

NAGOOLTEE PEAK 5 *Fed Com* 007
API#: 30-015-32603
Lease #: NM-NM81217
LOCATION: Sec 5, T22S-R24E
SURFACE HOLE LOCATION: 1080' FSL & 740' FEL
EDDY COUNTY, NEW MEXICO

PROJECT: Coil Tubing Stimulation – Cisco Reef formation

OBJECTIVE: The well was drilled and completed with 7" csg with TOC at surface in July 1994. Upper Penn formation was perforated/acidize and put on production. The well is an ESP producer well. This well was selected for the Coil Tubing Stimulation pilot. In addition to the economic opportunity, this project is expected to incorporate an innovative stimulation technique to improve the base production of all the wells in the North New Mexico / Terrell. Successful results would extend this technology application further in the Upper Penn, Yeso, Wolfcamp and 1st Bone Spring, which have been extensively developed with vertical wells. The well Falls in the Yeso/Recompletion Pilot Project Presented to the BLM 05/25/2010

WELL TYPE: PRODUCER

CURRENT PRODUCTION: 0 BO, 0 BW, 0.2 MSCFD

ANTICIPATED PRODUCTION: 23 BO, 458 BW, 425 MSCFD

CURRENT LIFT METHOD: ESP

NEW LIFT METHOD: BEAM PUMP

WELL INFORMATION: All Depths Are Measured Depths

Spud Date: March 18, 2003

TD: 8604' MD

PLUGBACK: 8519' MD

KB: 17'

PROPOSED CISCO REEF PERFORATIONS: Jet out four (4) - 7/8" perforations at 8112' w/ 90 deg phasing. Acid Stimulate perforations w/ 15% HCl.

CASING DETAIL:

SIZE (IN)	Weight (LB/FT)	Grade	Depth (FT)	Bit Size (INCH)	CMT (SX)	TOC (FT)	TECHNIQUE (TS, CBL, CIRCULATED, CALCULATED)
9-5/8"	36#	J-55	1604'	12-1/4"	1000	0	Circulated
7"	23#	L-80	8604'	8-3/4"	1425	6384	CBL

TUBING DETAIL (current as per Lowis):

Part Type	Name of Component	Install Date	Total Quantity	Total Length	Top Depth	Bottom Depth
ESP Cable	ESP Cable -4 FL LD GALV	01/01/1801	1	8414.65	15.00	8429.65
ESP Downhole Sensor	ESP Pressure Sensor SMG V ESP	01/18/2008	1	3.00	8452.15	8455.15
ESP Gas Separator (Non-Serialized)	ESP Gas Separator 3B RGS W INTK HNGR	01/18/2008	1	3.80	8414.55	8418.35
ESP Lower Pigtail	ESP Lower Pigtail 4 LD	01/18/2008	1	1.00	16.00	17.00
ESP Motor (Non-Serialized)	ESP Motor 80HP/2155V/24AMP RERATED 90HP/2243V/26AMP 456 UT ESP	01/18/2008	1	22.50	8429.65	8452.15
ESP Motor Flat Cable	ESP-Motor Flat Cable 6 FL LD MONEL	01/18/2008	1	110.00	8319.65	8429.65
ESP Motor Shroud	ESP Motor Shroud - N/A	01/18/2008	1	40.33	8414.55	8454.88
ESP Pump (Non-Serialized)	ESP Pump TD 650 172 HSS FL LT ESP	01/18/2008	1	14.10	8400.45	8414.55
ESP Pump (Non-Serialized)	ESP Pump TD 650 172 STAGES HSS FL BOH ESP	01/18/2008	1	13.45	8387.00	8400.45
ESP Seal	ESP Seal TR4 98L UT ESP	01/18/2008	1	0.00	8418.35	8418.35
ESP Seal	ESP Seal TR4 DBL BG-LT ESP	01/18/2008	1	11.30	8418.35	8429.65
Seat Nipple / Shoe	Seat Nipple - Standard (2.875") Cup Type	01/18/2008	1	1.00	8386.00	8387.00
Tubing - OD 2.875	L-80 2.875 OD/ 6.50# T&C External Upset, 2.441 ID 2.347 Drift	01/01/1801	257	8370.00	16.00	8386.00
Tubing Hanger	Tubing Hanger - KB 17'	01/01/1801	1	1.00	15.00	16.00

DEVIATION SURVEY:

MD	Degree
100	1.15
400	1.31
800	0.89
1200	0.78
1600	1.23
2000	1.31
2400	1.32
2800	1.29
3200	1.19
3600	1.04

MD	Degree
4000	0.96
4400	1.13
4800	1.31
5200	1.59
5600	2.75
6000	2.02
6400	1.92
6800	4.46
7200	10.15
7600	11.46

MD	Degree
7700	10.74
7800	11.44
7900	11.91
8000	10.86
8100	12.07
8200	11.34
8300	10.35
8400	10.02
8500	8.63
8568	8.8

ANY KNOWN CASING PROBLEMS: None

OPERATIONAL COMMENTS:

- Use 2% KCl water as completion if necessary. Use real KCl, not liquid substitutes.
- *Oxy will provide 1 tank with 4000 gallons filtered to 10 microns or city water. This amount is required to jet out the four perforations. This point was already discussed with Dalton Dean and RDS personnel.*
- *Contact BLM 24 hours Prior to beginning work.*
- *Oxy will provide 400 glns of 15% HCL plus additives to stimulate perforations (Acid volume subject to change).*

RECOMMENDED PROCEDURE:

NOTE: PLEASE CALL PC'S (JERRY HARRISON OR VAN BARTON) AT (575) 628-4110/4111 AND THE PUMPER FOR THE RUN (ASK PC FOR CONTACT INFORMATION, IF NECESSARY) TO INFORM THEM OF YOUR WORK ON THE WELL 48 HOURS PRIOR TO THE JOB, OR AS SOON AS POSSIBLE, IF THAT TIME IS PASSED. ALSO, CONTACT THE BLM-CARLSBAD AT LEAST 24 HOURS PRIOR TO WORK.

Well preparation

1. MIRU PU.
2. Ensure the well is dead. ND WH. NU BOP.
3. POOH w/ ESP & LD 2-7/8" tubing. Scan tubing.
4. Clean tubing to remove scale and/or paraffin.
5. RIH w/ bit and scraper on 2-7/8" working string to 8,500'. POOH.
6. Run the **Deflecting Shoe** in the hole with 12 jts of clean 2-3/8" tubing. Continue running in with clean 2-7/8" tubing to just below 8112'.
7. RU wireline unit. Run a GR/CCL log to correlate shoe to the log and adjust to 8112'. RD wireline unit.

Rig up coiled tubing unit

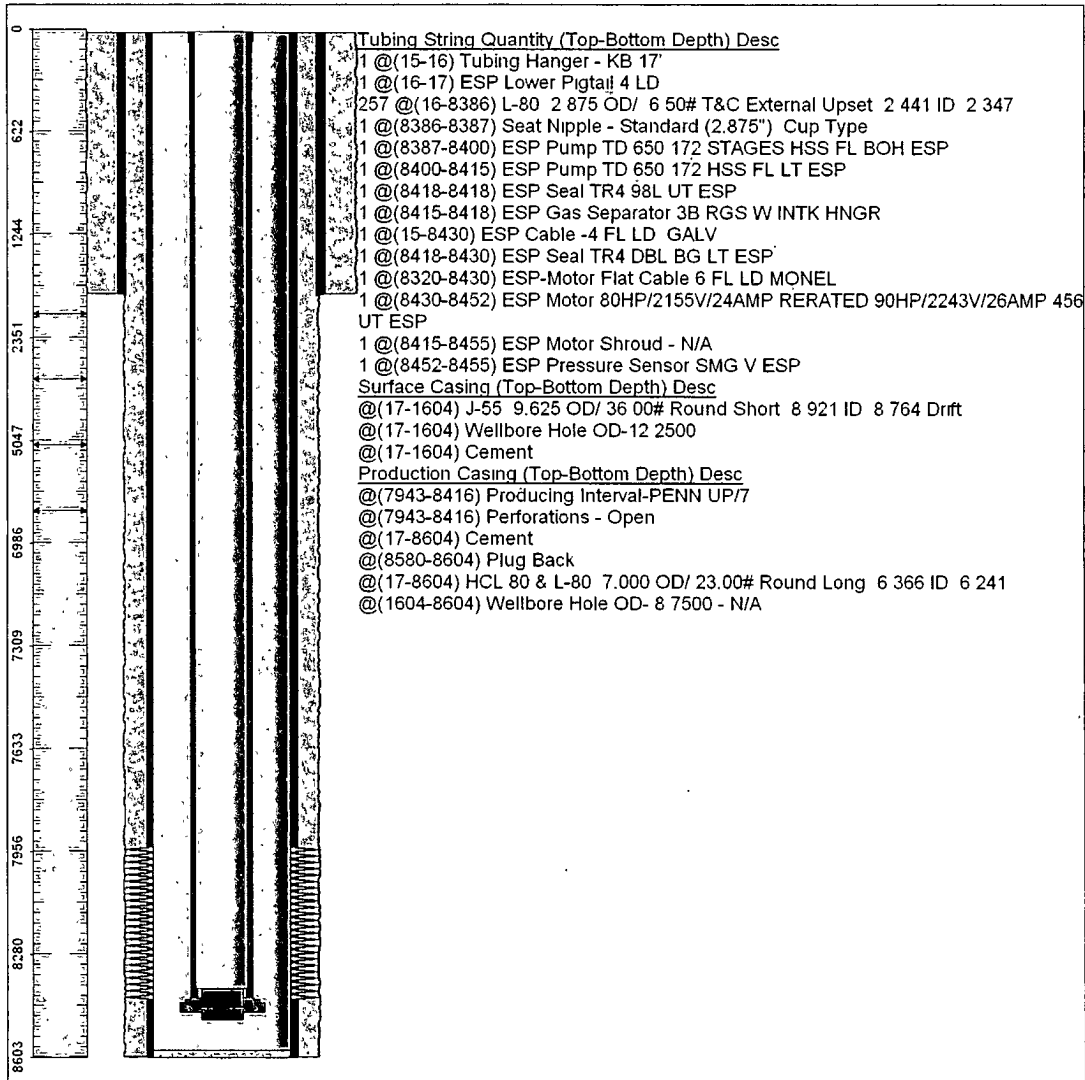
Jet 4 perforation holes at 0°, 90°, 180° and 270° in Cisco Reef formation at **8112'**.

8. Run mud motor with perforating mill on coil tubing inside the 2-7/8" tubing. Perforate a hole in 7" casing at **8112'** using a **7/8" mill on a flex shaft**.
9. Pull out mud motor and attach **jetting hose and nozzle** and run back in.
10. Jet out perforation for effective acid penetration of up to 300' from the wellbore at **8112'**.
11. Acidize the perforation. Stimulate w/ approximately 100 glns of 15% HCL with Fercheck plus 0.2% corrosion inhibitor, 0.2% surfactant and 0.4% iron control. Displace with 2% KCL. (Acid volume subject to change).
12. Pull out the jetting hose and nozzle
13. Rotate tubing 90 degrees (**90°**)
14. Repeat steps 8, 9, 10, 11 and 12
15. Rotate tubing 90 degrees (**180°**)
16. Repeat steps 8, 9, 10, 11 and 12
17. Rotate tubing 90 degrees (**270°**)
18. Repeat steps 8, 9, 10, 11 and 12
19. POH 2-7/8" tubing and LD the deflecting shoe.
20. RDMO Coil Tubing Unit

Permanent Completion

21. MU refurbished ESP on 2-7/8" tubing and Seating Nipple. ESP design will be provided by Mike McNeely's group.
22. Land the 2-7/8" tubing. Intake at 8420'.
23. Ensure that the well pumps up properly.
24. RDMO PU.
25. Turn Over To Production.

WELLBORE SCHEMATIC



WELLBORE DIAGRAM AND INFORMATION

County: Eddy County

State: New Mexico

Hole size:
12 1/4"

Hole size:
8 3/4"

**9 5/8" 36# J-55 @ 1604' w/
1000 sx circulated to SFC**

TOC @ 6384' - CBL

**PBTD @
8519' MD**

Perforations - Open - Penn Upper (Cisco)
7943'-8416'

Perforations – Proposed – Penn Upper (Cisco)
8112' (4 SPF)

**7" 23# L-80 @ 8604' w/
1425 sx, TOC @ 6384' CBL**

TD @ 8604' MD

Spud: 3/18/2003
Elevation: 4258' GL
KB: 17'
TD: 8604' MD
PBTD: 8519' MD
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