Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
SF-078497-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
San Juan 28-7 #219M

2. Name of Operator
CONOCO, INC.

9. API Well No.
30-039-26172

3. Address and Telephone No.
P.O. Box 2197 DU 3066 Houston, TX 77252-2197 (281) 353-0792

10. Field and Pool, or Exploratory Area
72319-MV / 71599 - DK

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec. 20, T28N, R7W
1480' FSL & 790' FWL

11. County or Parish, State
Rio Arriba, NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

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

13. 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.)*

Attached is Conoco's proposed procedure to squeeze. As per verbal by Wayne Townsend on 1/26/00. Extension was given to complete the squeeze on the above referenced well by 03/01/00.

FEB 2000
RECEIVED
OIL CON. DIV
DIST. 3

14. I hereby certify that the foregoing is true and correct
Signed Deborah Powell Title Regulatory Analyst Date 1/31/00

(This space for Federal or State office use)
Approved by /s/ Charlie Beecham Title Team Lead, Petroleum Management Date FEB - 4 2000
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

NMOCD

Conoco San Juan 28-7 Unit #219M DK Pilot Infill New Well Testing/Completion Procedure
Rio Arriba County, NM
UPDATED: 1 /9 /00

Summary:
The 28-7 Unit 219M new drill well is the second well of a 6 well Dakota 80 acre infill pilot program. These wells are mud drilled, w/ a 4 ½" long string production string. A cased-hole slug BHP test will be also be preformed on each DK zone (Two Wells, Paquate, and Cubero), like was done on the first well, the #225E. Getting good viable data on the DK in the subject pilot program is critical in developing economics and model for determining viability of infield drilling the DK (to be presented @ state hearing).
Some problems/differences in the drill and case program for this well (overexpenditure realized on this well also) included: a) lost circulation during single stage cement job attempt, as well as double anticipated cement volume due to excess hole washout. Good news was that, by temp survey, coverage over main pay zones, and b) use of mixed casing string -- 9.5# and 10.5#.

Main Objectives of Completion/Testing:

a) Get GOOD static BHP (P*) information in each lobe of DK, for inputting into the Reservoir model, to accurate predict estimated reserve recovery for infield wells. (DONE! 2448#--Two Wells; 2733#-Paquate; 2807#, Cub

FINAL EXTRAPOLATED PRESSURES:

Two Wells DK (upper zone)	2,605#
Paquate DK	2,855#
Cubero DK	2,896#

b) Get a good frac completion and one month test of DK (put to sales WITHIN 24 hours of rigging down completion rig).

c) Based on slug test, get a natural fracture permeability measurement in each lobe.

d) Do all this cost-effectively and safely!! TOTAL COMPLETION/TESTING COSTS TO UNDER TARGET SHOWN BELOW!!!

General information:

Spud date: 12/7/99. Drill Rig: Key Rig #49. Rig Release date: 12/22/99

			Allocated
AFE's:	#2421	–DK zone/associated costs	$ 414,485
	#2451	–MV zone/associated costs	$ 292,765
		Total authorized cost:	$707,250 ($342M for drill/case)
		Total actual Drill & cased:	$ 392,765 (approx $50M+ over)*

MAXIMUM compl/testing: $ 270,250
Facilities: $ 45,000
*have drilling write suppl after MV squeeze(est total --$70M over)

Location: 1480 ' FSL & 790' FWL, T 28 N, R 7 W, Section 20, Unit Letter L
Lat 36 degrees, 38.6 minutes, Long 107 degrees, 36 minutes

Elev: 6219 ' KB: 6232 ' (13' above GL)

TD: 7444' Proposed PBTD : 7357' (top of FC)

API: 30-039-26172

Pools: Basin-Dakota (#71599)
Blanco-Mesaverde (#72319)

DHC Order: #2246 (normal stips)

Logs: Halliburton Open hole logs run (well mud drilled –no intermediate csg)

Wellhead: **5000# WP**
7 1/16" 5M X 2 1/16" 5M tree adapter/cap
11" 3M X 7 1/16" 5M tubing spool
9 5/8" 8 rd X 11" 3M casing spool

Casing/Cement: **3500# WP** (80% of 4380# rating for 9.5# csg)
WC-50, 9 5/8", 36# surface, set in 12 ¼" hole, @ 461'
Cement: 275 sxs Class B, 15.6#, circ to surf
J-55, 4 ½", 10.5# (surf to 930') & 9.5# (930'-7444') set in 7 7/8" hole (highly washed out above DK)
Cement: Tail of 1600 sxs 10.5# "DS Litecrete" & Lead of 600 sxs 12.5# Cl "G". LOSS OF CIRCULATION DURING |JOB.
Est top, based on temp survey, is 4250'. TOP BASED ON CBL @ 5070!! All menefee and cliffhouse MV uncovered. Good bond from 5070'-5520'; fair to marginal bond (big mirco-annulus effect) from 5520' – TD. Displaced w/ 119 bbls H2O. (note: cmt bkt @ 4902' & 2346'). 7357' top of FC.

NOTES: **OPEN HOLE HIGHLY WASHED OUT (above DK)**
CEMENT ON PROD STRING NOT CIRC TO SURF
TOP of cement @ 5070'; obtained verbal approval from Wayne Townsend w/ BLM on 12/29/99 that we can hold Off on remedial cementing until after DK test (ie, do

Remedial cementing end of January)
MIXED CASING STRING
Due to "marginal" looking cement around DK, decision By team was made to defer nitrogen slug testing, and Proceed w/ simply setting gauges for 2 days across DK intervals, to obtain P*.
Cost for remedial cementing will be reduced by DS – Conoco will only pay for materials (not equip)

BHT: 180 DEGF

Formations:
Tops:

Ojo Alamo	1900	+4332
Kirtland	**2041**	**+4191**
Fruitland Fm.	**2575**	**+3657**
Picture Cliffs	**2825**	**+3407**
Lewis	**2965**	**+3267**
Chacra	**3762**	**+2470**
Cliffhouse	**4433**	**+1799**
Menefee	**4572**	**+1660**
Point Lookout	**5018**	**+1214**
Mancos	**5410**	**+822**
Gallup	**6240**	**-8**
Greenhorn	**6968**	**-736**
Graneros	**7030**	**-798**
Two Wells	**7073**	**-841**
Paguate	**7203**	**-971**
Cubero	**7228**	**-996**
Oak Canyon	**7330**	**-1098**
Morrison	**7398**	**-1166**

NEP:

DK had 48' NEP (60' gross sand) – vs 225E having 58' NEP (100' gross)
DK two wells had 6% porosity (vs 10% in 225E)

Proposed DK BHP test/perf intervals (31 holes total):

Two Wells (test #3): 13 Perfs @
7077',79',81',83',85'87',94',96',98'7100',02',04',06'
Paquate (test #2): 7 Perfs @ 7204',06',08'10',12',14',16'

Cubero (test #1): 11 Perfs @
7247',48',65',67',69',70',78',80',82',86',88'

Special BLM stips: Stips on Compressor installations
Notify BLM office (Envir compl staff) @ 599-6323 48 hrs prior to

Construction activities
No construction if location too wet (greater than 6" ruts)
Pits will be lined (8 mill min)
Certain drainage stips (see attached); standard location/berm stips
Paint color to be used: Federal 595a-34127 (Juniper Green)
See special vent stips (into tanks; etc)
Four arch sits surveyed; marked adjacent to well area
START CEMENT REMEDIAL BY END OF JAN, 2000.

Procedure:

1. RU workover rig. Conduct pre-job safety meeting.
2. With new inspected 2 3/8" workstring (VERY IMPORTANT FOR GOOD PRESSURE INTEGRITY), proceed to RIH w/ gage bit for 4 ½", 10.5# csg (mixed string of 10.5# & 9.5# csg), & drill-out any cement to float collar @ 7357'. Circulate water (displacement fluid) w/ 2% KCL water @ high rates until clean returns realized. Upon getting clean returns w/ no mud/cement (NOTE: ensure clean tanks w/ clean 2% KCL water being used), proceed to pressure test casing to 3500 psi.
3. If good pressure test, proceed on RU of wireline & lubricator and run CBL/GR/CCL from PBTD to TOC (est to be 4250', based on temp logs). NOTE: Chances of micro-annulus high. Be prepared to have water & pump ready & hooked-up to place 1000 psi surface pressure. If bond readings reflect potential micro-annulus effect, pressure up to 1000 psi, and re-log. Correlate & get on depth w/ Halliburton open-hole GR/neu/den porosity log. POOH.
4. W/ lubricator, and adhering to all Conoco safety procedures, proceed w/ RIH and perforating the 3 DK lobes (30 perfs total, 3 1/8" casing guns, 12 gram, 306T charges or equiv, .3" dia, select fire):

   Two Wells (test #3): 13 Perfs @ 7077',79',81',83',85'87',94',96',98'7100',02',04',06'
   Paquate (test #2): 7 Perfs @ 7204',06',08'10',12',14',16'

   Cubero (test #1): 11 Perfs @ 7247',48',65',67',69',70',78',80',82',86',88'

   NOTE: Monitor any potential loss of fluid or pressure in wellbore after perforating. If loss/communication noted, DON'T fill hole w/ additional fluid, unless well control needed.
5. RIH w/ open-ended tubing. If no loss of fluid realized after perforating, proceed on spotting 3 bbl pill of 15% inhibited HCL acid over proposed perf interval (if loss realized, proceed to simply unload fluid from wellbore). PU to 3000' and proceed to unload wellbore water, working way down to PBTD. (Note: will be circulating out weak acid; take necessary precautions at surface). Upon full evacuation of wellbore, open to pit. If production being realized, hook-up through meter and get ½ hour stabilized rate measurement. SI. Record SI pressures (especially overnight). INSTEAD OF STEP 6 & 7 BELOW, simply proceed to RIH w/ wireline set BP's w/

4 day gauges beneath each, and set across each DK interval. Set @ 7235', 7150', 7050'. Shut surface valves; monitor surface pressure. After minimum of 48 hrs, retrieve BP's/gauges w/ workstring & retrieving head; download; if pressures/data is good, and Engrs agree, proceed w/ frac stimulation plans (ATTEMPT TO GET INDIV ZONE FLOWRATES WHILE SETTING PLUGS!!). Est cost for this testing is $16M.

6. With RIH w/ Schlumberger plug/packer/dual MRO BHP test assembly, and locate across bottom DK interval. Run GR/CCL strip to ensure assembly on depth. Install 5000# TIW valve and lubricator (5000#), w/ 5000# pressure gauge on lubricator. RIH w/ electric line w/ BHP surface readout gauge. RU nitrogen pump/lines, and pressure test to 4000#. IF FLUIDLEVEL NOTED ABOVE ZONE w/ gauge, PROCEED circulating 3 casing volumes @ 1000 scfm (low rate) to unload well. Set packer & proceed to inject nitrogen into tbg @ 1500 scfm rate for slug test. Upon obtaining 2700 psi BHP, seat gauge, keeping 200 additional psi pressure in tbg to keep gauge seated. SD nitrogen (only pump if pressure falls-off). If successful 4 hour fall-off test, proceed w/ repeat for other 2 zones.
   NOTE #1: Connect backside to chart meter run/flare, and produce during test, monitoring rates/pressures. Also have piping available to connect to tbg also, to obtain 10 minute rate on lower zone, prior to injection slug test. NOTE #2: If first test not successful, and leak suspected, proceed to do pressure test across blank pipe..
   NOTE #3: Have portable generator hooked up to rig lights Some tests may go into darkness.
   NOTE #4: Generally 300# - 400# hydrostatic difference from surface pressure reading to BH reading using nitrogen. When gauge is seated, and additional 300# pressure put on tbg, SI tbg & SD Nitrogen truck. Monitor pressure gauge on lubricator, and re-open/re-inject when necessary to keep gauge seated.
   NOTE #5: Require BJ to provide communication/headset equipment to allow good communication to main site personnel during nitrogen injection.
7. Upon successful slug test on top zone (test #3), bleed tbg down just enough to pull gauge out of SN, then proceed w/ stress test (injecting nitrogen to 3300# BHP, @ 2000 scfm, until frac is initiated; then seating gauge, and 3 hr SI). NOTE: If not sufficient time to start stress test, proceed to pull gauge up into lubricator, under pressure, and shut TIW valve until morning. After stress test completed on top zone, bleed down tbg until gauge pulled, then fully bleed-down. POOH w/ gauge, and change plug/packer depths to cover middle zone. Proceed w/ stress test. Repeat same for lower zone. POOH w/ gauge. Rig down Schlumberger. POOH w/ plug/packer/MRO gauges. Email results to Craig Moody and Marc Shannon in Houston office.
8. RU stimulation company. After safety meeting and pressure testing of lines, proceed to pump and establish injection w/ 2 % filtered KCL water, dropping 50 ball-sealers during injection of 1000 gals 15% acid, and overflushing w/ 2% KCL water. SI, and get ISIP. Knock balls off w/ wireline gauge ring. Proceed w/ frac stimulating the DK w/ a slickwater system, 20/40 Brady, down casing, with frac tagged w/ single isotope, and containing inhibitor beads. Target rate/treating pressure: 3400 psi @ 50 BPM (max pressure—3500#). After completion of job & 15 minute ISIP, flow back immediately. RIH w/ open-ended 2 3/8" and unload w/ gas. Over adjacent weekend after well cleaned-up, keep well SI, RECORDING SURFACE PRESSURES (and ensuring no surface valve leaks) and Monday am RU wireline and run BHP gradient survey, every 1000', as well as static DHP. After BHP survey, run tracer GR log over treated interval .NOTE #1 –Closely monitor/record rates/pressures after frac, including estimated fracture flowback volume. When well unloaded, land 2- 3/8" tubing string at top of lower Cubero lobe interval in DK. PUT TO SALES. (note: **goal is to have to sales within one day of rigging off**). Obtain gas flow rate and perform gas analysis after well cleans up. NOTE #2: During frac treatment preliminary pad pump, perform 50 BPM, 35 BPM, 20 BPM 10 BPM, and SI ISIP stabilized pressures. Record electronically on FracPro file. NOTE #3 – Due to HIGHER BHP's, less apparent natural fractures; and less NEP, well will perform 1/3rd less than 225E. ONLY GOT 63M # sand in!!!! RUN GR after-frac log across DK
9. Produce DK zone for minimum of one month (period to be determined by Resr Engr), carefully documenting flowrates; tubing and casing pressures on daily basis. IF ADDITIONAL TIME PAST END OF JANUARY NEEDED, CONTACT BLM OFFICE TO GET EXTENSION APPROVAL!!
10. Upon completion of DK flow test period, RU and POOH w/ tbg.. RU Schlumberger and set BP w/ gauges @ 7040', just above top DK perf, by wireline. Fill casing w/ clean 2% KCL water, and pressure test plug/casing to 3500 psi. Bleed-off, RU lubricator and RIH w/ USI-CBT log, and run 200' strip just above plug w/ no pressure,

then run under 3,500# -- up through TOC (at least up to 4800'). Correlate depth w/ Blue-jet CBL. CONOCO NOT TO PAY FOR THIS OPERATION!!! After logging completed (if time allows, unload some of water out of casing using gas), and 2 days of SI obtained, retrieve BP w/ gauges by tubing/retrieving head. Set composite BP @ 5300', and, based on USI-CBT data (if good cement determined up through 4900', could frac PLO before proceeding w/ squeeze work), proceed w/ shooting squeeze holes (4 shots) @ 5000', RIH and setting packer just above, and attempting to establish circulation to surface. IF SUCCESSFUL, set retainer and proceed to perform remedial primary cement job to surface. IF unsuccessful in establishing circulation to surface, perforate holes/breakdown @ 4300, and attempt suicide squeeze. After remedial cementing completed; drilled-out; CBL run and BLM approves, proceed w/ frac'ing remainder of MV either through tbg, or using frac liners.and 2 stage frac MV w/ slickwater system (NO scale inhibitor beads). Clean-out to bottom plug and unload/obtain MV stabilized test for DHC application. Submit tests to Marc . NOTE #1: On one of future DK pilot wells, will also perform slug tests in MV zone. Check w/ engr. This will be done prior to stimulation. NOTE #2: Check w/ Regulatory/State to ensure approval obtained for existing primary cement job; that no remedial cementing required. NOTE #3 : AFTER SQUEEZE WORK, NOTIFY DRILLING TO PREPARE SUPPLEMENT

11. Proceed to drillout last plug and DHC w/ DK. Set tubing @ top DK perf. Put to sales.

San Juan East Team