STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Form C-103
Revised 1-1-89

OIL CONSERVATION DIVISION

P O BOX 2088
SANTA FE, NEW MEXICO 87508-2088

Submit 3 copies to
Appropriate District Office

DISTRICT 1
POBox 1980, Hobbs, NM 88240
DISTRICT 2
PODrawer DD, Artesia, NM 88210
DISTRICT 3
1000 Rio Brazos Rd., Aztec, NM 87410

RECEIVED
JUN 13 1994
OIL CON. DIV.
DIST. 3

WELL API NO.
30-045-11397

5. Indicate Type of Lease STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

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" (FORM C-101) FOR SUCH PROPOSALS)

7. Lease Name or Unit Agreement Name
NM 03189

1. Type of Well: OIL WELL ☐ GAS WELL ☒ OTHER

2. Name of Operator NORTHWEST PIPELINE CORP.

8. Well No. COX CANYON UNIT #1

3. Address of Operator PO BOX 58900 SLC, UTAH 84158-0900

9. Pool Name or Wildcat BLANCO MESAVERDE

4. Well Location
Unit Letter N : 835 Feet From The SOUTH Line and 1980 Feet From The WEST Line

Section 16 Township 32N Range 11W NMPM SAN JUAN COUNTY

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
6972 GR

CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPINIONS ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☒	OTHER Plug Back + Sidetrack in same zone ☐	CASING TEST AND CEMENT JOB ☐	OTHER ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Estimate start date: July 1, 1994.
It is proposed to plug the open hole completion, and sidetrack the wellbore back to the same zone, the Mesaverde. The well will be cased and the Mesaverde perforated and fracture stimulated.

See attached procedure for details.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kathy Barney TITLE SR. OFFICE ASSISTANT DATE June 9, 1994

TYPE OR PRINT NAME KATHY BARNEY TELEPHONE NO. (801)584-6981

(This space for State Use)

APPROVED BY Charles Gholson TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE JUN 13 1994

CONDITIONS OF APPROVAL, IF ANY:

5-18-94

PLUG BACK & SIDETRACK PROCEDURE
COX CANYON UNIT #1

1. "NOTIFY BLM and NMOCD 24 HOURS PRIOR TO WORK" and prior to running CBL log.

2. Locate and test anchors. Set new anchors if necessary. Set blow tank. Dig circulation pit.

3. MIRUSU.

4. Blow down well. Kill tubing with 2% KCl water only if necessary. ND wellhead and NU BOP. Test BOP.

5. Pull tubing hanger and TOH with 2-3/8" tubing. Visually inspect and replace any bad joints. Be prepared to run freepoint if tubing is stuck and cut off tubing below 7" casing shoe in open hole.

6. TIH with 2-3/8" work string with 6-3/4" bit and clean out to TD. If fish is in hole review procedure with BLM and engineering. If fill is encountered attempt to circulate out with gas.

P & A MV AS PER CONDITIONS ENCOUNTERED

7. On wireline run CBL/CCL logs in 7" casing from 5700' - 5000',and in 8-5/8" casing from 3300'-1300'. Revise procedure accordingly.

8. On tubing set cement retainer in 8-5/8" casing at 5050'. Roll hole with fresh water.

9. Establish circulation below retainer with water. Pump Class "B" cement with silica flour and 2% CaCl below retainer. Volume will be dictated by the hole conditions. Calculate volume from retainer to TD or fill plus 100% in open hole. Displace to retainer. Pull out of retainer and spot 100' cement plug on retainer. Reverse out at least one hole volume. SI overnight.

10. Pressure test casing to 1000 psi maximum. TOH.
Squeeze any casing leaks. See Cement Squeeze Procedure.

11. Install casing spool.

CEMENT SQUEEZE

12. If pressure test holds, with wireline shoot 3 cement circulation holes +/- 30' above TOC in 8-5/8". Estimate ±1500'

13. TIH with tubing and packer. Set packer +/-100' above squeeze holes. Establish circulation up bradenhead. Continue circulation to surface with water until clear.

14. Circulate to Bradenhead at surface with 65/35/6 cement to contain Celloflake LCM and tail in with 100 sx class "B" neat. Calculate cement volume using 100% excess. Do not exceed 1,000 psig pump pressure. Hesitate in with last few sacks.

* If cement is not circulated to surface run CBL from squeeze holes to TOC after cleanout and review.

15. Hold pressure for 1 hour.

16. Release packer and reverse circulate out any cement. Shut well in overnight with pressure.

17. Pick up 7-3/4" drill bit on tubing and drill up cement in 8-5/8" casing. Pressure test squeeze holes to 1000 psig. TOH. Resqueeze as necessary.

SIDETRACK

Objective
KICK OFF ±200' ABOVE CLIFF HOUSE TRANSITION ZONE INSIDE 7" CASING.
DRILL 6-1/4" HOLE TO TD. 300 vertical feet below base of Menefee. ±6350'
RUN OPEN HOLE LOGS: DIL, CNL, FDC, GR. Alternative: run cased hole Blue Jet PNDS log(Pulsed Neutron Decay Spectrum).
LAND 4-1/2" CASING FROM SURFACE TO TD

18. On wireline set CIBP at kickoff depth just above a casing collar at a point with good cement bond.

19. Pick up Whipstock(anchorstock) slide assembly and TIH with 3-1/2" DP, 4-3/4" Drill Collars and one joint high grade drill pipe below drill collars. Refer to manufacturer's specs for all recommended milling weights, number of drill collars and RPM.

    A Z Grant(now Smith International) tool specs and procedure.
    Tool length=16 1/2", Anchorstock whip=8'length, 3° whip face angle

20. Set bottom of slide assembly at ±4675' by applying hydrostatic pressure down drill string. Approximately 3500 psi. May need pump truck.

21. Shear off from slide assembly. Approximately 45,000 psi over drag weight. Begin milling with starter mill.

    Mill as per manufacturer's recommended procedure. Circulate with water.
    a. Run starter mill with joint of high grade drill pipe, S-135, below drill collars. Drill approx. 16".
    b. Run window mill with joint of drill pipe below drill collars. Mill length of whip face plus 10' into formation.
    c. Run window mill and watermellon mill on drill collars. Make several passes through window to clean up burrs. Ream until smooth with no drag.

22. Displace water with gas. Take deviation surveys until 5°-6° is reached. TOH.

23. **Do not rotate a bit or stabalizer down the whip face.**

24. TIH with 6-1/4" bit, near bit stabalizer and drill collars. Drill enough hole depth to pass the packed BHA through window. TOH.

25. TIH with 6-1/4" bit and packed bottom hole assembly (stiff) on DP to maintain deviation. Displace water with gas. Continue normal drilling operations to TD of 6000' taking frequent surveys. TOH.

26. Run the following open hole wireline logs across the Mesaverde formation. Confirm depths with engineering. DIL,FDC,SNL,GR
    Alternative: run Blue Jet PNDS log after cementing 4-1/2" casing.

27. Blow wellbore clean and check for fill. TOH.
    LDDP and collars.

28. Change over to 4-1/2". Install 4-1/2" stripping head.

29. Run and configure casing as follows in open hole.

    4-1/2", J-55, 10.5# (or 11.6# if in stock), ST&C casing from surface to TD = 6350'
    4-1/2" guide shoe on bottom
    40' shoe joint above guide shoe
    float valve
    4-1/2" casing to surface
    No centralizers

30. Break circulation with gas on last joint in hole and wash to bottom. Blow wellbore until clean.

31. Pump 20 bbls gel water followed by 10 bbls fresh water. Cement long string as follows using 65% excess;

    LEAD: 60 sx 65/35 class "B" Pozmix with 6% gel, 2% CaCl2, 3pps Gilsonite and 1/4pps Celloflakes
    yield= 1.77 ft3/sk

    TAIL: 112 sx class "B" with 2% CaCl2
    yield= 1.18 ft3/sk

32. Bump plug and pressure to 1000 psi. ND BOP. Cut off casing . Leave enough 4-1/2" stub to seal in tbg spool.

33. ND BOP. Land casing with 50,000 psi and cut off.

34. NU new 4-1/2" spool. Test to 2000 psi. NU BOP.

COMPLETION

*** THE FOLLOWING IS A 3 STAGE MV SLICK WATER FRAC PREPARED FOR THE N.M. 32-11 COM #2A (SE/4 sec 19-32N-11W).IT WILL BE SIMILAR. ***

Plan on 3 stage stimulation of 100,000# 20/40 sand each, limited entry, using slick water. Breakdown perfs with acid prior to fracture stimulation.
Actual depths, number of perforations & volumes will be based on logs.

1. TIH w/ 3-7/8" bit on 2-3/8" tubing and clean out to PBTD. Roll hole with 1% KCl water. TOH.

2. On wireline run CBL and GR/CCL in 4-1/2" casing from TD-7" without pressure. Pressure casing to 1000 psi only if necessary on second run.

3. Install 3000 psi frac head and pressure test casing to 3000 psi.

4. TIH w/ 2-3/8" tubing to 5755' and spot 200 gals 7-1/2% HCl acid across Point Lookout perforations (5511'-5755'). Acid to contain 1 gal/1000 gals surfactant and corrosion inhibitor (24 hr inhibition at 150°F). TOH.

5. Using HLS logs of 11-25-93 to correlate perforate the Point Lookout formation in 4-1/2" casing w/ 35 - 0.32" holes using a 3-1/8" select fire casing gun from top down at the following depths; 5511', 27', 32', 35', 38', 41', 44', 47', 50', 53', 56', 83', 85', 91', 5601', 06', 10', 14', 18', 27', 30', 33', 36', 39', 53', 56', 88', 90', 97', 5721', 23', 41', 59', 73', 75'.

6. Breakdown and attempt to balloff the Point Lookout down casing w/ 1800 gals 15% HCl acid and 70 - 7/8" 1.3 specific gravity RCN perf balls.
Maximum pressure = 3100 psi.
Acid to contain 1 gal/1000 gals surfactant, iron control and inhibitor (24 hour inhibition at 150°F).

7. RIH w/ wireline junk basket and recover frac balls. Rig up WSI frac adapter on top of tree saver. Evaluate number of hits.

8. Rig up pump trucks and fracture stimulate the Point Lookout formation with 120,000# 20/40 Brady sand in 133,333 gals water at 55 BPM injection rate down casing as follows:

STAGE	FLUID (gals)	SAND (lbs)
Pad	25,000 gals	-
0.5 ppg	20,000 gals	10,000 sand
1.0 ppg	50,000 gals	50,000 sand
1.5 ppg	33,333 gals	50,000 sand
2.0 ppg	5,000 gals	10,000 sand
Flush	(6,971 gals)	-
	133,333 gals	120,000 # 20/40 Brady sd
	(140,304 gals total)	

Required amount of usable water = 3,340 bbls (140,304 gals), 9-400 bbl tanks.
Maximum injection rate = 60 BPM. Maximum STP =3100 psi.
Anticipated STP = 1,500 psi. Anticipated injection rate = 55 BPM.

Estimated ISIP = 0.

All sand to be tagged w/ 0.30 MC/10000# IR-192 tracer.
All frac fluid to contain 0.5 gal/1000 gals FR-30 friction reducer,
1 gal/1000 gals surfactant (Aquaflow), and biocide added to tanks previously.

9. On wireline set 4-1/2" top drillable bridge plug at ±5490'. Use WSI frac adapter head on top of tree saver. Pessure test BP and casing to 3100 psi.

10. TIH w/ 2-3/8" tubing to 5418' and spot 200 gals 7-1/2% HCl acid across Menefee perforations (5201'-5418'). Acid to contain 1 gal/1000 gals surfactant and corrosion inhibitor (24 hr inhibition at 150°F). TOH.

11. Using HLS logs of 11-25-93 to correlate perforate the Menefee formation in 4-1/2" casing w/ 26 - 0.32" holes using a 3-1/8" select fire casing gun from top down at the following depths; 5201', 03', 06', 08', 20', 22', 39', 5311', 13', 15', 17', 34', 36', 41', 43', 44', 46', 65', 67', 71', 73',75', 76', 78', 99', 5418'.

12. Breakdown and attempt to balloff the Menefee down casing w/ 1300 gals 15% HCl acid and 52 - 7/8" 1.3 specific gravity RCN perf balls.
Maximum pressure = 3100 psi.
Acid to contain 1 gal/1000 gals surfactant, iron control and inhibitor (24 hour inhibition at 150°F).

13. RIH w/ wireline junk basket and recover frac balls. Evaluate number of hits.

14. Rig up pump trucks and fracture stimulate the Menefee formation with 90,000# 20/40 Brady sand in 103,333 gals water at 47 BPM injection rate down casing as follows:

STAGE	FLUID (gals)	SAND (lbs)
Pad	20,000 gals	-
0.5 ppg	20,000 gals	10,000 sand
1.0 ppg	35,000 gals	35,000 sand
1.5 ppg	23,333 gals	35,000 sand
2.0 ppg	5,000 gals	10,000 sand
Flush	(6,763 gals)	-
	103,333 gals	90,000 # 20/40 Brady sd
	(110,096 gals total)	

Required amount of usable water = 2,621 bbls (110,096 gals), 7-400 bbl tanks.
Maximum injection rate = 52 BPM. Maximum STP =3100 psi.
Anticipated STP = 2,000 psi. Anticipated injection rate = 47 BPM.

Estimated ISIP = 800 psi.

All sand to be tagged w/ 0.30 MC/10000# IR-192 tracer.
All frac fluid to contain 0.5 gal/1000 gals FR-30 friction reducer, 1 gal/1000 gals surfactant (Aquaflow), and biocide added to tanks previously.

15. On wireline set 4-1/2" retrievable bridge plug (RBP) at ±5180'. Use WSI frac adapter on top of tree saver. Drop 5 gallons sand on RBP with dump bailer. Pressure test RBP and casing to 3100 psi.

16. TIH w/ 2-3/8" tubing to 5147' and spot 230 gals 7-1/2% HCl acid across Cliff House perforations (4853'-5147'). Acid to contain 1 gal/1000 gals surfactant and corrosion inhibitor (24 hr inhibition at 150°F). TOH.

17. Using HLS logs of 11-25-93 to correlate perforate the Cliff House formation in 4-1/2" casing w/ 40 - 0.32" holes using a 3-1/8" select fire casing gun from top down at the following depths; 4853', 60', 65', 92', 94', 4900', 02', 15', 96', 5000', 04', 08', 12', 15', 18', 22', 26', 29', 35', 39', 59', 63', 67', 71', 75', 79', 88', 90', 92', 5100', 02', 04', 23', 25', 29', 37', 39', 41', 44', 47'.

18. Breakdown and attempt to balloff the Cliff House down casing w/ 2000 gals 15% HCl acid and 80 - 7/8" 1.3 specific gravity RCN perf balls.
Maximum pressure = 3100 psi.
Acid to contain 1 gal/1000 gals surfactant, iron control and inhibitor (24 hour inhibition at 150°F).

19. RIH w/ wireline junk basket and recover frac balls. Evaluate number of hits.

20. Rig up pump trucks and fracture stimulate the Cliff House formation with 120,000# 20/40 Brady sand in 133,333 gals water at 60 BPM injection rate down casing as follows:

STAGE	FLUID (gals)	SAND (lbs)
Pad	25,000 gals	-
0.5 ppg	20,000 gals	10,000 sand
1.0 ppg	50,000 gals	50,000 sand
1.5 ppg	33,333 gals	50,000 sand
2.0 ppg	5,000 gals	10,000 sand
Flush	(6,530 gals)	-
	133,333 gals	120,000 # 20/40 Brady sd
	(139,863 gals total)	

Required amount of usable water = 3,330 bbls (139,863 gals), 9-400 bbl tanks.
Maximum injection rate = 70 BPM. Maximum STP =3100 psi.
Anticipated STP = 1,500 psi. Anticipated injection rate = 60 BPM.

Estimated ISIP = 0.

All sand to be tagged w/ 0.30 MC/10000# IR-192 tracer.
All frac fluid to contain 0.5 gal/1000 gals FR-30 friction reducer,
1 gal/1000 gals surfactant (Aquaflow), and biocide added to tanks previously.

21. Shut well in for 1 hour. TIH w/ tubing, and notched collar and cleanout sand and frac balls to RBP w/ gas. Obtain pitot tube gauge if possible. TOH. TIH with 2-3/8" tubing and retrieving head and retrieve RBP. TIH w/ tubing and mill. Clean out sand to lower BP. Obtain pitot tube gauge if possible. Drill out BP and push to PBTD. Obtain pitot tube gauge when possible.

22. TOH when well has cleaned up. On wireline run after frac gamma ray log from 5800' - 4800' and liner top at 3182'.

23. TIH w/ 2-3/8", J-55, 4.7#, 8rd, EUE tubing w/ notched collar on bottom and SN 1 joint up. Clean out to 5850'. Land tubing at ±5600'. Pump out plug if used and reverse circulate clean. Obtain pitot tube gauge.

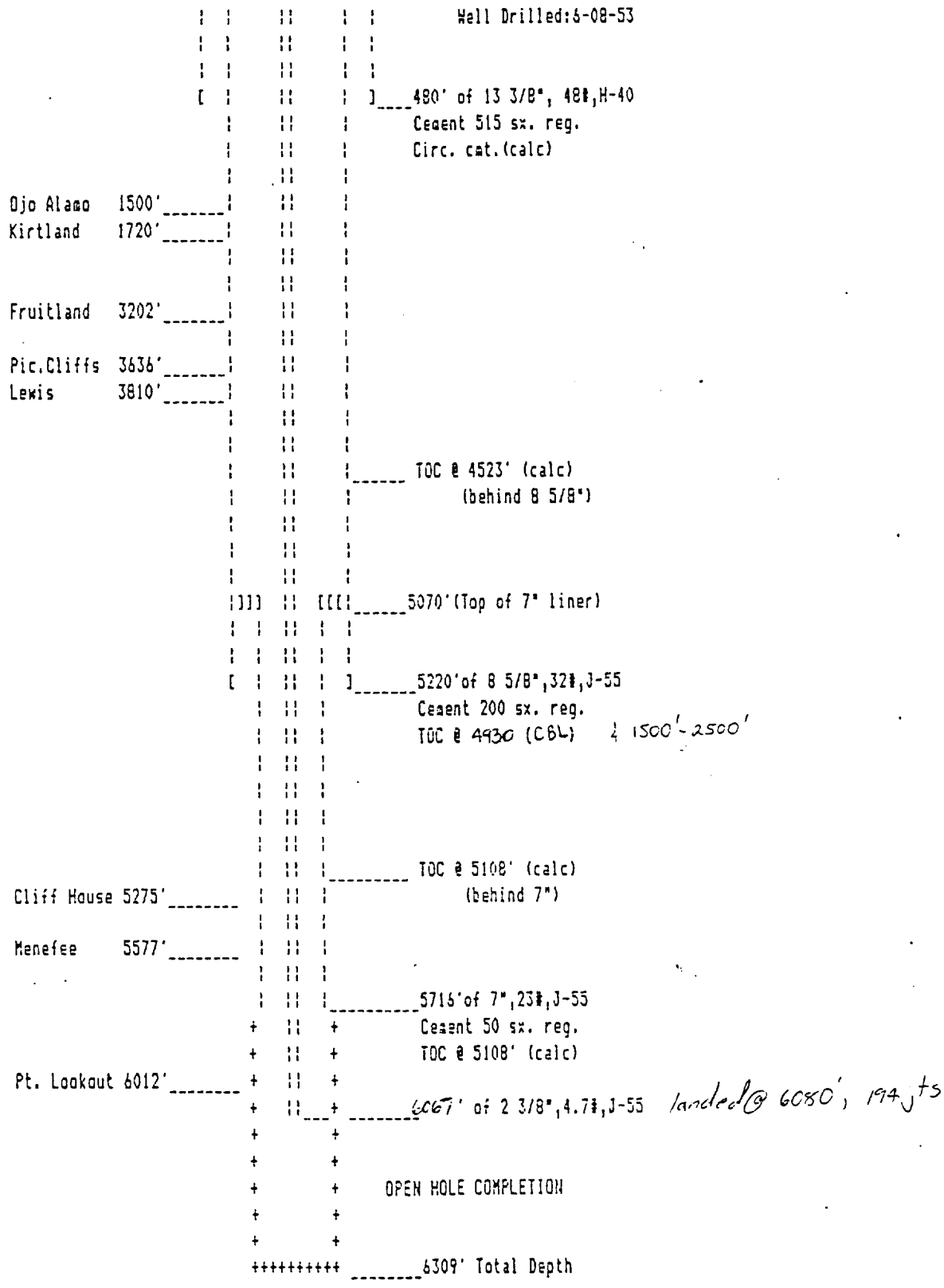
24. ND BOP and NU wellhead. Shut well in for buildup.

25. Cleanup location, cover pit and release rig.

Stergie Katirgis
Sr. Engineer

7-09-90

NORTHWEST PIPELINE CORPORATION
Cox Canyon #1 (MesaVerde)
SW/4,Sec.16,T32N,R11W
"Wellbore Diagram"



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