State of New Mexico
Energy, Minerals and Natural Resources Dept.
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

WELL API NO.: 30-045-27341

5. Indicate Type of Lease State: X Fee:

6. State Oil & Gas Lease No.: E-178-1

7. Lease Name/Unit Agrmnt Name: N.E. Blanco

8. Well No.: 502

9. Pool Name or Wildcat: Wildcat-Morrison-Entrada

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.)

1. Type of Well: oil well ____ gas well X other ____

2. Name of Operator: Blackwood & Nichols Co., Ltd.

3. Address of Operator: P.O. Box 1237, Durango, CO 81302-1237

4. Well Location
Unit Letter G :1650 Feet From The North Line and 1480 Feet From the East Line
Section 32 Township 31N Range 7W NMPM San Juan County

10. Elevation (Show wheter DF, RKB, RT, GR, etc)
6370' GL

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

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
____ Perform Remedial Work	____ Remedial Work
____ Temporarily Abandon	____ Commence Drilling Opns.
____ Pull of Alter Casing	____ Casing Test and Cement Job
____ Plug of Abandon	____ Other:
____ Change Plans	
X Other: Completion	

____ Altering Casing
____ Plug and Abandonment

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DIST. 3

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.

1-03-90 Move in, rig up. Nipple up 5000 psi BOP. TIH with bit no. 1, 6-1/8".

1-04-90 Pick up tubing. Tag DV tool in 7" casing at 7342'. Drill 3' cement and DV tool.

1-05-90 Clean out to 8849', hard cement. Drill cement to 8990'; PBTD - 8990'.
Circulate hole clean with water.

1-06-90 Run GR-CCL-CBL logs from WLTD - 8996'. Pressure test 7" casing to 6000 psig - held OK for 15 minutes.

TIH with 3-1/2" tubing. Swab casing fluid level down to 3000' to be able to perforate underbalanced.

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

Signed: William F. Clark Title: OPERATIONS MANAGER Date: 10 April 90

WILLIAM F. CLARK Phone: (303) 247-0728

(This space for State Use)

APPROVED BY Original Signed by FRANK T. CHAVEZ TITLE SUPERVISOR DISTRICT # 3 DATE APR 14 1990

CONDITIONS OF APPROVAL, IF ANY:

1-07-90 Run 3-1/8" select fire gun. Perforate Entrada zone with one 0.38" hole at: 8786', 8790', 8794', 8806', 8810', 8814', 8818', 8822', 8826', 8830', 8846', 8859', 8870';, 8879', 8887', and 8899', for a total of 16 holes.

Pick up Baker 7" packer and TIH with 3-1/2" tubing. Set open ended tubing at 8743' and packer at 8705'.

Rig up and swab.

1-08-90 Acid break down of Entrada perforations from 8786' to 8899'. Pump 2 Bbls water then 500 gal. (12 Bbls) 7-1/2% HCl at 3 BPM at 0 psig. Then pumped 86 Bbls of water as flush. Break down formation with 3450 psig at 1 BPM, before acid on perfs - 2000 psig at 2.5 BPM, after acid on perfs - 1000 psig at 3 BPM.

Total load - 98 Bbls of fluid. Job complete at 9:00 a.m., 1-07-90. ISIP - 600 psig. 5 minutes shut in - 500 psig. Rig down Smith.

Flow well back to tank. Rig up and swab 47 Bbls of fluid.

1-09-90 Continued swabbing. Made 14 runs and recovered only 8 Bbls of fluid. Final fluid level at 8700' (packer) and last 2 runs were dry. Cumulative volume since acid break-down - 101 Bbls which is 3 Bbls over load of 98 Bbls.

1-10-90 Swabbing to 8700', recovered 0 Bbls; wait 2 hours for fluid entry. Swab run to 8700', no fluid recovery; wait 2 hours for fluid entry. Swab run to 8700', no fluid recovery. Rig down swabbing equipment.

Rig up to acidize and frac the Entrada formation from 8786' to 8899'. Acidize with 1500 gal. of 7-1/2% HCl and 32 7/8" 1.3 s.p. RCN ball sealers. Pump acid @ 17 BPM, acid on formation, pump rate 8 BPM, increase rate to 9 BPM at end of flush. Moderate ball action. Pressured up to 5500 psig, wait 1 minute, bleed off to 4100, bump up to 5500, bleed off to 580 in 10 minutes. Flow balls off perfs.

Unseat 7" Retreivomatic packer, run 4 stands of 3-1/2" tubing and knock balls off perfs with packer. POOH with tubing and packer. Install WSI tree saver.

Entrada Stimulation:

Treatment summary: pumped a total of 85,848 gal. 40# gel and 29,106 gal. of slickwater and 100,500# of 20/40 mesh sand. Average treatment: 33.3 Bbls @ 2900 psi. ISIP = 1000 psi. 15 minute shut in - 800 psig. Job complete at 1:30 a.m., 1-10-90. Shut in 6 hours for gel to break.

1-11-90 Flowed well back through 1/4" and 1/2".

Picked up 2-7/8" notched collar and seating nipple and TIH.

Found sand at 8846'; Entrada perfs from 8786' to 8899'. Circulated out sand to PBTD at 8996'. Circulated hole clean, 2 hours.

Step rate test of Entrada perforations from 8786' to 8899'

1-12-90 Pumped 363 Bbls fresh water with 1% KCl. ISIP - 950 psig; 5 minutes - 830; 10 minutes - 760; 15 minutes - 760 psig.

Set 7" bridge plug on wireline at 8660'. Pressure tested 7" casing to 2000 psig - held OK. Perforated Bluff formation with a 0.42" hole at: 8514', 8518', 8522', 8526', 8530', 8534', 8538', 8545', 8550', 8554', 8558', 8562', 8568', 8572', 8576', 8580', 8592', 8596', 8600', 8604', 8608', 8612', 8616', 8620', 8627', and 8634' for a total of 26 holes.

Picked up 7" Baker packer and set at 8460'. Swabbed 3-1/2" tubing.

1-13-90 Swabbing the Bluff formation to retrieve a water sample. Made 12 runs and recovered 139 Bbls water.

Acidize Bluff formation perfs from 8514' to 8634'. Break down formation with 2200 psi; establish rate of 20 BPM at 5000 psig, pump 1500 gal. 7-1/2% HCl and 45 1.3 s.g. RCN ball sealers. Acid on formation at 7 BPM @ 2200 psig; good ball action. Pressure up quickly to 6400 psig. Surge balls off perforations. Shut down. ISIP = 5500. Pressure climbed up to 5970 psi. Surge pressure again, pressure stabilized at 5600 psi. Surge balls off, pump acid away @ 1400 psi. and 5 BPM. ISIP = 1400, bled down to 0 in 15 minutes. Rig down Smith Energy.

Release 7" packer at 8479'; pick up 7 stands 3-1/2" tubing and knock balls off perfs. Tag BP at 8660'; circulate 18 balls out. POOH.

Rig up. To frac Bluff formation. Frac'd Bluff perforations from 8514' to 8634'.

Treatment summary: pumped a total of 113,000 gal. of 40# gel, 157,000# 20/40 Brady sand; 35,000 gal. 40# linear gel pad, 13,692 gal. slickwater, 1%. Average treatment psi 2600, rate 58 BPM; ISIP - 1790. 5 minutes - 1750; 10 minutes - 1610. Shut in 4 hours for gel to break. The hydraulics on the blender went out, had to cut job short by 100,000# sand. Job complete at 6:00 a.m., 1-13-90.

1-14-90 Flow back after first frac of Bluff. TIH and tag sand at 8520', circulate and clean out 140' of sand. Circulate hole 1 hour.

1-15-90 Rigged up Bluff to frac.
Treatment Summary: 63,589 gals of 40# linear gel, 140,000# 20/40 Brady sand, 20,000 gals 1% KCl water. Average treatment - 59 BPM at 2850 psig. ISIP - 2200 psig, 15 minute shut in - 2000. Job completed 12:00 noon 1-14-89. Shut well in for 6 hrs for gel to break; 1100 psig.

Flowed well back through 1/4" choke. Flowed back 765 bbls of fluid.

1-16-90 TIH and found sand after second Bluff frac at 8540'; circulated hole clean down to bridge plug at 8660'. Rigged up to step rate test the Bluff.

Injected 310 bbls 1% KCl water.

Flowed well back after shut in.

1-16-90 Rigged up wireline and set 7" bridge plug at 8500'. Pressure tested plug to 2000 psig - held ok. Perforated Lower Morrison zones with 0.42" holes at: 8300, 8304, 8307, 8344, 8348, 8352, 8356, 8360, 8410, 8413, 8417, 8421, 8437, 8440, 8444, 8452, 8456, and 8460' for a total of 16 holes.

1-17-90 Acidize and frac the Lower Morrison perforations from 8300' to 8460'. Establish injection rate of 36 Bbls at 4600 psi. Break down pressure at 3200 psi. Acidize with 1500 gal. of 7-1/2% HCl and 30 1.3 s.g. 7/8" RCN ball sealers. Pump acid at 9 BPM. Increase to 19 BPM at end of flush. Fair ball action. Pressure up to 5000 psi. Bleed off slowly. Surge ball sealers off perforations. Bleed off pressure.

Frac, Lower Morrison. Treatment summary: pumped a total of 88,000 gal. of 40# gel and 3100 gal. 1% KCl water as flush. Did not complete flush. 100,000# 20/40 sand. Calculated sand in formation 76,000#. Average treatment: 3300 psi @ 38 BPM. ISIP = N/A. Screened out, 15 minutes @ 2000 psi. Screen off at 5400 psi. Unable to pump schedule, short 13,310 gal. gel and 79,000# 20/40 sand. Job complete at 11:55 a.m. on 1-16-90.

Shut in well for 4 hours. Flowed well back through 1/2" choke. Picked up 3-1/2" notched collar and TIH with tubing. Found sand at 7356'; rigged up and washed down to plug at 8500'.

1-18-90 Circulated hole clean at 8500'. Rigged up for step rate test of Lower Morrison perforations from 8300' to 8460'.

Performed step rate test; note, results will be reported after the bottom hole pressure bomb is read. Pumped a total of 382 bbls of 1% KCl water. ISIP - 2900 psig, 15 minutes -1050 psig.

Flowed well back slowly and recovered 239 bbls. Set bridge plug at 8350' and pressure tested to 2000 psig for 15 minutes - held OK.

Perforated Upper Morrison zones with one 0.42" hole at 8064, 8068, 8072, 8076, 8080, 8084, 8099, 8103, 8107, 8111, 8211, 8215, 8223, 8235, 8256 and 8260' for a total of 16 holes.

Picked up 7" Baker packer and set at 8037'. Rigged up to swab Upper Morrison perforations. Made 12 runs and recovered 110 bbls of fluid; final fluid level at 2500'.

1-19-90 Acidize Upper Morrison perfs from 8064' to 8260' down 3-1/2" tubing. Pressure test lines to 5500 psi.

Acidize the Upper Morrison with 1500 gal. of 7-1/2% HCl and 32 RCN 1.3 s.g. ball sealers. No break-down pressure, establish rate of 20 BPM @ 5400 psig then pump acid and balls at 8 BPM @ 3000 psig. Flush at 10 BPM @ 3600 psig; good ball action. Ball off at 5400 psig.

Bleed pressure off tubing, release packer and pick up 3 stands and TIH. Knock balls off perfs. TOH. Nipple down stripper head and rig up frac head. Frac the Upper Morrison as follows:

Job summary: All water is from Navajo Lake, 1% KCl added. Pumped a total of 17,100 gal. of slickwater, 15,000 gal. 40# linear gel pad, 68,000 gal. 40# linear gel frac fluid, and 6,972 gal. slickwater

1-19-90 (cont) flush. 135,300# 20/40 mesh sand. Average treating pressure 3500 psi @ 38 BPM. Screened formation off leaving 21,000# 20/40 sand in pipe and 5,988 gal. flush. No ISIP. 15 minutes - 3800 psig. Shut well in for 4 hours for gel to break. Job complete 1:42 p.m., 1-18-90.

Flowed well back on 1/4" choke then 1/2" choke at 2000 psig. TIH with 3-1/2" tubing and found sand at 7807'. Wash out sand and gel down to bridge plug at 8290' (483'). Circulate hole clean then short trip tubing. TIH to 8289' and circulate hole.

1-20-90 Step rate test of Upper Morrison perfs from 8064' to 8260'. Pumped a total of 438.5 Bbls of water. Maximum treating psi was 3210. ISIP - 2800 psig; 5 minutes - 2020; 10 minutes -1750; 15 minutes - shut in 1550 psig. Total load 438.5 Bbls.

Flowed well back after step rate test. Picked up mill, and TIH to 8290'. Started milling on first plug at 8290'.

1-21-90 Milling on pieces of first bridge plug at 8500' on second bridge plug. Mill up second bridge plug at 8500' and circulate and chase junk down hole to 8700'. Milling on junk and third bridge plug at 8700'.

1-22-90 Milled bridge plug at 8700' and chased junk to PBTD at 8998'. Pumped step rate test into Morrison, Bluff, and Entrada perforations from 8064'. to 8899'. Pumped 691 Bbls 1% KCl water. Maximum rate 17.7 BPM at 1400 psig. ISIP - 1100; 5 minutes 810; 10 minutes - 660; 15 minutes, shut in - 580 psig. Observed fall off for 4 hours.

Picked up 6-1/8" bit and 7" casing scraper. TIH to 8998' - no fill. Circulating hole.

1-23-90 Circulate hole, POOH laying down 3-1/2" tubing, work string. Unload 3-1/2" tubing off trucks. Pick up 7" Otis P.L. Packer and 3-1/2" 9.30# internally plastic coated tubing and trip to 8044'. Clean pit and mix corrosion inhibitor and bactericide chemicals.

1-24-90 Set Otis packer on 3-1/2" tubing at 7982'. Rigged up wireline and set tubing plug in X nipple at 7983'. Pressure tested tubing to 2000 psig - held OK. Recovered tubing plug and rigged down wireline.

Jayed off packer and circulated above packer with treated water, corrosion inhibitor, bactericide and oxygen scavenger; jayed onto packer. ND BOPs and landed tubing donut. NU wellhead.

Pressure tested 7" x 3-1/2" annulus to 2000 psig for 30 minutes - held OK. This test was witnessed by Mr. L. Cunningham of the OCD.

Ran 261 joints (8044.02') 3-1/2" 9.3# J-55 EUE USS new tubing which has ICO Type SC-650 internal plastic coating; Otis 7" PL packer (5.7') set in 46,000# compression at 7982' with a 2-7/8" wireline guide (0.45') on bottom of the packer. Above the packer is an Otis On/off tool (1.35') and an Otis X nipple, 2.313" ID, set at 7983' then a 2-7/8" x 3-1/2" crossover (0.90'). Note Otis packer has a 60,000# shear release.

Released rig at 5:00 pm on 1-23-90.

1-26-90 Step Rate Tests Summary

Entrada - Perforations: 8786' to 8899'

Step	Rate	Tubing	Casing (Note, no BHP)
1	2.0	540	440
2	2.5	630	520
3	3.0	730	580
4	4.0	850	625
5	5.0	1000	740
6	6.2	1130	880
7	8.3	1400	1020
8	9.4	1540	1100

Pumped 363 Bbls fresh water with 1% KCl down 3-1/2" tubing set at 8764'. ISIP - 950 psig; 5 minutes - 830; 10 minutes - 760; 15 minutes - 760 psig. Job complete 1-11-90.

Bluff - Perforations: 8514' to 8634'

Step	Rate (BPM)	Tubing Pres.	Casing Pres.	Bottomhole Pressure
1	1	390	260	3945.0
2	2	520	480	4076.5
3	3	760	710	4204.9
4	4	820	820	4318.0
5	5	1000	990	4492.4
6	6	1160	1080	4654.4
7	7	1280	1180	4813.5
8	8	1450	1330	4960.2
9	9	1590	1410	5049.2
10	10	1730	1530	5172.3

Pumped 310 Bbls of 1% KCl water down 3-1/2" x 7" annulus. Tubing set at 8490'. ISIP - 1400 psig; 5 minutes - 1190 10 minutes - 1050. Job complete 1-15-90.

Morrison - Perforations: 8300' to 8460'

Step	Rate (BPM)	Tubing Pres.	Casing Pres.	Bottomhole Pressure
1	0.5	400	320	3961
2	1.0	600	550	4180
3	1.5	900	800	4504
4	2.0	1280	1240	4862
5	3.0	1950	2010	5556
6	4.0	2600	2710	6200
7	5.0	3000	3120	6313
8	6.0	3050	3200	6663
9	7.0	3120	3290	6759
10	8.0	3250		6880

Pumped 382 Bbls of 1% KCl water down 3-1/2" x 7" annulus. Tubing set at 8274'. ISIP - 2900 psig; 5 minutes - 2300; 10minutes - 2050; 15 minutes - 1910 psig. Job complete 1-17-90.

Upper Morrison - Perforations: 8064' to 8260'

Step	Rate (BPM)	Tubing Pres.	Casing Pres.	Bottomhole Pressure
1	1.0	380	380	3858
2	2.0	680	750	4221
3	3.0	1100	1150	4628
4	4.0	1500	1630	5091
5	5.0	1980	2150	5570
6	6.0	2600	2750	5757
7	7.0	2750	2930	6363
8	8.0	2840	3050	6593
9	9.0	3000	3210	6608

Pumped 439 Bbls of 1% KCl water down 3-1/2" x 7" annulus. Tubing set at 8058'. ISIP - 2800 psig; 5 minutes - 2020; 10 minutes - 1750; 15 minutes - 1550 psig. Job complete 1-19-90.

Morrison, Bluff, and Entrada Zones
Perforations from 8064' to 8899'
Pressure bomb set at 8900'

Step	Rate (BPM)	Casing (psig)	Bottomhole Pressure
1	2.0	70	3835
2	3.0	130	3900
3	4.0	220	3970
4	5.0	280	4040
5	6.0	350	4115
6	7.0	430	4195
7	8.0	600	4410
8	9.0	760	4518
9	10.0	780	4551
10	11.0	860	4574
11	12.0	950	4635
12	13.0	1040	4724
13	14.0	1140	4818
14	15.0	1210	4925
15	16.0	1310	4991
16	17.7	1400	5174

Pumped 691 Bbls of 1% KCl water down 7" casing. Maximum rate 17.7 BPM @ 1400 psig. ISIP - 1100 psig; 5 minutes -810; 10 minutes - 670; 15 minutes - 580 psig. Job complete 1-21-90.

Observed fall-off for four hours:

Delta Time (Hours)	Pressure (psig)
0.000	4592.60
0.083	4484.90
0.167	4414.70
0.250	4363.30
0.333	4330.50
0.417	4311.80
0.917	4227.50
1.417	4180.70
1.917	4152.70
2.417	4129.30
2.917	4110.60
3.417	4096.50
3.917	4087.20
4.417	4059.10