collars; WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1000#; ann. vel. 119; jet vel. 260. Dev.: 1/2 deg. at 5587'. Low solids mud - Wt. 8.8#; Vis. 30; WL 10.0 cc; FC 1/32; pH 8.0; 3% solids; 1/4 of 1% sand; salinity 900 ppm. Cum. mud costs: \$5951. Arapahoe 10 1/2/1/0. 2" new snow and snowing.

1-10-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Drilling sand and shale at 6239'. Made 349'. 8 3/4" hole. Had difficulty breaking circ. after making connections from 5900' to 6000'. Increased viscosity. Hole healed and okay. 18 6 1/4" drill collars; WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1100#; ann. vel. 119; jet vel. 260. Low solids mud - Wt. 9.0#; Vis. 34; WL 10.4 cc; FC 2/32. Cum. mud costs: \$6731. Arapahoe 11 1/2/1/0.

1-11-74  
Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

Drilling sand and shale at 6508'. Made 269'. 8 3/4" hole. Background units - 80. From 5140' to 5672' jumped from 270 to 500 units. Mesaverde 5778' - 60 gas units; 5778-6203' - 200 to 2000 units (6033-6037' was 2000 units). Bit #10 Smith F-3 - 4936' to 6508'. 18 6 1/8" drill collars; WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 1100#; ann. vel. 119; jet vel. 260. Low solids mud - Wt. 8.9#; Vis. 38; WL 10.0 cc; FC 2/32. Cum. mud costs: \$7671. Arapahoe 12 1/2/1/0.



Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210'

12-28-73  
Location: 1100' FSL, 1185' FWL, Sec. 24, T29N, R4W, Rio Arriba Co., New Mexico.  
AFE AFE 12-61-2395. API WELL NO. 30-039-20648. Contractor: Arapahoe. Mud  
Supplier: Baroid. Elevations: GL 6999', KB 7012', REM 13'.  
7020 7033

12-29: Drilling sand and shale at 435'. 15" hole. Spudded at 7:30 p.m. 12-28-73.  
Dev.: ¼ deg. at 225'. Gel-water - Wt. 8.8#.

12-30: Nippling up. Depth 450' - sand and shale. Made 15'. 15" hole. Ran  
13 jts. (total 413') 10 3/4", 40.5#, K-55 casing with guide shoe, baffle plate,  
and 5 centralizers. Cemented at 446' with 356 sax of Class "G" cement with 2%  
CaCl<sub>2</sub>. Pumped plug with water. Bumping plug with 600# at 7:45 p.m. 12-29-73.  
Gel-water.

12-31: Drilling sand and shale at 1813'. Made 1363'. 8 3/4" hole. Dev.:  
3/4 deg. at 1538'. Gel-Chem - Wt. 8.5#. Bit #1 - Sec. S-3 - 0' to 450'.  
Bit #2 - Smith DR - 450' to 1538'. 18 6 1/4" drill collars; WOB 50,000#; 60 RPM;  
5 1/2" x 15" pump; 60 SPM; 295 GPM; PP 1150#; ann. vel. 148; jet vel. 365.  
Vis. 29; WL 8.1 cc; FC 1/32; pH 11.5; 3% solids; ¼ of 1% sand; salinity 900.  
Cum. mud costs: \$669. Arapahoe 1 1/2/1/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210'

1-1: Drilling sand and shale at 2585'. Made 772'. 8 3/4" hole. Dev.: 3/4  
deg. at 1907', 1 deg. at 2467'. Gel-Chem - Wt. 8.6#. Bit #3 - Sec. S4 - 1538'  
to 2032'; Bit #4 - STC DTT - 2032' to 2530'.

1-2: Drilling sand and shale at 3105'. Made 520'. 8 3/4" hole. Bit #5 - Smith  
DGTH - 2530-2954'. Dev.: 1 deg. at 2964'. Low solids mud - Wt. 8.7#; Vis. 30;  
WL 8.0 cc. 18 6 1/4" drill collars; WOB 50,000#; 65 RPM; 5 1/2" x 15" pump; 56 SPM;  
275 GPM; PP 1155#; ann. vel. 119; jet vel. 315. Plowing roads - 16" snow - still  
snowing. Temp. 0° F. Arapahoe 3 1/2/1/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-3-74  
Drilling sand and shale at 3560'. Made 455'. 8 3/4" hole. Bit #6 - Smith  
SDGH - 2954' to 3560'. 18 6 1/4" drill collars; WOB 50,000#; 65 RPM; 5 1/2" x 15"  
pump. Dev.: 1 deg. at 3406'. Low solids mud - Wt. 8.6#; Vis. 29; WL 11.4 cc.  
Cum. mud costs: \$2954. Temp. -12° F. 20" snow. Roads almost impassible.  
Arapahoe 4 1/2/1/0.

Conoco 29-4 #4 - Conoco 1.0000000 - Mesaverde - 6210' - Drlg. Foreman: Feaster

1-4-74  
Drilling sand and shale at 4022'. Made 462'. 8 3/4" hole. Bit #7 - Smith DG -  
3422' to 3853'. Sample top of Fruitland 3659'. Background gas - 40 units;  
gas units 680, dropped back to 40. Dev.: 1 1/4 deg. at 3966'. 18 6 1/4" drill collars;  
WOB 35,000#; 50 RPM; 5 1/2" x 15" pump; 56 SPM; 275 GPM; PP 900#; ann. vel. 119;  
jet vel. 260; BHA: same. Low solids mud - Wt. 8.7#; Vis. 30; WL 11.4 cc.  
1/32; pH 7.0; 3% solids; ¼ of 1% sand; salinity 900 ppm. Cum. mud costs: \$3512  
Arapahoe 5 1/2/1/0.

