

3WD-339

BLACKWOOD & NICHOLS CO., LTD.

P.O. BOX 1237
DURANGO, COLORADO 81302-1237

(303) 247-0728

June 9, 1988

f.6

Mr. David Catanach
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: NMOCD Form 108
Northeast Blanco Unit No. 501
Morrison Entrada Salt Water Disposal
NW 1/4, Sec. 10, T30N, R7W
Rio Arriba County, New Mexico

Dear Mr. Catanach:

Attached is a copy of the required legal notice for the referenced application. Hopefully, with this, all the requirements are met. Sorry this was overlooked in the original application.

Thank you for your cooperation in this matter.

Sincerely,

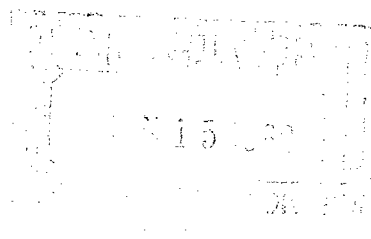
BLACKWOOD & NICHOLS CO., LTD.

William F. Clark

William F. Clark
Operations Manager

WFC:ew

Attachment

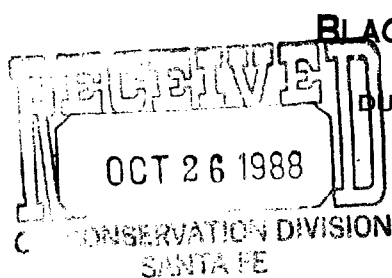


NOTICE

Intent to Dispose of water in the subsurface Blackwood Nichols Co., Ltd. proposes to dispose of produced water in the Entrada and Morrison formations. The injection well will be the Northeast Blanco Unit No. 501, located 1450' FNL & 790' FWL of Section 10, T30N, R7W, Rio Arriba Co., New Mexico. Water will be injected in intervals from 8000' to 9500'. Maximum rate and pressure are to be determined by step rate testing.

Questions should be addressed to Mr. Bill Clark, c/o Blackwood & Nichols Co., Ltd., PO Box 1237, Durango, Colorado, 81302-1237, or call 303-247-0728. Objections or requests for hearing by interested parties, must be filed with the New Mexico Oil Conservation Division, PO Box 2068, Santa Fe, New Mexico, 87501, within 15 days.

Legal No. 21901 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, Wednesday and Thursday, June 7, 8 and 9, 1988.



BLACKWOOD & NICHOLS CO., LTD.

P.O. BOX 1237
DURANGO, COLORADO 81302-1237

(303) 247-0728

October 21, 1988

Mr. William J. LeMay, Director
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

FILE SWD-339

Re: Order SWD-339
Northeast Blanco Unit
Well No. 501

Dear Mr. LeMay:

To fulfill the stipulation of the referenced order, Blackwood & Nichols hereby submits the following:

Item 1 - Casing Annulus Pressure Test, conducted on August 22, 1988.
A copy of the strip chart and the Halliburton job log are provided.

In summary, the 10 3/4" intermediate casing and the 7 5/8" liner down to the packer at 7375' were tested to 500 psig for 15 minutes with no leak off.

Items 2A

& 2B - Entrada Water Samples
Perforations 8702' to 8770'

<u>Item</u>	<u>CDS Lab</u>	<u>Tech Lab</u>
Date Sampled	8-1-88	8-2-88
TDS (ppm)	19,000	15,500

Items 3A

& 3B - Morrison Water Samples
Perforations: 8180' to 8350'

<u>Item</u>	<u>CDS Lab</u>	<u>Tech Lab</u>
Date Sampled	8-5-88	8-5-88
TDS (ppm)	35,100	35,600

Item 4 - Casing annulus was loaded with water soluble chemicals to provide corrosion and scale resistance on 8-23-88.

Mr. William J. LeMay
October 21, 1988
Page 2

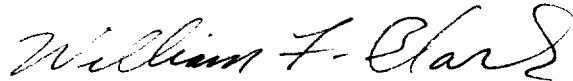
Blackwood & Nichols will contact the Aztec District Office of the Division to inspect the disposal facilities in the near future.

Also enclosed is a mud log from the No. 501 which is provided as evidence the Morrison and Entrada Formations do not contain commercial quantities of hydrocarbons.

If you have any questions about this material, please advise. We appreciate your cooperation in this matter.

Sincerely,

BLACKWOOD & NICHOLS CO., LTD.

A handwritten signature in cursive script, reading "William F. Clark". The signature is written in dark ink and is positioned above the printed name and title.

William F. Clark
Operations Manager

WFC:ew

cc: Aztec District Office

LEASE 5. W. P. 712120

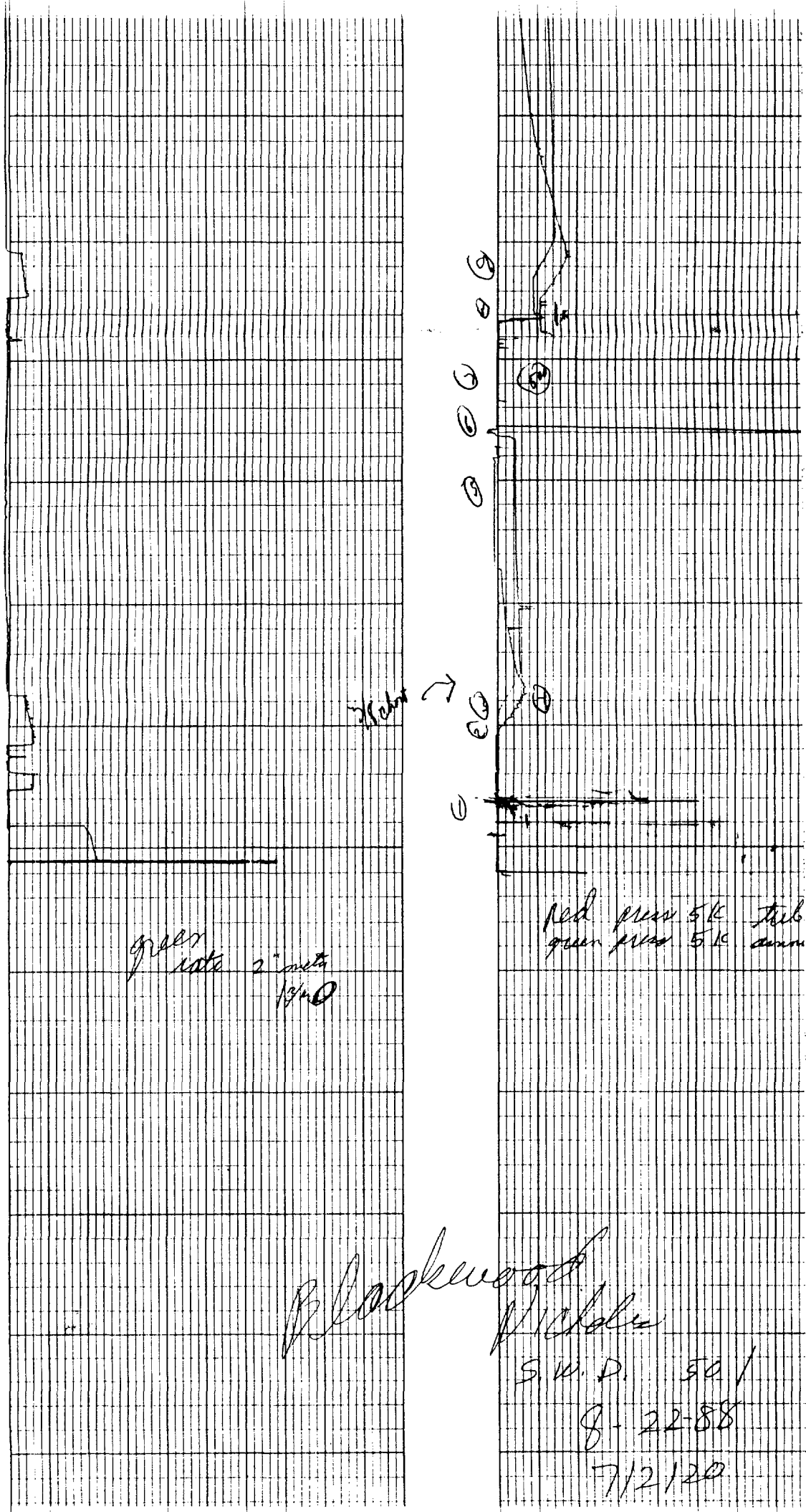
CUSTOMER BLACKWOOD & NICHOLS

JOB TYPE Press. test Circulate

DATE 8-22-88

FORM 2012 N-2

CHART NO.	TIME	RATE (BPM)	VOLUME (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
1	0645							on loc. setting meeting
2	0650							rig up
3	0745							Howco R.T.P.
4	0837							press test annul
5	0840							SD Seal Howco rig
6	0842+							press test ann
7	0845		100			750	600	SD. Hold press.
8	0852							Leak off at Howco 1" valve.
9	0857							Change scale on press
10	0901		20			750	850	press up on valve open annul
11	0928							press up
12	0929		10			1500	750	SD Hold rig to Tub.
13	0959					1200	350	press up tub
14	1051							Hold press
15	1053		40			1450		Blood off Tub rig off
16	1113		40					Tub. Stand By
17	1119		0					press up tub & seal only
18	1121					1350	0	SD. close in
19	1122					1350	500	press up on tub & seal
20	1139	8 1/2 minutes	80			1300	500	SD. rig to annul.
21	1228							press up annul.
22	1229	4				0	300	SD. Hold press.
23	1232	5				0	400	Blood off
24	1307	5.5	8350			0	450	Circulate hole: Vol. By Time
25	1317	5.8					500	" "
26	1344	5.3					500	" "
27	1348							Change tanks
28	1349	2	17310				250	slow rate
29	1418		50			1500	0	press rate
30	1421					1300	0	Empty
31	1425		25			1300	750	SD. rig to B.O.P.
32	1436					1300	750	SD. shut in rig to annul.
								press up annul
								SD. hold.
								blood off rig down. job complete



green rate 2' with 1340'

red press 5K still
green press 5K down

Blackwood
Nichols

S.W.D. 501

8-22-88

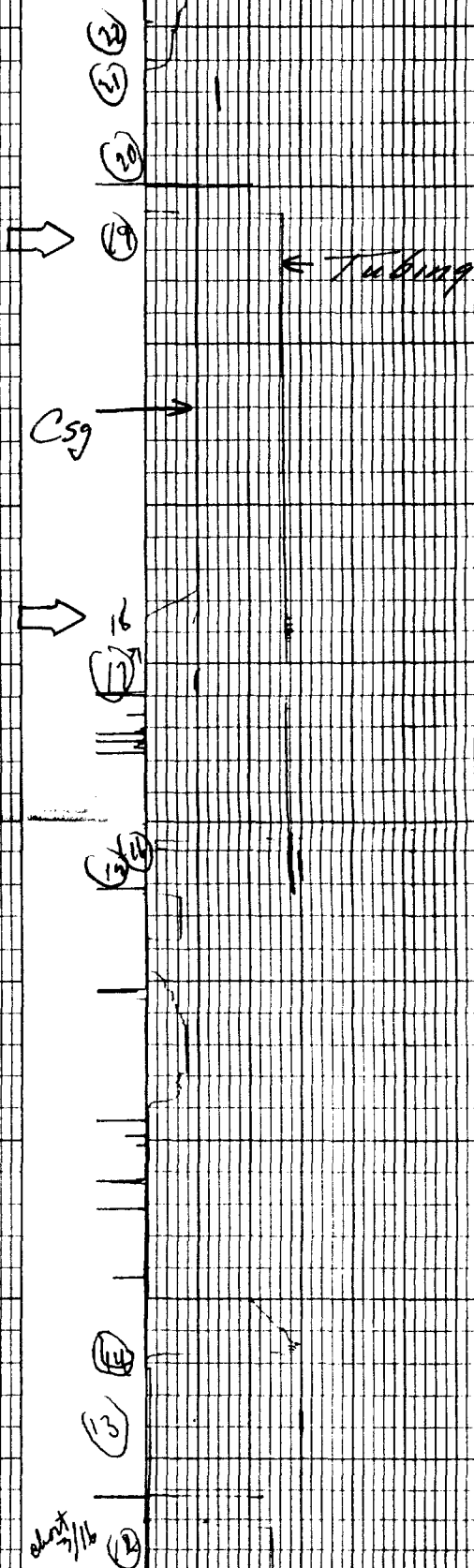
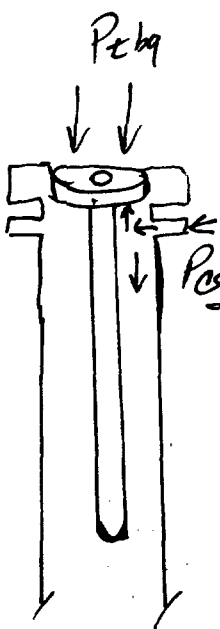
7/2/20

Pg 7/2

Note:

In Prior Attempts
the Casing slowly
bleed down.

Here the tubing
is landed with
the donut in place.
Tubing plugged and
pressured up
to 1300 psi. then
held in place
because the
well head does
not have lock
donut pins



75 SUTTLE STREET

ATTN: BILL CLARK

DATE SAMPLED: 8/1/88

PO BOX 2605

PO BOX 1237

WELL NAME: NEBU UNIT 501

DURANGO, CO 81302

DURANGO, CO 81302

LOCATION:

(303) 247-4220

(303) 247-0728

FORMATION: ENTRADA WATER

SAMPLED FROM:

CDS ID #: 1119

WELL ON/Off:

CONSTITUENT		ppm	epm
Sodium	Na +	4760	207.1
Potassium	K +	169	4.3
Calcium	Ca ++	1310	65.4
Magnesium	Mg ++	29.4	2.4
Iron Total	Fe++ & Fe+++	164	8.8

Item 2A
SWD-339

POSITIVE SUB-TOTAL	6432.4	287.9799
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Chloride	Cl -	8280	233.5
Carbonate	CO3 =	0	0.0
Bicarbonate	HCO3-	152	2.5
Hydroxide	OH -	0	0.0
Sulfate	SO4 =	2100	43.7

NEGATIVE SUB-TOTAL	10532	279.70928
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Total Dissolved Solids	19000 ppm
pH	5.07 units
Specific Gravity	1.01 @ 73 F.
Resistivity	45 ohm-m

APPROVED BY:



DR. JOE BOWDEN, DIRECTOR

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Results are based on analysis made at the time samples are received at the laboratory.



Item 2B
SWD-339

API WATER ANALYSIS REPORT FORM

Company	<i>Blackwood Nickel</i>		Sample No.	Date Sampled
Field	Legal Description		County or Parish	State
Lease or Unit	Well #	501	Depth	Formation
Type of Water (Produced, Supply, etc.)	Sampling Point	Water, B/D		
<i>Entrada</i>		Sampled By		

DISSOLVED SOLIDS

CATIONS

	mg/l	me/l
Sodium, Na (calc.)	<i>4237</i>	<i>185.0</i>
Calcium, Ca	<i>1162</i>	<i>58.0</i>
Magnesium, Mg	<i>247</i>	<i>22.0</i>
Barium, Ba		

ANIONS

Chloride, Cl	<i>8145</i>	<i>230.0</i>
Sulfate, SO ₄	<i>1600</i>	<i>33.3</i>
Carbonate, CO ₃	<i>0</i>	<i>0</i>
Bicarbonate, HCO ₃	<i>102</i>	<i>7</i>

Total Dissolved Solids (calc.)

15,500
100,500 +
1000

REMARKS & RECOMMENDATIONS:

Contact Bill Clark.

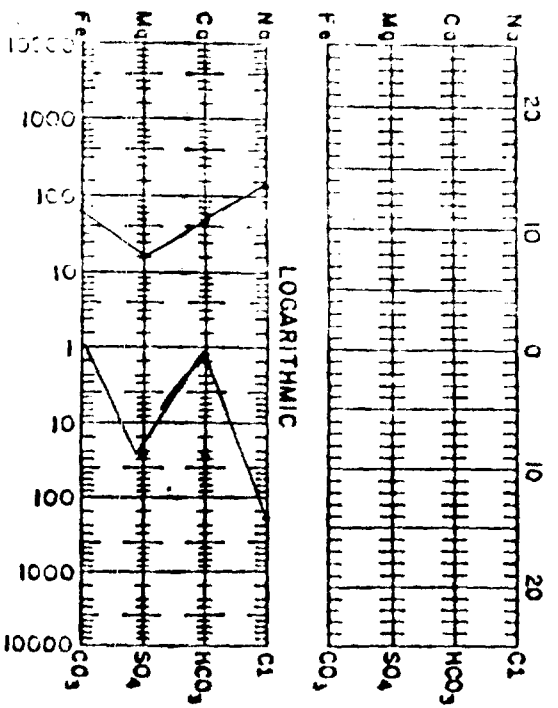
303-247-0708

OTHER PROPERTIES

pH *5.33*
Specific Gravity, 60/60 F. *1.007*
Resistivity (ohm-meters) *50*

WATER PATTERNS — me/l

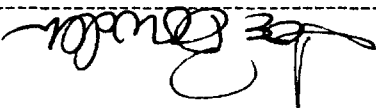
STANDARD



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DR. JOE BOWDEN, DIRECTOR

APPROVED BY:



Total Dissolved Solids		35100 ppm	6.71 units	1.023 @ 73 F.	24 ohm-cm
pH					
Specific Gravity					
Resistivity					
Chloride	Cl -	18200	513.2		
Carbonate	CO3 =	0	0.0		
Bicarbonate	HCO3-	537	8.8		
Hydroxide	OH -	0	0.0		
Sulfate	SO4 =	1750	36.4		
NEGATIVE SUB-TOTAL		20487	558.47643		
Sodium	Na +	10600	461.1		
Potassium	K +	1810	46.3		
Calcium	Ca ++	685	34.2		
Magnesium	Mg ++	65.9	5.4		
Iron Total	Fe++ & Fe+++	230	12.4		
POSITIVE SUB-TOTAL		13390.9	559.3565		

CDS ID #: 1120
WELL DN/Off:
SAMPLED FROM:
FORMATION: MORRISON PERFS.
LOCATION: DURANGO, CO 81302
PO BOX 2605
75 SUTILE STREET
ATTN: BILL CLARK
DATE SAMPLED: 8/1/88
WELL NAME: NEBU UNIT 501
PO BOX 1237
DURANGO, CO 81302
(303) 247-0728
(303) 247-4220



Item 3B
SMD-339

API WATER ANALYSIS REPORT FORM

Company <i>Shinohara</i>	Sample No.	Date Sampled <i>8/31/88</i>		
Field <i>Shinohara</i>	Legal Description	County or Parish <i>Shinohara</i>	State <i>TX</i>	
Lease or Unit <i>NE 34</i>	Well <i>501</i>	Depth <i>500</i>	Formation <i>Shinohara</i>	Water, B/D
Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By		

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	<i>11631</i>	<i>507.0</i>
Calcium, Ca	<i>441</i>	<i>33.0</i>
Magnesium, Mg	<i>49</i>	<i>8.0</i>
Barium, Ba		

ANIONS

Chloride, Cl	<i>19750</i>	<i>500.0</i>
Sulfate, SO ₄	<i>1710</i>	<i>33.0</i>
Carbonate, CO ₃	<i>8</i>	<i>0</i>
Bicarbonate, HCO ₃	<i>744</i>	<i>12.3</i>

Total Dissolved Solids (calc.) *35,600*

Iron, Fe (total) *Nil*
Sulfide, as H₂S *Nil*

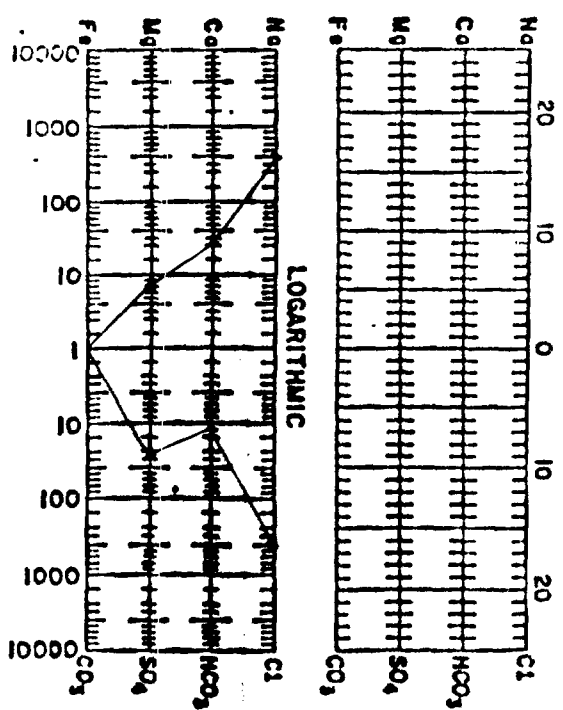
REMARKS & RECOMMENDATIONS:

OTHER PROPERTIES

pH	<i>4.34</i>
Specific Gravity, 60/60 F.	<i>1.013</i>
Resistivity (ohm-meters)	<i>3.2</i>

WATER PATTERNS — me/l
STANDARD

LOGARITHMIC



BLACKWOOD & NICHOLS CO., LTD.

P.O. BOX 1237

DURANGO, COLORADO 81302-1237

(303) 247-0728

Completion Report

Northeast Blanco Unit No. 501

LOCATION: 1450' F/NL, 790' E/WL
Sec. E-10-30N-7W
Rio Arriba County, New Mexico
Elevation: 6313' G.L.

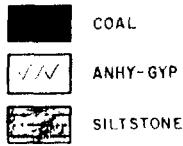
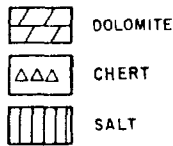
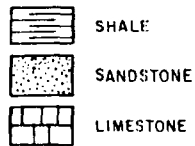
8-23-88 SICP = 0, SITP = 0. Pressure bleed off on tubing due to leak on tubing valve. Baker 7 5/8" packer set at 7375'. Rig up Howco. Pressure up annulus to 880 PSIG. After 30 minutes pressure decreased to 500 PSI. Pressure up tubing to 1500 PSIG, held ok. Annulus continued to leak off pressure with 1500 PSIG on tubing. Bleed off tubing and casing pressure, land tubing donut in tubing spool, pressure up to 1500 PSI between BOP pipe rams above tubing donut; pressure up annulus to 500 PSIG, held ok for 15 minutes. This final pressure test confirmed casing-annulus integrity. Jay-off top of lock set packer, circulate 411 bbls. of water and 40 gals. of Chaco Chemical's WT-682 packer fluid. Jay-back into packer and landed tubing donut in casing head. Pressure up to 1500 PSIG between BOP pipe rams and tubing donut. Pressure up annulus to 800 PSIG. Held ok for 10 minutes. Rig down Howco pump. Nipple down BOP. Nipple up wellhead. Tubing summary: 153 jts. of 3 1/2" 9.3#/Ft., N-80 EUE, ID plastic coated tubing with a Baker A-L2 (I.D. 3.00") lockset Baker plastic lined (PA-400) packer (47D) and a 5 1/2" x 3 1/2" x 2.75 FR on-off tool with a 3 1/2" Type F stainless steel seating nipple (2.75" I.D.) holding a FWE Blanking plug. Packer set at 7375' with 32,000# compression. Rig down Drake #21. Will move to the NEBU #413. Rig released 8:00 a.m. 8-23-88.

Company BLACKWOOD & NICHOLS Location 1450' N&790' / 4, Sec. 10,
T30N-R7E.
Well #501 County Rio Arriba
Field North East Blanco Unit State New Mexico
Elevation 6325' DF Drilling Fluid Chem gel.

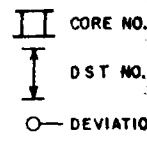
DEPTH LOGGED

DATE LOGGED 7/1/88 thru 7/8/88

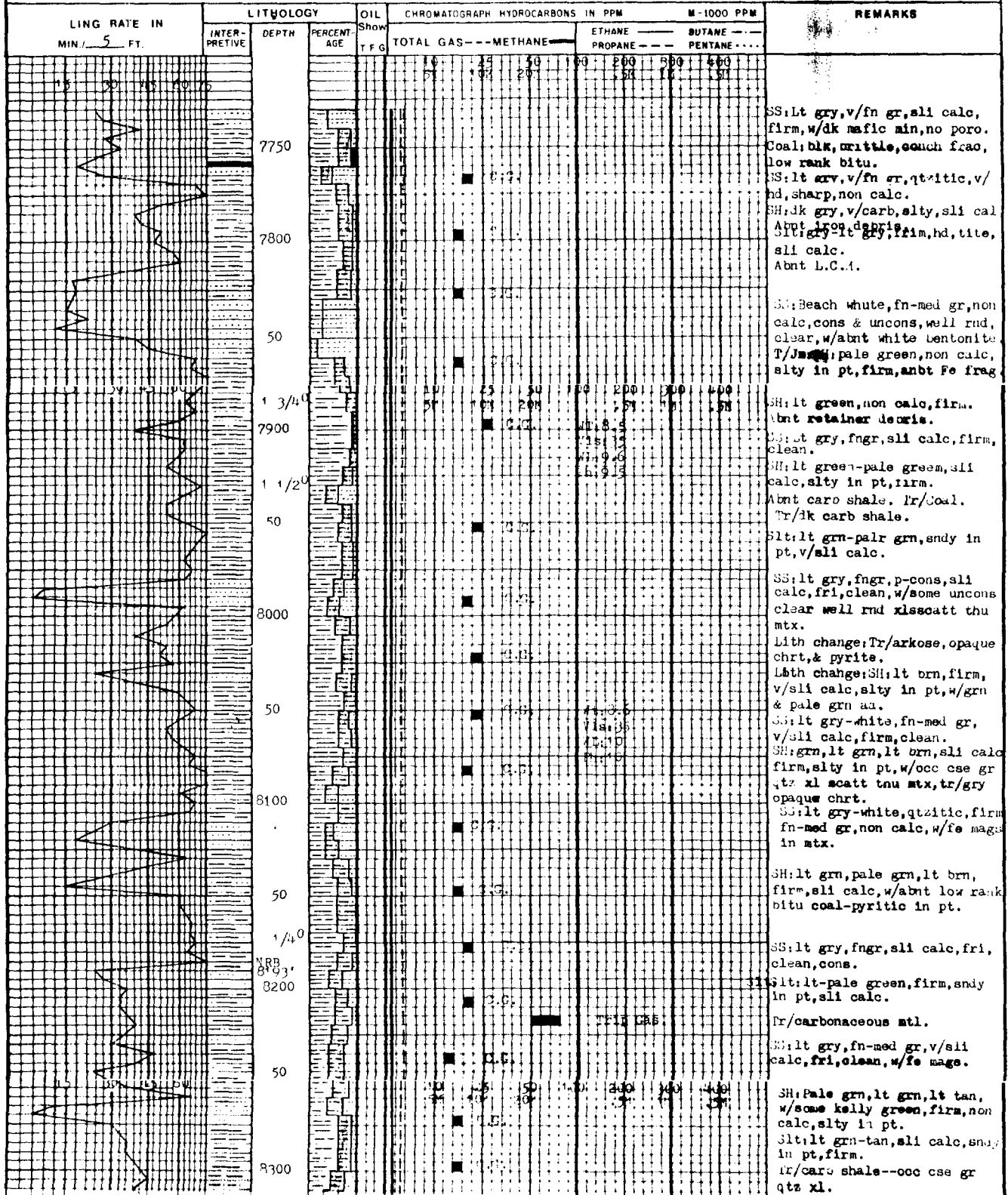
ENGINEERS A.D. STRICKLIN

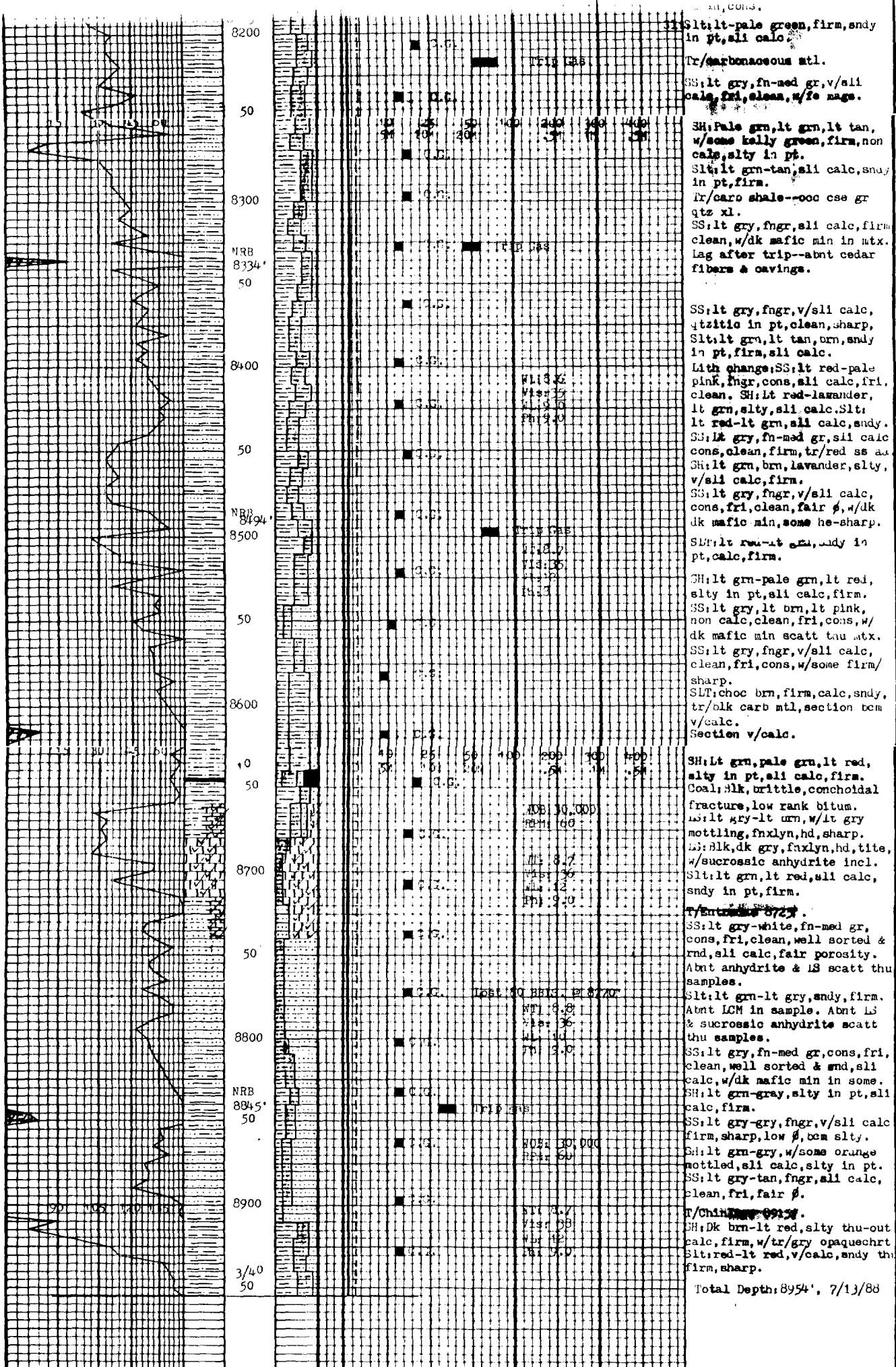


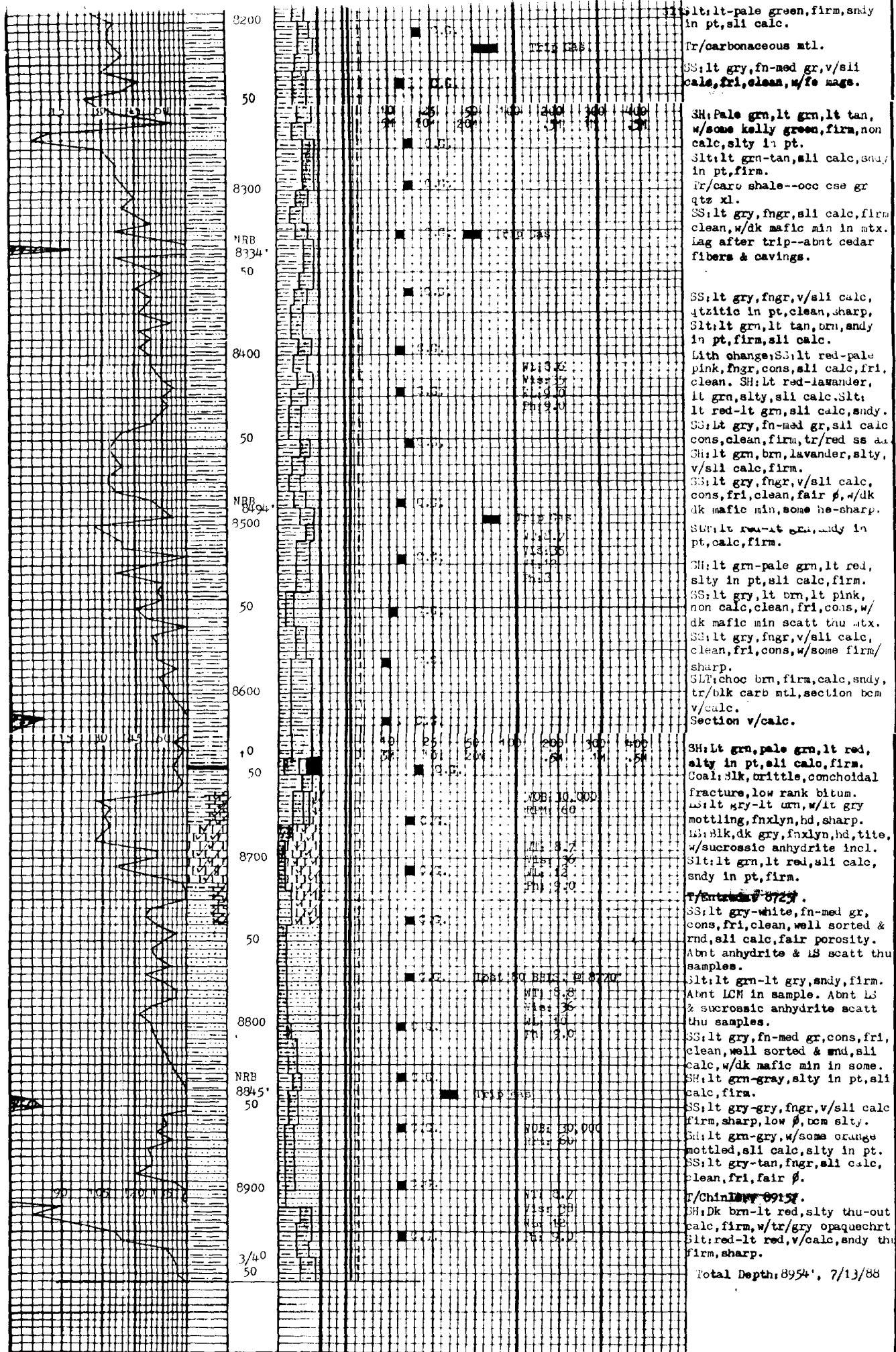
OIL SHOW



CG - CONNECTION GAS
NB - NEW BIT
NR - NO RETURNS
CO - CIRCULATE OUT
NS - NO SAMPLE
TG - TRIP GAS
DTG - DOWN TIME GAS







Silt:lt-pale green,firm,sndy in pt,sli calc.
 Tr/carbonaceous mtl.
 SS:lt gry,fn-med gr,v/sli calc,fri,clea,w/fe mags.
 SH:Pale grn,lt grn,lt tan, w/some kelly green,firm,non calc,slty in pt.
 Silt:lt grn-tan,sli calc,sndy in pt,firm.
 Tr/carb shale--occ cse gr qtz xl.
 SS:lt gry,fngr,sli calc,firm clean,w/dk mafic min in mtx. lag after trip--abnt cedar fibers & cavings.
 SS:lt gry,fngr,v/sli calc,qtzitic in pt,clea,sharp.
 Silt:lt grn,lt tan,brn,sndy in pt,firm,sli calc.
 Lith change:SS:lt red-pale pink,fngr,cons,sli calc,fri,clea. SH:lt red-lavander,lt grn,slty,sli calc.Silt:lt red-lt grn,sli calc,sndy.
 SS:lt gry,fn-med gr,sli calc cons,clea,firm,tr/red ss as SH:lt grn,brn,lavander,slty, v/sli calc,firm.
 SS:lt gry,fngr,v/sli calc, cons,fri,clea,fair ϕ ,w/dk dk mafic min,some he-sharp.
 Silt:lt red-lt grn,sndy in pt,calc,firm.
 SH:lt grn-pale grn,lt red, slty in pt,sli calc,firm.
 SS:lt gry,lt brn,lt pink, non calc,clea,fri,cons,w/ dk mafic min scatt thru mtx.
 SS:lt gry,fngr,v/sli calc, clea,fri,cons,w/some firm/ sharp.
 Silt:choc brn,firm,calc,sndy, tr/blk carb mtl,section bcm v/calc.
 Section v/calc.
 SH:lt grn,pale grn,lt red, slty in pt,sli calc,firm.
 Coal:Slk,brittle,conchoidal fracture,low rank bitum.
 Silt:lt gry-lt brn,w/lt gry mottling,fnxlyn,hd,sharp.
 SH:Slk,dk gry,fnxlyn,hd,tite, w/sucrosic anhydrite incl.
 Silt:lt grn,lt red,sli calc, sndy in pt,firm.
 Tr/carbonate 8723.
 SS:lt gry-white,fn-med gr, cons,fri,clea,well sorted & rnd,sli calc,fair porosity. Abnt anhydrite & IS scatt thru samples.
 Silt:lt grn-lt gry,sndy,firm. Abnt LCM in sample. Abnt LS & sucrosic anhydrite scatt thru samples.
 SS:lt gry,fn-med gr,cons,fri, clea,well sorted & snd,sli calc,w/dk mafic min in some.
 SH:lt grn-gray,slty in pt,sli calc,firm.
 SS:lt gry-gry,fngr,v/sli calc firm,sharp,low ϕ ,bcm slty.
 SH:lt grn-gry,w/some orange mottled,sli calc,slty in pt.
 SS:lt gry-tan,fngr,sli calc, clea,fri,fair ϕ .
 Tr/Chinle 8915.
 SH:DK brn-lt red,slty thru-out calc,firm,w/tr/gry opaquechrt
 Silt:red-lt red,v/calc,sndy thru firm,sharp.
 Total Depth:8954', 7/13/88

Company BLACKWOOD & NICHOLS **Location** 1450' N&790' / 4, Sec. 10,
T30N-R7W.
Well #501 **County** Rio Arriba
Field North East Blanco Unit **State** New Mexico
Elevation 6325' DF **Drilling Fluid** Chem gel.

DEPTH LOGGED
DATE LOGGED 7/1/88 thru 7/8/88

ENGINEERS J.D. STRICKLIN

 SHALE	 DOLOMITE	 COAL	 TRACE	 CORE NO.	CG - CONNECTION GAS
 SANDSTONE	 CHERT	 ANHY-GYP	 FAIR	 DST NO.	NB - NEW BIT
 LIMESTONE	 SALT	 SILTSTONE	 GOOD	 DEVIATION	NR - NO RETURNS
					CO - CIRCULATE OUT
					NS - NO SAMPLE
					TG - TRIP GAS
					DTG - DOWN TIME GAS

