

GWDC #2 QUAIL FEDERAL  
CHAVES CO., NM

PAGE 1  
AFE 112

LOCATION: 1980' FEL, 660' FNL, Section 23, T6S, R25E, Chaves County, New Mexico  
DEPTH: 4100' Abo - Wildcat  
CONTRACTOR: Tex Mex  
DEAL: 64.476% WI and 56.42% NRI

- 1-23-81 Staked location, location on gradual slope, could not better location in any direction
- 3-18-81 Location, road, cellar, cattle guard bid by Armstrong & Armstrong
- 4-08-81 Building road & pad
- 6-10-81 Preparing head at machine shop. Preparing to dig pits & rat hole & mouse hole
- 6-11-81 Digging pits
- 6-12-81 Finished digging reserve & working pits
- 6-14-81 Moving in rig Wednesday
- 6-18-81 Trucks set up today f/rig move
- 6-20-81 Day 1. 400'. Drilling. Red Bed & Shale. MW 9.3, Vis 34, WL NC, Slds 7%, Bit 1 RR 17½" HTC OSC16, in @ 0'. WOB All #'s @ 80-100+ rpm, PP 550 psi, Drlg 14½ hrs, RR 3 hrs, Spud 17" hole @ 12:30 PM 6-19-81, have some fluid loss est 300 bbls since spud. John Wade w/USGS reported spud to, 40 sx gel, 4 sx cotton seed hulls, 3 sx paper. Progress 400'
- 6-21-81 Day 2. 488'. Running Csg. Red Beds. MW 9.4, Vis 36, WL NC. ST 488' @ 1'. Bit 1 17½" HTC OSC16, in @ 0' out @ 488'. WOB All #'s @ 80 rpm, PP 550 psi @ 85 spm. Drlg 4 hrs, ST ¼ hr, Trip 6 hrs, RS ½ hr, WO welder 1½ hrs, WO 2nd csg crew 5 hrs, RU csg crew and & pull 6 jts csg 3½ hrs, prep csg to run 3½ hrs, TD 10:30 AM 6-20-81, prep csg to run, ran 6 jts 13 3/8" csg 240', could not get any deeper, pulled csg, ran bit, cleaned out hole to bottom, circ & condit hole, WO 2nd csg crew. POH w/bit & prep to run csg. Received 26 jts 13 3/8" 48# 40 ST&C Lone Star Csg. Mill talley 1075.80'. Progress 88'. Cost \$16,054.69
- 6-22-81 Day 3. 738'. Drilling. Red Beds. MW 9.4, Vis 31, WL NC. Bit 2 12½" HTC OWV, in @ 488'. WOB 45-50,000# @ 70-80 rpm, PP 1000 psi @ 140 spm Drlg 8 hrs, Trip 2 hrs, RS& blocks ½ hr, Test pipe & plug ½ hr, circ ½ hr, run csg 1½ hrs, cmtg 1½ hr, drl plug & 65' cmt 2 hrs, WOC & NU 8 hrs, Ran 11 jts 13 3/8" 48# H40 ST&C Lone Star 469.63' set @ 483.13' Still had tight spots for 2 jts from 250'. Cmtd w/480 sx Class C + ½# flocele + 2% CaCl2 @ 14.8#/gal. PD @ 9:10 AM 6-21-81. Circ 100 sx good cmt, USGS Artesia notified, Jones did not witness. WOC. 8 hrs & cut off, NU, tested pipe & plug 800 psi 30" held ok, ran bit & drld cmt @ 417'-65' cmt in pipe. Drld a head, lost 100 bbls mud @ 550'. Mixed paper hulls & stopped loss, did not lose complete returns. 20 sx gel, 3 sx paper, 1 sx hulls, Progress 250'. Cost \$42,929.73

- 6-23-81 Day 4. 1005'. Drilling. 90% Dolo, 10% Shale. MW 9.6, Vis 32, WL 3/32, pH 10.5, Slds 7½%, ST 911' @ 3/4". Bit 2 12¼" HTC OWV, in @ 488'. WOB 50,000# @ 70 rpm, PP 700 psi @ 130 spm. Drlg 23 hrs, ST ¼ hr, RS ¼ hr, Fighting loss air circ ½ hr, Loss circ @ 757' @ 8:20 AM, lost 75-100 bbls mud, pumped hulls & paper & regained partial returns @ 8:45, at 9AM loss returns again, pumped hulls & paper & regained full returns @ 9:15, still have some seepage but is circ, 11 sx gel, 11 sx hulls, 19 sx paper, 25 sx soda ash. Comments: 1020' avg 8-16"/ft, show gas & oil, gas @ 955', peaked 30 units @ 958', drlg rate before 12"/ft, during 3-4"/ft, after 8-10"ft, Dolomite formation had silty & sand & vuggy porosity. BGG approx 2-10 units. Oil show approx 980-1000', fluorescence light green to light blue, weak, dry cut milky same color w/few streamers, oil stain in vuggs, Gas Chrom. strong show C-3, C-4, C-5. Progress 267'. Cost \$52,103.06
- 6-24-81 Day 5. 1063'. WO fishing tools. Anhy & dolo. MW 9.5, Vis 32, ST 1063' @ 1". Bit 2 12¼" HTC OWV, in @ 488' out @ 1063', Bit 3 12¼" Security, S44, in @ 1063'. WOB 50,000# @ 70-80 rpm, PP 700 psi @ 130 spm. Drlg 4¼ hrs, ST ¼ hr, Trip 4¼ hr, Hook up fill line ½ hr, RS ¼ hr, jet & clean shale pit 1 3/4 hr, fishing & WO tools 12 3/4 hr, Bit 2 cones loose & teeth worn out, trip @ 1063' f/bit. SLM made 20., board was short, started back in hole w/new bit. Ran 3 8" drill collars & 1 6" drill collar, the 4th collar was set on 8" slips, 9 drill collar safety clamp was not used. The 4 collars and the slips fell in hole, WO fishing tools & fisherman. Made 1 run with 2 prong grab. Damaged grab, POH & WO heavier grab. Diesel 53, 3 sx paper, 1 sx hulls, seepage is 3-4 bbls per hr. Progress 58' Cost \$55,302.56
- 6-25-81 Day 6. 1063'. Fishing. MW 9.4, Vis 32, WL NC, Bit 3 12¼" Security S44, in @ 1063'. Fishing & WO tools 24 hrs. Ran 11" impression block, found slips upside down @ 545-560'. Ran heavy wire rope center spear working, jarring & attempting to fish slips or drive down hole. POH & ran another impression block, found slips @ same spot. POH ran 12¼ bit, tagged fish @ same spot, either went by fish (slips) or drove it down hole to top of collar. POH w/bit & ran impression block & went to top of drill collars, POH & had impression of nubbin on top of collars. At report time preparing to run overshot jars & bumper sub to attempt to fish drill collars. Cost \$57,141.38
- 6-26-81 Day 7. 1063'. Jarring on fish. Dolo & Anhy. MW 8.8, Vis 31. Bit 3 12¼" Security S44, in @ 1063'. PP 500 psi @ 110 spm, Jarring on fish 11 hrs, trip 13 hrs. Ran in hole w/Bowen overshot w/16" grapple, jars & bumper, got over fish @ 884', pulled off @ 100,000#, POH & ran 5 7/16" grapple, could not catch fish. POH, chgd grapple to 6 1/8" & added extension to overshot, ran in hole, did not catch fish. POH chg grapple to 6¼" & reran overshot, caught fish, jarred on fish 11 hr, have circ, have moved fish 3' up the hole, jarring on fish @ report time. 23 sx c mud. Cost \$57,141.38

- 6-27-81 Day 8. 1063'. Washing over fish, Dolo & Anhy, MW 8.6, Vis 30, Bit 3 12 $\frac{1}{4}$ " Security S44, in @ 1063'. PP 200 psi @ 130 spm, PU wash pipe 2 hrs, Wash pipe TIH, TOH 8 hrs, RR 4 $\frac{1}{2}$  hrs, free point & back off 3 $\frac{1}{2}$  hrs, Jarring on fish 1 hr, circ & mix mud 2 $\frac{1}{2}$  hrs, wash over fish 3 hrs, Top of fish @ 881' wireline meas. Backed off DC nubbing @ 884'. Ran 70' of 11 3/4" wash pipe & shoe, made approx 6" 3 hrs. RR working on brakes, tightening bolts & replacing bolts. Added - - 27 sx sea mud. Progress 0'. Cost \$58,293.38
- 6-28-81 Day 9. 1063'. Circ. Dolo & Anhy. MW 8.6, Vis 30. Bit 3 Same. PP 200 psi @ 130 spm, Trip 7 $\frac{1}{2}$  hrs, Circ & WO wireline truck 8 hrs, fishing 2 $\frac{1}{2}$  hrs, wash over fish 4 hrs, Make up tools 2 hrs. Washed 68' over DC w/11 3/4" wash pipe. TOH. PU screw in sub, TIH, unable to screw in. TOH. PU Bowen overshot w/5 7/8" grapple. TIH. Did not catch fish-tore grapple up. TOH, changed grapple to 5 3/4". TIH, caught fish, jarred on fish for awhile, afraid grapple would tear up, commenced circ & waiting on wireline unit. 64" diesel in tk. Cost \$58,551.38
- 6-29-81 Day 10. 1063'. Washing over collars, Dolo & Anhy. MW 8.6, Vis 30. Bit 3 12 $\frac{1}{4}$ " Security S44, in @ 1063'. PP 250 psi @ 130 spm, Lay down 2 collars 3/4 hr, trip 9 hrs, run free point & back off 2 collar 2 hrs, washing over collars 2 3/4 hrs, wash over overshot grapple 3 hrs, circ 4 $\frac{1}{2}$  hrs, fishing 2 hrs. Resumed jarring on fish, pulled off, POH & removed overshot & ran screw on sub, TIH, could not screw into fish, POH & removed screw in sub, ran overshot w/5 3/4" grapple TIH caught fish, ran free point & backed off 2 drill collars, POH & laid down 1 6" & 1 8" drill collar. Ran 2 jts 11 3/4" wash pipe, TIH, started washing over collar, made 12" in 2 3/4 hr. Cost \$58,551.38
- 6-30-81 Day 11. 1603'. WO wireline truck. Dolo & Anhy. MW 8.6, Vis 30. Bit 3 12 $\frac{1}{4}$ " Security S44, In @ 1063'. PP 200-250 psi @ 130 spm. Attempt to circ 1/2 hr, screw into collars 1/2 hr, washing over drill collar 10 $\frac{1}{2}$  hrs break down wash pipe & PU jars, b. sub, screw in sub 2 $\frac{1}{2}$  hrs. Washed over 24' of 8" drill collars in 6 hrs, TOH & replaced wash over shoe (notched shoe dressed w/cutrite) TIH & made 3' in 4 $\frac{1}{2}$  hrs, TOH & shoe was stripped off, left in hole, ran jars, bumper sub & screw on sub & TIH & screwed into fish. Attempted to circ & could not, Tripped jars 1 time & they would not trip after that. @ report time WO wire line truck to attempt to back off @ 968' which would be 1 more drill collar. Cost \$58,680.38
- 7-01-81 Day 12. 1063'. Jarring on fish. Dolo & Anhy. MW 8.6, Vis 30. Bit 3 12 $\frac{1}{4}$ " Security S44, in @ 1063'. PP 500 psi @ 120 spm. Spot oil 1/2 hr, WO oil 1 hr, circ & jar on fish 2 hrs, soaking & jarring fish 20 $\frac{1}{2}$  hrs Washed pipe jars started working established circ, jarred fish 3' up hole, WO oil & spotted 20 bbls oil @ 10AM, soaking and jar 15" on fish each hr, have not made any progress since the 3' prior to spotting oil. Cost \$60,317.37

GWDC #2 QUAIL FEDERAL  
CHAVES CO., NM

PAGE 4  
AFE 112

- 7-02-81 Day 13. 1063'. WOC. Dolo & Anhy. MW 9.6, Vis 39, pH 9.5, Slds 9%, Bit 3 12 $\frac{1}{4}$ " Security S44, in @ 1063' left in hole, PP 500 psi @ 130 spm. Lay down tools 1 hr, Trip 4 $\frac{1}{4}$  hrs, SLM  $\frac{1}{4}$  hr, Spot pill  $\frac{1}{2}$  hr, RU wireline unit 1 hr, Cementing 2 $\frac{1}{4}$  hrs, Jar & soak fish & WO wireline unit 9 $\frac{1}{4}$  hrs, WOC 5 $\frac{1}{2}$  hrs. Soaked & jarred on fish & WO wireline truck 9 $\frac{1}{4}$  hrs, RU wireline truck, ran sting shot @ 998', blew change over sub in two-POH w/drill collars, left in hole 1 12 $\frac{1}{4}$ " bit, 1 8" bottom hole sub (1.03') 1 8" change over sub 1.76', 1 8" change over sub 1.28'. Ran drill pipe open ended 1 set 8" drill collar slips, 1 wash over shoe to 969.13 & washed to 996'. Cmt'd w/500 gals mud flush & 220 sx Class H cement w/10# sand/sx & 5/10% CFR-2 @ 16.8 to 17.0#/gal (1.14 yield) displaced w/4.29 bbls wtr. Finished cementing 11:48 PM 7-1-81, plug should be from 998-684', POH & WOC Used 7 sx gel, 2 sx soda ash. Cost \$60,317.37
- 7-03-81 Day 14. 684'. PBDT. WO Mud pump. Dolo & Anhy. MW 9.6, Vis 39. WOC 18 hrs, WO mud pump 6 hrs, WOC 18 hrs & while repairing mud pump decided to replace pump, WO replacement mud pump. Cost \$60,945.57
- 7-04-81 Day 15. 798'. TOH. Dolo & Anhy. MW 8.6, Vis 32, Oil 7%, Slds 2 $\frac{1}{2}$ %. ST 767' @ 3/4 $^{\circ}$ , 798' @ 1 $\frac{1}{4}$  $^{\circ}$ . Bit 4 12 $\frac{1}{4}$ " HTC OWV, in @ 741' out @ 748', Bit 5 12 $\frac{1}{4}$ " HTC OWV, in @ 748' out @ 798'. WOB 8-16,000# @ 325rpm, PP 1400 psi @ 335 gpm, ST 1 hr, Trip 8 hrs, Install drlg line 2 hrs, dress cement 2 hrs, make up dyna drill & drill 9 hrs, WO mud pump 2 hrs. WO mud pump 2 hrs, ran 12 $\frac{1}{4}$ " bit & tagged cement @ 741 & drld 7' cement to 748'. TOH. ran dyna drill & 6 $\frac{1}{2}$ " bit & drilled to 798'. Trip out to pick up 12 $\frac{1}{4}$ " bit, used 2'-1 $\frac{1}{2}$  $^{\circ}$  bent sub on dyna drill. Cost \$62,387.74
- 7-05-81 Day 16. 852'. Drlg. Dolo & Anhy. MW 8.8, Vis 39, Oil 3%, Slds 3.6%. ST 814' @ 2 $^{\circ}$ . Bit 6 12 $\frac{1}{4}$ " Security S44, in @ 798'. WOB 40-45,000# @ 50 rpm, PP 150 psi @ 100+ spm. Drlg 7 $\frac{1}{2}$  hrs, ST 1 hr, Trip 8 hrs, pump & brakes 3 hrs. WO pump parts 4 $\frac{1}{2}$  hrs. 3 sx soda ash, TOH w/bit #5, laid down dyna drill, ran conventional BHA + 12 $\frac{1}{4}$ " S44 bit Cost \$62,516.74 Progress 54'
- 7-06-81 Day 17. 971'. Drlg. Anhy & Dolo. MW 8.8, Vis 32, Oil 1%, Slds 3.2%. ST 872' @ 2 $^{\circ}$ , 903' @ 2 $^{\circ}$ . Bit 6 12 $\frac{1}{4}$ " Security S44, in @ 798'. WOB 30-35,000# @ 40-45 rpm, PP 200 psi @ 130+ spm. Drlg 22 $\frac{1}{2}$  hrs, ST 1 $\frac{1}{4}$  hr, RS  $\frac{1}{4}$  hr, 16 sx gel, 2 sx soda ash, Cost \$62,516.74 Progress 119'
- 7-07-81 Day 18. 1129'. Drilling. Anhy & Dolo. MW 9.0, Vis 37, Slds 4 $\frac{1}{2}$ %. ST 998' @ 2 $\frac{1}{2}$  $^{\circ}$ , 1101' @ 1 $\frac{1}{2}$  $^{\circ}$ . Bit 6 12 $\frac{1}{4}$ " Security S44, in @ 798 out @ 1101'. Bit 7 12 $\frac{1}{4}$ " Security S44, in @ 1101'. WOB 35,000# @ 74 rpm, PP 250 psi @ 130 spm. Drlg 14 $\frac{1}{4}$  hrs, ST  $\frac{1}{4}$  hr, Trip 6 $\frac{1}{2}$  hrs, repair brakes & mud pump 2 hrs, jet shale pit  $\frac{1}{2}$  hr, washing to btm  $\frac{1}{2}$  hr. Trip for bit 1101', Bit #6 1 loose cone & would lock down. Teeth looked good, SLM on trip, no correction, reached 1063' @ 3:15 PM Day rate back on GWD @ that time. 3 sx soda ash. Progress 158' Cost \$66,832.82

- 7-08-81 Day 19. 1369'. Drlg. Lime & Dolo. MW 9.4, Vis 35, Slds 7½%, Bit 7 12¼" Security S44, in @ 1101'. WOB 40,000-45,000# @ 74 rpm, PP 700-1000 psi @ 130 spm. Drlg 23 hrs, RR ¼ hr, RS ¼ hr, Loss circulation ½ hr. Lost full returns @ 1265', mixed LCM, had partial returns in 15" & full returns 30". Lost 60 bbls mud. 6 sx hulls, 6 sx paper, 2 quick seal, 1 soda ash. Progress 240'. Cost \$72,832.82
- 7-09-81 Day 20. 1495'. Drilling. Glorietta Sand. MW 9.8, Vis 37, Slds 10%, - ST 1482' @ 2°. Bit 7 12¼" Security S44, in @ 1101' out @ 1482', Bit 8 7 7/8" HTC J44C, in @ 1482'. WOB 30,000# @ 53 rpm, PP 900 psi @ 130+ spm, Drlg 13 ¾ hrs, ST ¼ hr, Trip 7 hrs, RS ¼ hr, WO storm 1½ hrs, Circ 1¼ hrs, SLM @ 1482', geolograph shows 1581', made 99' correction. Bit 7 was worn out, cones loose, reduced hole to 7 7/8" @ 1482', laid down 2 8" collars. Progress 126'. Cost \$79219.82
- 7-10-81 Day 21. 1865'. Drilling. 50% Sd, 40% anhy, 10% shale, MW 9.0, Vis 31, Bit 8 7 7/8" HTC, J44C, in @ 1482'. WOB 35,000# @ 52 rpm, PP 1000 psi @ 130+ spm. Drlg 19½ hrs, Pump repair ¾ hrs, Circ & work on indicator 3 ¾ hr. Burned up 2 light plants past 24 hrs. Progress 370'. Cost \$85,219.82
- 7-11-81 Day 22. 2401'. Drilling. Anhy, Dolo & Lime, & Shale, MW 10.5, Vis 34, WL NC, WC 3/32, pH 7.0, CL 120,000, Slds 8.5%. ST 2060' @ ½°, Bit 8 7 7/8" HTC J44C, in @ 1482'. WOB 35-40,000# @ 52 rpm, PP 800 psi @ 130 spm. Drlg 23½ hrs, ST ½ hr. Added 2 sx paper, Drlg break @ 2318-36', no gas or shows. 5 units background gas. Set 3rd light plant, now have electricity @ rig & mudlogger rig water pump is out. Progress 536'. Cost \$93,309.82
- 7-12-81 Day 23. 2747'. Trip. 60% Shale, 10% Dolo, 30% Anhy. MW 10.5, Vis 35, WL NC, FC 3/32, pH 7.0, Cl 150,000, Slds 7%. ST 2558' @ ¼°. Bit 8 7 7/8" HTC J44C, in @ 1482'. WOB 35-40,000# @ 52 rpm, PP 800 psi @ 130 spm, Drlg 19½ hrs, ST 1 hr, Pump repair ¼ hr, Hook up fill ½ hr, circ ½ hr, jet pits 2¼ hrs. Added 52 sx sea mud, 9 brine gel, 20 sx KCL, 4 sx paper, hooked up water (gravity) to mudloggers trailer. Progress 346'. Cost \$106,106.09
- 7-13-81 Day 24. 2777'. Drlg. 40% Anhy, 30% Sh, 30% Dolo. MW 10.8, Vis 35, FC 3/32, pH 7, Cl 155,000, Slds 8.5%. ST 2747' @ 2°. Bit 8 7 7/8" HTC J44C, in @ 1482' out @ 2747'. Bit 9 7 7/8" Security M84F, in @ 2747'. WOB 30,000# @ 50 rpm, PP 900 psi @ 130 spm. Drlg 3½ hrs, Trip, laid down 24 jts DP & had to stand 8" collars 11½ hrs, pump repair 1½ hrs, hooking up fill line 3/hr, NU 7 hrs. Bit 8 was pulled, was green. Found hole in good shape after getting back to btm, no fill or loss. Strip 2' long to board, no correction made. Used 70 bbls brine last 24 hrs, had 37½ " diesel. Progress 30'. Cost \$112,548.59
- 7-14-81 Day 25. 3064'. Drilling. Anhydrite, Dolo & Shale. MW 10.9, Vis 36, WL NC, FC 3/32, pH 7.0, Cl 155,000, Slds 8.5%, Bit 9 7 7/8" Security M84F, in @ 2747'. WOB 40,000# @ 50 rpm, PP 1000 psi @ 130+ spm. Drlg 23 hrs, RS ½ hr, Pump repair ½ hr, Set water pump is not in operation, Progress 289'. Cost \$118,677.58

- 7-15-81 Day 26. 3278'. Drilling. Anhy, Shale & Dolo. MW 10.9, Vis 37, WL 22, FC 1/32, pH 7.0, CL 170,000, Slds 8.5%, ST 3249' @ 1 3/4". Bit 9 7 7/8" Security M84F, in @ 2747'. WOB 40,000# @ 50 rpm, PP 1000 psi @ 130 spm. Drlg 22 hrs, Pump repair 1 1/2 hr, jet pits 3/4 hr, Added 2 sx quickseal, 9 sx paper, 3 sx caustic, 29 sx starch, 1 sx hulls, Progress 214'. Cost \$128,412.76
- 7-16-81 Day 27. 3490'. Drilling. Dolo, Anhy, Shale, MW 10.7, Vis 37, WL 18, FC 1/32, pH 8.5, CL 160,000, Slds 8%. Bit 9 7 7/8" Security M84F, in @ 2747'. WOB 40,000# @ 50 rpm. PP 1000 psi @ 130 spm. Drlg 22 1/2 hrs, pump repair 1 1/2 hrs, 9 sx starch, 2 sx caustic, 7-15 set a different light plan & it burned up after running 1 1/2 days. Now running on smaller plant. Progress 212'. Cost \$135,339.26
- 7-17-81 Day 17. 3623'. Drilling. 90% Dolo & 10% Anhy. MW 10.7, Vis 35, WL 9.0, FC 1/32, pH 8.5, CL 165,000, Slds 7.5%, Bit 9 7 7/8" Security M84F, in @ 2747'. WOB 40,00# @ 50 rpm, PP 1000 psi @ 130 spm. Drlg 23 1/2 hrs, RS 1/2 hr, Added 25 sx starch, 3 sx caustic, drlg 13-14"/ft no fluid loss past 24 hrs, received & hooked up new rig light plant Progress 133'. Cost \$144,384.10
- 7-18-81 Day 29. 3787'. Drilling. 60% Shale, 40% Sand. MW 10.5, Vis 35, WL 12, FC 1/32, pH 9.0, Cl 140,000, Slds 7.5%, ST 3651' @ 3/4". Bit 9 7 7/8" Security M84F, in @ 2747' out @ 3651'. Bit 10 7 7/8" STC F4, in @ 3651'. WOB 40-45,000# @ 52 rpm, PP 1000 psi @ 130 spm. Drlg 17 hrs, ST 1/2 hr, Trip 6 1/2 hrs, Bit 9 brg good & cones good, 26 sx sea mud, 1 sx gel, 3 sx KCL, 2 sx caustic, Progress 164'. Cost \$154,653.90
- 7-19-81 Day 30. 3978'. Drilling. Shale w/tr dolo. MW 10.6, Vis 38, WL 6, FC 1/32, pH 9.0, Cl 155,000, Slds 8%, Bit 10 7 7/8" STC F4, In @ 3651'. WOB 40-45,000# @ 54-60 rpm, PP 1000 psi @ 130 spm. Drlg 23 3/4 hrs, RS 1/2 hr. Gas show @ 3854', peaked @ 3880'. had 110 units of gas & gradually decreased to 8-10 units @ 3920'. Added 12 sx starch, 2 sx caustic, 2 sx paper. No fluid loss last 24 hrs. Progress 191 Cost \$160,653.90
- 7-20-81 Day 31. 4165'. Drilling. Shale. MW 10.7, Vis 39, WL 9.0, FC 1/32, pH 9.0, Cl 140,000, Slds 9%. ST 4120' @ 3/4". Bit 10 7 7/8" STC F4 in @ 3651'. WOB 40-45,000# @ 54 rpm, PP 1000 psi @ 130 spm. Drlg 22 hrs, ST 1/2 hr, RS 1/2 hr, Wash to btm after Slope test 1/2 hr, Tight connection @ 4058', had to pull 20,000# over weight. Next conn OK, added 5 sx gel, 8 sx sea mud, 6 sx caustic, 6 sx KCL, 20 sx starch, 5-6 units of background gas, drilling 5-7"/ft. Progress 187'. Cost \$166,911.90
- 7-21-81 Day 32. 4332'. Drilling. 90% Shale & 10% Lime. MW 10.8, Vis 40, WL 6.0, FC 1/32, pH 9.0, KCL 1%, CL 145,000, Slds 9.5%. Bit 10 7 7/8" STC F4, in @ 3651'. WOB 35-40,000# @ 54 rpm, PP 1000 psi @ 130 spm. Drlg 23 1/2 hrs, RS 1/2 hr. Drlg 10-12"/ft, 5 units background gas. 14 sx starch, 14 sx KCL, 5 sx caustic, 1 sx paper, no fluid loss/24 hrs. . Progress 167'. Cost \$174,979.18

- 7-22-81 Day 33. 4435'. Drilling. 70% Sh, 20% Lm, 10% Sd. MW 10.9, Vis 38, WL 6.0, FC 1/32, pH 9.0, KCL 2.25%, Cl 145,000, Slds 9.8%. Bit 10 7 7/8" STC F4, in @ 3651'. WOB 40,000# @ 55 rpm, PP 1000 psi @ 130 spm. Drlg 14 1/2 hrs, Pump repair 9 1/2 hrs, RS 1/2 hr. Drlg 8-12"/ft 5-7 units background gas. Down 9 1/2 hrs, wo parts & pump repair Received 134 jts 4 1/2" 10.5#, K55 ST&C csg. Rg 3. Progress 103'. Cost \$184,537.02
- 7-23-81 Day 34. 4565'. Drilling. 40% Shale, 40% Sand, 20% Lime. MW 10.9, Vis 37, WL 6.0, FC 1/32, pH 9.0, KCL 2.25%, Cl 160,000, Slds 9.0%. Bit 10 7 7/8" STC F4, in @ 3651'. WOB 40,000# @ 55 rpm, PP 1000 psi @ 130 spm. Drlg 23 1/2 hrs, Pump repair 1/2 hr, RS 1/2 hr. 12 sx starch 6 sx KCL, Drlg 11-13"/ft. Progress 130'. Cost \$193,652.02
- 7-24-81 Day 35. 4671'. Trip for bit. 90% Shale & 10% lime. MW 10.8, Vis 38, WL 6.0, FC 1/32, pH 9.0, KCL 2.25%, Cl 160,000, Slds 7.7%. ST 4652' @ 2 1/2". Bit 10 7 7/8" STC F4, in @ 3651' out @ 4671'. WOB 40,000# @ 55 rpm, PP 1000 psi @ 130 spm. Drlg 14 3/4 hrs, ST 1 hr, Trip 5 1/2 hrs Circ & cond mud & clean reserve 3 hrs, 8 sx starch, 4 sx KCL, 4 sx paper, Progress 106', Cost \$199,652.02
- 7-25-81 Day 36. 4723'. Rig repair. 70% Lime, 30% Shale. MW 10.4, Vis 40, WL 7.0, FC 1/32, pH 9.0, KCL 2.1%, Cl 140,000, Slds 6.8%. Bit 11 7 7/8" STC F4, in @ 4671'. WOB 40-45,000# @ 55 rpm, PP 1000 psi @ 130 spm, Drlg 9 hrs, Trip 10 1/2 hrs, Rig repair, pump & slips 4 1/2 hrs, wash to btm 1/2 hrs, No tight spots or fill on tip, Bit #10 bearings loose, 3 buttons missing. Ruff coated 11 jts csg, 12 sx starch, 20 sx KCL, 6 sx paper, 1 sx hulls, no fluid loss 24 hrs, unplugged change pump suction, packing swivel, pulled 10 stds pipe, had to replace drill pipe slips, 54" diesel. Progress 52'. Cost \$207,124.76
- 7-26-81 Day 37. 4723'. Working on swivel. Lime & Shale. Bit 11 7 7/8" STC F4, in @ 4671'. RR 22 1/2 hrs, Pull 66 1/2 stds pipe 1 1/2 hrs, Pulled 66 1/2 stds drillpipe, back to surface csg, hauled swivel to Hobbs for repair. Returned & installed & swivel would not stay together. Welder working on swivel @ rig. Cost \$213,124.76
- 7-27-81 Day 38. 4798'. Drilling. 80% Shale, 10% Lime, 10% Granite wash, MW 10.4, Vis 37, WL 7.0, FC 1/32, pH 9.0, KCL 2.2%, CL 145,000, Slds 6.8%, Bit 11 7 7/8" STC F4, in @ 4671'. WOB 40-45,000# @ 54 rpm, PP 600 psi @ 130 spm. Drlg 13 3/4 hrs, Trip 2 hrs, Swivel repair 5 hrs, pump repair 3 1/2 hrs, RR 8 1/2 hrs, Worked on swivel 5 hrs, ran bit to btm & resumed drlg, drld 5 1/2 hrs & then worked on pump 3 1/2 hrs, 5 sx sea mud, 5 sx starch, 5 sx paper, 4 KCL, drlg 10-14"/ft, 5-6 units background gas, Progress 75'. Cost \$219,124.76
- 7-28-81 Day 39. 4953'. Drilling. 70% Shale, 30% Lime. MW 10.4, Vis 38, WL 12 FC 1/32, pH 8.5, KCL 1.75%, Cl 150,000, Slds 6.2%, Bit 11 7 7/8" STC F4, in @ 4671'. WOB 40-45,000# @ 54 rpm, PP 1000 psi @ 130 spm. Drlg 20 1/2 hrs, Pump & drum chain repair 3 1/2 hrs, 4-5 units background gas, 18 sx starch, 8 sx KCL, 3 sx paper, 1 sx caustic. Progress 155' Cost \$225,716.26

- 7-29-81 Day 40. 5120'. Drilling. 70% Lime, 20% Shale, 10% Granite Wash. MW 10.2, Vis 35, WL 13, FC 1/32, pH 8.5, KCL 1.9%, C12 130,000, Slds 6%. Bit 11 7 7/8" STC F4, in @ 4671'. WOB 40-45,000# @ 54 rpm, PP 2000 psi @ 130 spm. Drlg 23 3/4 hrs, RS 1/4 hr, 31 sx starch, 12 sx KCL, 10 sx sea mud, 1 sx brine gel, 2 sx paper, 1 sx caustic, 4-5 units background gas. Progress 167'. Cost \$234,672.04
- 7-30-81 Day 41. 5180'. Drilling. Shale, Lime & Sand. MW 10.2, Vis 39, WL 8.0, FC 1/32, pH 9.0, KCL 1.95%, C1 125,000, Slds 6.2%, ST 5120' misrun, Bit 11 7 7/8" STC F4, in @ 4671'. WOB 40-45,000# @ 54 rpm, PP 1000 psi @ 130 spm. Drlg 13 1/2 hrs, ST 1/4 hr, Trip 7 1/2 hrs, Pack swivel 2 1/2 hrs, RS 1/2 hr, Wash 30' to btm 1/4 hr, Made trip @ 5120' to unplug jets in bit. Found 1 pump bolt in jet & rocks, Bit #11 good condition reran bit. 4-5 units background gas. 28 sx starch, 14 sx KCL, 4 sx paper. Progress 60'. Cost \$240,801.04
- 7-31-81 Day 42. 5290'. Drlg. 20% chert, 40% Shale, 40% Granite Wash, MW 10.4, Vis 39, WL 7.0, FC 1/32, pH 8.5, KLC 2%, C1 125,000, Slds 6%, ST 5213' @ 3°. Bit 11 7 7/8" STC F4, in @ 4671'. WOB 35-40,000# @ 60 rpm, PP 1000 psi @ 130 spm. Drlg 22 1/2 hrs, ST 1/2 hr, Repair chain on drum 1 1/2 hrs, 4-6 units background gas, 18 starch 10 paper, 12 KCL. Progress 110'. Cost \$246,801.04
- 8-01-81 Day 43. 5346' TD. Logging. 40% Chert, 60% Granite, MW 10.4, Vis 47, WL 6.0, FC 1/32, pH 8.5, KCL 2.4%, C1 140,000, Slds 6.6%, ST 6346' @ 3°. Bit 11 7 7/8" STC F4, in @ 4671' out @ 5341'. WOB 45-40,000# @ 60 rpm, PP 1000 psi @ 130 spm, Drlg 11 1/2 hrs, ST 1/4 hr, Trip 7 hrs, RR 1/2 hr, Circ 3 hrs, logging 2 hrs, TD 7 7/8" hole @ 5:30 PM. 7-31-81, SLM & 5345.30', No corr. 38 sx sea mud, 14 sx b. gel, 44 sx starch, 2 sx hulls, 12 sx KCL. Progress 56'. Cost \$254,740.32
- 8-02-81 Day 44. 5346'. Lay down DP. MW 10.4, Vis 47, WL 6.0, FC 1/32, pH 8.5, KCL 2.4, CL 140,000, Slds 6.6%, Trip 4 hrs, Logging 9 hrs, LDDP 7 hrs Circ 4 hrs, 6129' Loggers got TD @ 5355', logs ran Dual Lat, Comp Density & Neutron. Cost \$260,869.32
- 8-03-81 Day 45. 5346'. WO Western Co. Lay down Drill pipe & collars 4 3/4 hrs, Run csg 6 hrs, WO Western cement. 1 1/2 hrs, 1st stage 2 hrs, Try open 2 stage tool 3/4 hr, WO temp svy 9 1/4 hrs, Ran 131 jts 4 1/2" 10.5# ST&C Rg 3 csg, total of 5374.12' set @ 5346' w/2 stage collar @ 2766', cmtd 1st stage w/8% sks 50-50 poz mix w/8# salt/sx + 3/10% of 1% CF9 mixed @ 13.6#/gal, plug down @ 6:35 PM 8-2-81, bumped plug w/500# over PP, float held ok, dropped 2 stage bomb, could not get 2 stage tool to open worn w/2 stage collar 1 3/4#, ran temp svy, fould goo cmt @ 2824'. Cost \$283,852.68
- 8-04-81 Day 46. 5346'. Running temp survey. RD temp svy, found 2 stage bomb still in head, dropped bomb, open 2 stage collar, cmt 2nd stage w/800 sx 50-50 poz mis w/8# salt/sx + 3/10 of 1% CF9 + 1/4# cello flake/sx + 10# gilsonite/sx, mixed @ 13.3#/gal, followed w/600 sx pacesetter lite cement + 18#/sx mixed @ 12.2#/gal, plug down @ 9:55 MA 8-3-81, Circ approx 158 sx of good cmet around. Released rig @ 2PM 8-3-81



- 8-26-81 RUPU, moved 54 jts 2 3/8" OD tbg & sills on location
- 8-27-81 Welded on 4 1/2" slip collar, installed tbg head. Tallied 60 jts 2 3/8" tbg & ran in hole & pulled out of hole & stood in derrick. Ran 3 7/8" bit, 4-3 1/8" DC on 2 3/8" OD, tbg & tallied in hole to 2762'. Received 82 jts of 2 3/8" tbg J55 (mill tally 2508.30') have reverse unit on location.
- 8-28-81 Drilled DV-tool, tested DV tool & csg 1500 psi for 30 mins, held OK. Ran all tbg 134 jts to 4101.67' & circ hole w/2% KCL fresh wtr, pulled tbg, DC & bit out of hole, laid down DC & released reverse unit & DC. Installed BOP, rigged up wireline service, ran tie in log, perfed w/3 1/8" csg gun, premium charge w/1SPF, penetration 18-20", diameter of holes .40", total 67 holes, select fire as follows: 3711-24 (13), 3728-32 (4), 3778-83 (5), 3802-10 (8), 3842-49 (7), 3856-66 (10), 3868-72 (4), 3879-95 (16). Came out of hole, RD loggers & SD.
- 8-29-81 Ran tbg opened ended to 3885', spotted 5 bbls acid, pulled 9 jts tbg to 3611', removed BOP, packed off wellhead, installed high pressure valves 2 on csg & 1 on tbg (3000 psi WP). Acidized w/3000 gals 7 1/2% HCL & inhibitors & 40,000 SCF nitrogen + 125 7/8" ball sealers. Formation broke @ 1600 psi, max press 1730 psi, min 800 psi, avg 1600 psi, max rate on acid 3.2 BPM, min 2.3 BPM, Avg 3 BPM ISIP 1080 psi, 5 mins SIP 1030 psi, 10 min 1020 psi & 15 mins 1000 psi, well never balled out, no indication of ball action during treatment. Total load 98 bbls, opened well up approx 1 hr after treatment on 1/4" choke, kept opening choke until choke was wide open. Flowed approx 1 hr, est flowback 30 bbls. RU and started swbg, swabbed 3 hrs, est swabbed 30 bbls, FL swab right down, in 2 hrs swabbing from SN, est 38 bbls under load + 60 annular volume. Had 3-4' flare between swab runs. SDFTN @ 6:40 PM SWI
- 8-30-81 SITP 800 psi, after 14 1/2 hrs, opened well up on 1/2" choke, flowed 45 mins, flowed 10 bbls & well stopped making fluid w/pressure decline. Ran swab to 3611', SN, found no FL, pulled swab no fluid, put well on 1/2" choke, pressure built up to 18 psi, left choke on 1/2" for 1 hr, pinched choke to 1/4", pressure built up to 80 psi in 1 1/4 hrs, flowed well additional 2 hrs on 1/4" chk, well indicated to be stabilized @ 80 psig FTP. Est. rate 134 MCFPD based on 93.2 psi, SDFTD. SIW
- 8-31-81 SD
- 9-01-81 Fraced w/252,000# 20-40 mesh sand, 1830400 SCF N2, + 60 7/8" RCN ball sealers + 38000 gals wtr, KCL 2% fresh, 1st stage 8000 gals 75% foam pad & 6000 gals 75% w/1#/gal sd, 6000 gals 75% foam w/1 1/2# + 6000 gals 75% foam w/2# sd & 8000 gals 75% foam w/2 1/2# sd + 10,000 gals 75% foam w/3# sd, block w/6000# 100 mesh salt & 15 7/8" ball sealers in pad & 2nd frac stage the same as #1 w/2 1/2# gal sd in perfs pressured increased to 4100 psi & gauges malfunctioned, thought pressure was 8000 psi, attempted to bleed through 1", was down 2 hrs, resumed frac w/stage 3. Stage 3 the same as #1. Blocking after stage 3 7000# 100 mesh salt + 15 7/8" ball sealers, stage 4 6000 gals 75% foam w/1 1/2# sd + 6000 gals 75% foam + 15 7/8" balls w/2.0# sd +
- Continued Next Page 10

- 9-01-81 Continued + 6000 gals 75% foam w/2½# sd + 15 7/8" balls & started 3# sand in 75% foam + 11 bbls avg, pressure increased to 4100 psi, attempted to surge balls off perfs. Bled pressure to 2400 psi, pressured to 4100 psi again. SD. Max press 4100 psi, min 1540 psi, avg 3200 psi, max rate 25 BPM, min 24.7 BPM, avg 24.9 BPM, load to recover 906 bbls. ISDP 3960 (balls on perfs) 5" 3910, 10" 3890, 15" 3820, 60" 2750 psi, opened to flow on ¼" positive choke. Plugged 3 times 1s hr w/ball sealers. 2 hrs 1300 psi FP, 3 hrs 900 psi 4 hrs 600 psi, choke was cut out to ½" in 4 hrs, 5 hrs 400 psi, 6 hrs 220 psi, 8 hrs 180 psi, 10 hrs 150 psi, 11 hrs 120 psi, 14 hrs 100 psi, closed well in @ 4AM MDST, 9-1-81 est recovery 600 bbls load w/306 BUL, sand had decreased, had foam & spray in surges, well was making gas
- 9-02-81 SITP 1260 psi, 11 3/4 hrs opened @ 3:45 PM on ½" positive choke @ 4:00 610 psi, 4:15 460 psi, 4:30 450 psi, 4:45 630 psi, 5:45 430 psi, 6:15 410 psi, SI 6:15 6:45 to install adjustable choke, 6:45 775 psi 30", 7:00 600 psi on 20/64" choke, opened choke to 28/64", 7:15 260 psi, 7:30 175 psi, 7:45 170 psi, 8:00 170 psi, 8:15 172 psi, 8:30 172 psi, 8:45 175 psi, 9:00 175 psi, 9:15 180 psi, 9:30 182 psi, 9:45 182 psi, opened on ½" choke @ 9:45 PM, 10:00 152 psi, 1:00 140 psi, 4:00 145 psi, 6:00 150 psi, 6:30 150 psi, 6:45 150 psi, opened on 36/64" choke, 7:00 122-125 psi, 7:15 125-132 psi, 7:30 128-135 psi, 7:45 130-137 psi, opened on 40/64" choke @ 8:00 90-95 psi, gas rate 1,100,000 SCFD, well nearly cleaned up but occasionally making some foam, burning flare during this flowing period.
- 9-03-81 @ 8:15 90-95 psi FTP, opened on 3/4" choke @ 8:30 62 psi, stabilized Flowed until 10AM 9-2-81, 1,100,000 SCFD gas rate, well was cleaned up making dry gas, closed in @ 10AM 9-2-81, 5" 400 psi, 10" 525 psi, 15" 600 psi.
- 9-04-81 Preparing to 4pt
- 9-05-81 Ran 4 pt test w/2" Critical flow prover & flange tap, 53¼ hrs SI, DWT 1029 psi @ 3PM 9-4-81.  
1. FTP 935 psi 3/16" chk 1 hr 374100 SCF  
2. FTP 881 psi 7/32" chk 1 hr 486300 SCF  
3. FTP 683 psi 5/16" chk 1 hr 750300 SCF  
4. FTP 531 psi 3/8" chk 1 hr 829000SCF  
Have bomb in hole f/pressure build up
- 9-10-81 Pulled BHP bomb 9-8-81
- 9-12-81 AOF 1954.2 MCFD, 56.3% N2