Schlumberger

SIMULTANEOUS
# COMPENSATED NEUTRON-FORMATION DENSITY

COMPANY: ANSCHUTZ - NCRA - DOW CHEMICAL CO.
WELL: #1 JOHN W. PATTON
FIELD: WILDCAT
LOCATION: SEC. 20-62N-30W
COUNTY: GENTRY

COMPANY: THE ANSCHUTZ CORPORATION - NCRA - DOW CHEMICAL COMPANY
WELL: #1 JOHN W. PATTON
FIELD: WILDCAT
COUNTY: GENTRY STATE: MISSOURI
LOCATION: SW-NE 1980 FNL & 1980 FEL
Other Services: DIL
SEC 20 TWP 62N RGE 30W

Permanent Datum: GROUND LEVEL Elev. 960 EST.
Log Measured From: KB 5 Ft. Above Perm. Datum
Drilling Measured From: KB
Elev.: K.B. 965, D.F. ---, G.L. 960

| | |
|---|---|
| Date | 1-24-75 |
| Run No. | ONE |
| Depth—Driller | 2321 |
| Depth—Logger | 2315 (2315 STRAP) |
| Btm. Log Interval | 2314 |
| Top Log Interval | 212 |
| Casing—Driller | 8 5/8 @ 213 |
| Casing—Logger | 212 |
| Bit Size | 7 7/8 |
| Type Fluid in Hole | FGWM |
| Dens. / Visc. | 9.2 / 55 |
| pH / Fluid Loss | 10.0 / 6.8 ml |
| Source of Sample | CIRCULATED |
| Rm @ Meas. Temp. | 3.13 @ 68 °F |
| Rmf @ Meas. Temp. | 2.39 @ 66 °F |
| Rmc @ Meas. Temp. | 2.17 @ 88 °F |
| Source: Rmf / Rmc | M / M |
| Rm @ BHT | 2.42 @ 88 °F |
| Circulation Stopped | 1-24 1400 |
| Logger on Bottom | 1-24 1745 |
| Max. Rec. Temp. | 88 °F |
| Equip. / Location | 4571 / WICH |
| Recorded By | LANSENBACH |
| Witnessed By | EVERETT |

RELEASED JAN 31 1979 MO OIL & GAS COUNCIL

OGC # 20007-0075

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

| | |
|---|---|
| RUN NO. | ONE |
| Service Order No. | 21321 |
| Fluid Level | FULL |
| Salinity, PPM Cl. | 1800 |
| Speed - F.P.M. | 30 |
| **EQUIPMENT DATA** | |
| Dens. Panel | EA-281 |
| Dens. Cart. | EA-297 |
| Dens. Skid. | D-691 |
| Dens. Sonde | E-227 |
| Dens. Source | B-2605 |
| Dens. Calibrator | 272 |
| Neut. Panel | A-371 |
| Neut. Cart. | A-205 |
| Neut. Source | F-A289 |
| Neut. Calibrator | A- 63 |
| GR Cart. | JAA-259 |
| Memorizer Panel | B-118 |
| Tape Recorder (TTR) | --- |
| Depth Encoder (DRE) | --- |
| Pressure Wheel (CPW) | --- |
| Centralizers: Enter Spring, Standoffs, In-line, or None — Type / No. / S.O. — Inches | --- |
| **CALIBRATION DATA** | |
| GR BKG. CPS | 100 |
| GR Source CPS | 560 |
| GR Sens. - Col | --- |
| GR T. C. - Col | 6 |
| CNL Short Spacing - Before Log | 450 |
| CNL Long Spacing - Before Log | 198 |
| CNL Short Spacing - After Log | 450 |
| CNL Long Spacing - After Log | 198 |
| P' — Before Log | 400 |
| P'' — Before Log | 616 |
| P' — After Log | 400 |
| P'' — After Log | 616 |

SCALE CHANGES

| Type Log | Depth | Scale Up Hole | Scale Down Hole |
|---|---|---|---|
| | | | |

REMARKS:

LOGGING DATA

| DEPTH Top | DEPTH Bottom | CNP Porosity Scale | CNP Matrix | CNP Auto Corr. or Hole Size Setting | FDC Porosity Scale | FDC Grain Density | FDC Liquid Density | FDC Hole Fluid | FDC Sens. Logged | GR T.C. | GR Zero Div. Left | GR Scale Per 100 Div. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 210 | 2314 | 30/-10 | OH-LIME | AUTO CORR. | 30/-10 | 2.71 | 1.0 | LIQ. | -- | 2 | 0 | 150 |

All interpretations are opinions based on inferences 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.

COMPENSATED NEUTRON CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDED SENSITIVITY (THRU MEMORIZER IF USED)

| PANEL TEST | RATIO | OH POROSITY LS [X] | OH POROSITY SS | OH POROSITY DOL | CH POROSITY SS | CH POROSITY LS |
|---|---|---|---|---|---|---|
| 3. | 1 | 1.6 | 4.9 | -0.2 | 2.4 | 0.1 |
| 4. | 2 | 15.6 | 19.7 | 8.1 | 13.0 | 9.0 |
| 5. | 3 | 31.3 | 36.0 | 25.2 | 29.1 | 24.1 |
| 6. | 4 | 50.6 | 61.4 | 53.0 | 52.2 | 45.2 |

7. POROSITY NORMALIZED WITH CNB-A IN PLACE
7A. TOOL IN NCT-B
8. LOG POSITION WITH CNB-A IN PLACE
8A. LOG POSITION WITH TOOL IN NCT-B

| OH LS | OH SS | OH DOL | CH SS | CH LS |
|---|---|---|---|---|
| 18 | 22.2 | 10.4 | 15.3 | 11.2 |

RATIO (NORMALIZED) = 2.17 RATIO (NCT-B) RATIO LOG

FORMATION DENSITY COMPENSATED CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDER SENSITIVITY

PANEL TEST

| | POS | FDC LIQUID ρ | Δρ |
|---|---|---|---|
| 3. | # 1 | 2.92 | .00 |
| 4. | # 2 | 2.78 | +.14 |
| 5. | # 3 | 2.42 | -.10 |
| 6. | # 4 | 2.35 | .00 |
| 7. | # 5 | 2.08 | .01 |

8. MECHANICAL ZERO CALIPER
9. 8" RING
10. 12" RING
11. TOOL CALIBRATE #1 SET ρ = 2.50
12. TOOL CALIBRATE #2 SET Δρ = .00
13. LOG POSITION ρ = 2.59, Δρ = .015

GAMMA RAY CALIBRATION CODING

1. MECHANICAL ZERO
2. ELECTRICAL ZERO
3. RECORDER SENSITIVITY
4. MEMORIZER ADJUSTMENT
5. BACKGROUND
6. CALIBRATE - SOURCE IN PLACE

CALIBRATION RECORD

COMPANY ANSCHUTZ - NCRA - DOW CHEMICAL CO.
WELL #1 JOHN W. PATTON
FIELD WILDCAT
COUNTY GENTRY STATE MISSOURI

SCHL. FR 2314
SCHL. TD 2315
DRLR TD 2321
Elev: KB 965, DF ---, GL 960