

## CORE LABORATORIES, INC.

Petroleum Reservoir Engineering  
DALLAS, TEXASPage No. 1

## CORE ANALYSIS RESULTS

Company ATLANTIC-RICHFIELD COMPANY Formation GALLUP File RP-3-2677  
 Well HORSESHOE GALLUP NO. 284 Core Type 4" DIAMOND Date Report 8-26-74  
 Field HORSESHOE GALLUP Drilling Fluid WATER BASE (GELEK) Analysts W. DONOVAN  
 County SAN JUAN State NEW MEX. Elev. 5469' GL Location 2580' FSL & 295' FWL  
SEC. 35, T31N-R16W

## Lithological Abbreviations

|                                      |                                              |                                                                 |                                          |                                           |                                                     |                                         |                                                          |                                          |
|--------------------------------------|----------------------------------------------|-----------------------------------------------------------------|------------------------------------------|-------------------------------------------|-----------------------------------------------------|-----------------------------------------|----------------------------------------------------------|------------------------------------------|
| SAND - SD<br>SHALE - SH<br>LIME - LM | DOLOMITE - DOL<br>CHERT - CH<br>GYPSUM - GYP | ANHYDRITE - ANHY<br>CONGLOMERATE - CONG<br>FOSSILIFEROUS - FOSS | SANDY - SDY<br>SHALY - SHY<br>LIMY - LMV | FINE - FV<br>MEDIUM - MED<br>COARSE - CSE | CRYSTALLINE - XLN<br>GRAIN - GRN<br>GRANULAR - GRNL | BROWN - BRN<br>GRAY - GY<br>VUGGY - VGY | FRACTURED - FRAC<br>LAMINATION - LAM<br>STYLOLITIC - STY | SLIGHTLY - SL/<br>VERY - V/<br>WITH - W/ |
|--------------------------------------|----------------------------------------------|-----------------------------------------------------------------|------------------------------------------|-------------------------------------------|-----------------------------------------------------|-----------------------------------------|----------------------------------------------------------|------------------------------------------|

| SAMPLE<br>NUMBER | DEPTH<br>FEET | PERMEABILITY<br>MILLIDARCY | POROSITY<br>PER CENT | RESIDUAL SATURATION<br>PER CENT PORE |                | SAMPLE DESCRIPTION<br>AND REMARKS                                                                                          |
|------------------|---------------|----------------------------|----------------------|--------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------|
|                  |               |                            |                      | OIL                                  | TOTAL<br>WATER |                                                                                                                            |
|                  |               | (K <sub>a</sub> )          |                      |                                      |                | (CONVENTIONAL CORE ANALYSIS)                                                                                               |
| 1                | 1378-79       | 3.60                       | 8.8                  | 30.7                                 | 22.7           | SS-m gy, f gr, calc cmt, s&p, f gr<br>sh incl, f gr cht incl,                                                              |
| 2                | 79-80         | 2.00                       | 15.0                 | 26.0                                 | 24.7           | SS-m gy, f gr, calc cmt, s&p, tr f gr<br>sh incl, tr f gr cht incl,                                                        |
|                  | 1380-80.5     |                            |                      |                                      |                | SH-dk gy, slty, (NO ANALYSIS)                                                                                              |
| 3                | 1380.5-81     | <0.10                      | 7.7                  | 41.5                                 | 20.8           | SS-m gy, f gr, calc cmt, s&p, tr f gr<br>sh incl, tr f gr cht incl,                                                        |
| 4                | 81-82         | 0.50                       | 13.4                 | 43.3                                 | 20.9           | SS-m gy, f gr, calc cmt, s&p, tr f gr<br>sh incl, tr f gr cht incl, tr glauc, VF                                           |
| 5                | 82-83         | 0.50                       | 11.4                 | 30.7                                 | 32.5           | SS-m gy, f gr, calc cmt, s&p, tr f gr<br>sh incl, tr glauc, horz sh lam, VF                                                |
| 6                | 83-83.5       | 1.30                       | 11.5                 | 35.7                                 | 25.2           | SS-m gy, vf-f gr, calc cmt, s&p, tr f<br>gr sh incl, tr pyr, wvy sh lam, VF,<br>SH-dk gy, slty, (NO ANALYSIS)              |
|                  | 1383.5-84     |                            |                      |                                      |                |                                                                                                                            |
| 7                | 1384-85       | 2.80                       | 5.0                  | 14.0                                 | 50.0           | SS-m gy, vf gr, calc cmt, s&p, tr vf<br>gr sh incl, tr glauc, horz sh lam,<br>SH-dk gy, slty, (NO ANALYSIS)                |
|                  | 1385-90       |                            |                      |                                      |                |                                                                                                                            |
| 8                | 1390-91       | 0.20                       | 5.0                  | 10.0                                 | 40.0           | SS-m gy, m gr, p srted, calc cmt, s&p,<br>tr m-c sh incl, tr glauc,                                                        |
| 9                | 91-92         | <0.10                      | 2.7                  | 7.4                                  | 37.0           | SS-m gy, m gr, p srted, calc cmt, s&p,<br>tr m-c sh incl, tr glauc, tr pyr, chty,                                          |
| 10               | 92-93         | 0.30                       | 6.8                  | 13.2                                 | 69.1           | SS-m gy-gy brn, m gr, p srted, calc cmt,<br>s&p, tr m-c sh incl, tr glauc,<br>SH-dk gy, tr slty, tr sndy, (NO<br>ANALYSIS) |
|                  | 1393-96       |                            |                      |                                      |                |                                                                                                                            |
| 11               | 96-96.5       | <0.10                      | 6.1                  | 23.0                                 | 36.0           | SS-m gy, m gr, p srted, calc cmt, s&p,<br>tr m sh incl, tr glauc, tr cly,<br>SH-dk gy, tr slty, tr sndy, (NO<br>ANALYSIS)  |
|                  | 1396.5-98.5   |                            |                      |                                      |                |                                                                                                                            |
| 12               | 1398.5-99     | 0.20                       | 8.5                  | 22.4                                 | 47.0           | SS-m gy-gy brn, m gr, p srted, calc cmt,<br>s&p, tr m-c sh incl, tr glauc<br>SH-dk gy, tr slty, tr sndy, (NO<br>ANALYSIS)  |
|                  | 1399-1400.5   |                            |                      |                                      |                |                                                                                                                            |
| 13               | 1400.5-01     | 2.20                       | 6.2                  | 11.3                                 | 64.5           | SS-m gy, m gy, p srted, calc cmt, s&p,<br>tr m-c sh incl, tr glauc, tr cly,<br>SH-dk gy, slty, (NO ANALYSIS)               |
|                  | 1401-02       |                            |                      |                                      |                |                                                                                                                            |

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