

AUG 11 1989

IL CON. DIV.
DIST. 3

BENCH MARK GEOLOGICAL SERVICES

HYDROCARBON WELL LOG

ABBREVIATIONS

CO — Circulate Out
CG — Connection Gas
CB — Core Bit
DC — Depth Correction
DS — Directional Survey
DST — Drill Stem Test
DTG — Down Time Gas
FC — Filter Cake
LAT — Logged After Trip
NB — New Bit
NDR — No Data Recorded
NR — No Returns
PP — Pump Pressure
RPM — Rotary Speed
SPM — Pump Strokes
TG — Trip Gas
TGR — Trip Gas Recycle
Vis — Viscosity
WL — Water Loss
WOB — Weight on Bit
WI — Density Of Drill Fluid

LITHOLOGY MODIFIERS

// — Anhydritic
B — Bentonitic
L — Calcareous
■ — Carbonaceous, Coaly
Δ — Dolomitic
F — Fossiliferous
~ — Glauconitic
◊ — Oolitic
P — Pyritic
Λ — Siliceous

Cg
Ss
Silt
Sh
Coal
Chl
Salt
Anhy
Do
Ls
Igneous
Meta
Tuff
No Sample

OPERATOR Blackwood and Nichols

WELL NE Blanco Unit 465

FIELD _____

LOCATION Sec 1 T30N R8W

CO/STATE San Juan Co., New Mexico

ELEVATION KB 6448 ft. GL 6432 ft.

SPUD DATE _____

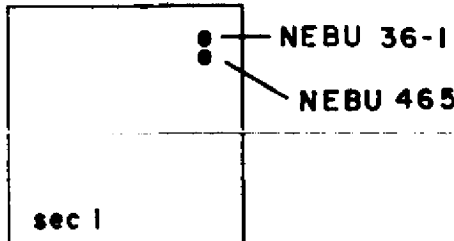
INTERVAL LOGGED 3132 - 3339 ft.

DATE LOGGED 8/8/89

LOGGING GEOLOGISTS Randy Laney, Danny Wyckoff

INSTRUMENTATION FID Chromatograph and total gas detector

WELL LOCATION 1020/N 780/E



LEGEND — GAS CURVES

TOTAL GAS	T
METHANE	1
ETHANE	2
PROPANE	3
ISO & N-BUTANE	4
OIL INDICATOR $\frac{C_2 + C_4}{C_1}$	0

HYDROCARBON ANALYSIS

TOTAL GAS			Reported in Units	
10	100	1000	10	100
GAS CHROMATOGRAPHY			Reported in PPM	
100	1000	10000	100	1000
OIL INDICATOR			Dimension Less	
0.01	0.1	1.0	0.01	0.1

RATE OF PENETRATION

Min./Ft.

Porosity

CON
CORE
LOG

DEPTH

CON
CORE
LOG

LITHOLOGY OBSERVED

%

Visual

Show

Lithology

Interp

Lithology
Descriptions
and Remarks

min/ft

2.5 5 7.5 10

WOB 8-10
RPM 70
PP 500

TD 3339'
14:00 hrs 8/8/89

7" casing set at 3132 ft. KB, 23 lb/ft.

10 100 1000 units
100 1000 10,000 ppm

5' samples caught 3132 - TD
Drilling with fresh water

100 1000 ppm
Depth of Coal Intervals

max Total Gas - 1702 units
C₁ - 74540 ppm

1575 units

1307 units

940 units

-C₃

-C₂

-C₁

3212-25

3226-29

3232-33

3245-53

3254-58

3260-65

3296-3306

3319-22

3323-32

Ss light grey, very fine grain, silty-grad- ing to siltstone, calc. cement, sub angular, sli. micaceous, tight, trace carbon. material some pyrite, NS

Shale & Coal Sh is very dark brown-brown black, rthy-sub resin., sub fis.-blocky, very carbonac., very silty in part. Coal is brown black, gen. sub vitreous sub blocky, moderately-very shaly, generally poor quality

Ss light-dark grey-brown, extremely fine grain-grad- ing to silt, firm, fair sorting, calcar., tight, abundant sec. calc veins & xls

Coal pred black w/ some brown-black, 50% w/ vitreous luster- rest sub vitreous, sub blocky frac., coal has fairly high % of dissem. to microlaminated brown carbonac. matter

Coal pred black, less brown-black, higher % vitreous coal than above, also more blocky texture and less dissem. carbonac matter than in above coal

Siltst med dark brown, sub platy-blocky, firm, generally not very carbonac., very finely sandy in part

Coal black & brown-black, 50% vitreous, sub blocky, large % of dissem. carbonac. matter, poorer quality than above coal

Coal pred all black, good blocky texture- some conchod. fracture soft-brittle, very small amount of includ ed carbonac. material, best looking coal seen in well