G01-60° 10' - 124° 15' K.B.2616.8 T.D.14606

A Riley's REPRODUCTION CATALOGUE NO.: 139077 E

# SYNERGETIC LOG SYSTEMS

SCHLUMBERGER

COMPANY PAN AMERICAN PETROLEUM CORPORATION

WELL PAN AM BEAVER YT-G01

FIELD WILDCAT

PROVINCE YUKON TERRITORIES

DATE 25 JULY 69

RUN NO. TWO

LOCATION 60° 10'N LAT 124° 15'W LONG
G-1 - BEAVER RIVER C-1

ELEV: KB 2616.8
GL 2600.3
DF

Other Presentations:

This Presentation For:

The well name, location and borehole reference data were furnished by the customer.

All interpretations are opinions based on inference from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 7 of our General Terms and Conditions as set out in our current Price Schedule.

This SYNERGETIC LOG presentation was produced using the POROSITY OVERLAY METHOD of interpretation.

**PURPOSE**

The porosity overlay is designed to identify lithology in a matrix comprised of more than one mineral. This information makes possible a more accurate porosity determination.

**METHOD**

The SNP log is recorded assuming a limestone matrix, with a duplicate curve recorded twelve porosity units to the right. The duplicate curve is referred to as the "Dolomite Limit". Bulk density from the FDC log is converted to limestone porosity and is superimposed on the SNP log.

**INTERPRETATION**

1) Limestone - Dolomite
   - a) Limestone. $\Phi_{roc} = \Phi_{snp}$. Porosities are read directly.
   - b) Dolomite. $\Phi_{roc} = \Phi_{snp} - 12$. SNP curve readings are converted to porosity using the dolomite scaler.
   - c) Limestone - Dolomite matrix. $\Phi_{snp} > \Phi_{roc} > \Phi_{snp} - 12$.

   Percentage of dolomite is interpolated from the relative displacement of $\Phi_{roc}$ from the $\Phi_{snp}$ line toward the dolomite limit line. Porosity is calculated by plotting the $\Phi_{snp}$ and the percent dolomite on the dolomite scaler.
2) Other minerals

   When minerals other than limestone and dolomite are present, interpretation is made using chart CP-1 of the interpretation manual.

Minerals can be identified according to the accompanying table:

**LITHOLOGY IDENTIFICATION SUMMARY**

A—Liquid Filled Pores — Additional requirements

Limestone $\Phi_{roc} = \Phi_{snp}$
Dolomite $\Phi_{roc} = \Phi_{snp} - 12$
Sand $\Phi_{roc} = \Phi_{snp} + 6$

B—No Porosity

| | | $\Phi_{snp}$ | $\Phi_{roc}$ | $\Delta T_{sonic}$ |
|---|---|---|---|---|
| Salt | $\Phi_{roc} = \Phi_{snp} + 39.5$ | 4 | 43.5 | 67 |
| Gypsum | $\Phi_{roc} = \Phi_{snp} - 28$ | 49 | 21 | 52.5 |
| Anhydrite | $\Phi_{roc} = \Phi_{snp} - 16$ | −1 | −17 | 50 |
| Sulphur | $\Phi_{roc} = \Phi_{snp} + 40$ | 0 | 40 | 122 |
| Shale | $\Phi_{roc} = \Phi_{snp} - N$ | (N is variable - confirm with gamma ray) | | |

**COLOR LEGEND**

☐ Sand
☐ Shale
☐ Limestone
☐ Dolomite
☐ Anhydrite
☐ Salt

Remarks:

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SCALED BY 6-13 DATE 4 30 70 (MO. DAY YR.)
FILMED BY H-2 DATE 5 6 70 (MO. DAY YR.)

Synerlog Beaver R YT G-01

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