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FLOPETROL JOHNSTON

Schlumberger

# technical report

COMPANY Tipperary Oil & Gas Corporation WELL (Abo) Jons State 4-#1 TEST NO. 2 8646' to 8686' COUNTY Lea STATE New Mexico

Field Report #54088E

REPORT NO: 54088E

# WELL PERFORMANCE TESTING™ REPORT

A Production System Analysis (NODAL™)
Based on Model Verified™ Interpretation

FLOPETROL JOHNSTON
Schlumberger

TEST DATE: Oct. 12, 1984

PAGE NO: 1

Company: Tipperary Oil & Gas Corporation

Well: Jons State 4-#1

## TEST IDENTIFICATION

| | |
|---|---|
| Test Type | MFE OH |
| Test No. | Two |
| Formation | Abo |
| Test Interval (ft) | 8446 to 8686 |
| Reference Depth | Kelly Bushing |

## WELL LOCATION

| | |
|---|---|
| Field | Wildcat |
| County | Lea |
| State | New Mexico |
| Sec/Twn/Rng | 4/17S/30E |
| Elevation (ft) | 3780 (Ground Level) |

## HOLE CONDITIONS

| | |
|---|---|
| Total Depth (MD/TVD) (ft) | 8686 |
| Hole Size (in) | 7 7/8 |
| Csg/Liner I.D. (in) | ---- |
| Perf'd Interval/Net Pay (ft) | -/4 |
| Shot Density/Diameter (in) | ---- |

## MUD PROPERTIES

| | |
|---|---|
| Mud Type | Fresh Water |
| Mud Weight (lb/gal) | 8.4 |
| Mud Resistivity (OHM-M) | 4.6 @ 58°F |
| Filtrate Resistivity (OHM-M) | ---- |
| Filtrate Chlorides (PPM) | 700 |

## INITIAL TEST CONDITIONS

| | |
|---|---|
| Initial Hydrostatic (psi) | 3792 |
| Gas Cushion Type | None |
| Surface Pressure (psi) | ---- |
| Liquid Cushion Type | None |
| Cushion Length (ft) | ---- |

## TEST STRING CONFIGURATION

| | |
|---|---|
| Pipe Length (ft)/I.D. (in) | 8173 / 3.83 |
| Collar Length (ft)/I.D. (in) | 439 / 2.25 |
| Packer Depth(s) (ft) | 8640 / 8646 |
| BH Choke Size (in) | 15/16 |
| Gauge Depth (ft)/Type | 8673 / J-200 |

## NET PIPE RECOVERY

| Volume | Fluid Type | Properties |
|---|---|---|
| 10 Feet | Drlg fluid | 700 PPM |
| | Slight Oil/cut | Res. 4.6 @58°F |
| | | |
| | | |
| | | |

## NET SAMPLE CHAMBER RECOVERY

| Volume | Fluid Type | Properties |
|---|---|---|
| (Trace) | Oil | |
| 2300 cc | Mud | |
| | | |
| | | |
| Pressure: --- | GOR: | GLR: |

## INTERPRETATION RESULTS

| | |
|---|---|
| Model of Behavior | |
| Fluid Type Used for Analysis | |
| Reservoir Pressure (psi) | |
| Transmissibility (md-ft/cp) | |
| Effective Permeability (md) | |
| Skin Factor/Damage Ratio | |
| Storativity ratio | |
| Interporosity Flow Coeff | |
| Distance To An Anomaly (ft) | |
| Radius of Investigation (ft) | |
| Potentiometric Surface (ft) | |

## ROCK/FLUID/WELLBORE PROPERTIES

| | |
|---|---|
| Oil API | |
| Basic Solids | |
| Gas Gravity | |
| Water Cut (%) | |
| Viscosity (cp) | |
| Total Compressibility (1/psi) | |
| Porosity (%) | |
| Reservoir Temperature (F) | 138 |

## PRODUCTION RATE DURING TEST:

COMMENTS: Both clocks stopped during the initial shut-in period.

TEST PHASE : FLOW PERIOD # 1

| TIME OF DAY HH:MM:SS | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|---|---|---|---|---|
| 19:43: 0 | 9-OC | 0.00 | 0.00 | 57 |
| 19:48: 0 | 9-OC | 5.00 | 5.00 | 58 |
| 19:53: 0 | 9-OC | 10.00 | 10.00 | 58 |
| 19:53:31 | 9-OC | 10.51 | 10.51 | 58 |

TEST PHASE : SHUTIN PERIOD # 1
FINAL FLOW PRESSURE [PSIA] = 58
PRODUCING TIME [MIN] = 10.51

| TIME OF DAY HH:MM:SS | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | DELTA P PSI | LOG HORNER TIME |
|---|---|---|---|---|---|---|
| 19:53:31 | 9-OC | 10.51 | 0.00 | 58 | 0 | |
| 19:54:31 | 9-OC | 11.51 | 1.00 | 63 | 5 | 1.061 |
| 19:55:31 | 9-OC | 12.51 | 2.00 | 65 | 7 | 0.796 |
| 19:56:31 | 9-OC | 13.51 | 3.00 | 67 | 10 | 0.654 |
| 19:57:31 | 9-OC | 14.51 | 4.00 | 70 | 13 | 0.560 |
| 19:58:31 | 9-OC | 15.51 | 5.00 | 73 | 15 | 0.492 |
| 19:59:31 | 9-OC | 16.51 | 6.00 | 74 | 17 | 0.440 |
| 20: 0:31 | 9-OC | 17.51 | 7.00 | 77 | 19 | 0.398 |
| 20: 1:31 | 9-OC | 18.51 | 8.00 | 79 | 21 | 0.364 |
| 20: 2:31 | 9-OC | 19.51 | 9.00 | 80 | 23 | 0.336 |
| 20: 3:31 | 9-OC | 20.51 | 10.00 | 82 | 24 | 0.312 |
| 20: 5:31 | 9-OC | 22.51 | 12.00 | 85 | 27 | 0.273 |
| 20: 7:31 | 9-OC | 24.51 | 14.00 | 88 | 31 | 0.243 |
| 20: 9:31 | 9-OC | 26.51 | 16.00 | 91 | 33 | 0.219 |
| 20:11:31 | 9-OC | 28.51 | 18.00 | 94 | 36 | 0.200 |
| 20:13:31 | 9-OC | 30.51 | 20.00 | 97 | 39 | 0.183 |
| 20:15:31 | 9-OC | 32.51 | 22.00 | 100 | 42 | 0.170 |
| 20:17:31 | 9-OC | 34.51 | 24.00 | 103 | 45 | 0.158 |
| 20:19:31 | 9-OC | 36.51 | 26.00 | 105 | 48 | 0.147 |
| 20:19:52 | 9-OC | 36.86 | 26.35 | 107 | 49 | 0.146 |

# * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 5408&E

COMPANY : TIPPERARY OIL & GAS CORPORATION
WELL : JONS STATE 4 #1

INSTRUMENT # : J-371
CAPACITY [PSI] : 6400.
DEPTH [FT] : 8673.0
PORT OPENING : OUTSIDE
TEMPERATURE [DEG F] : 138.0

## LABEL POINT INFORMATION

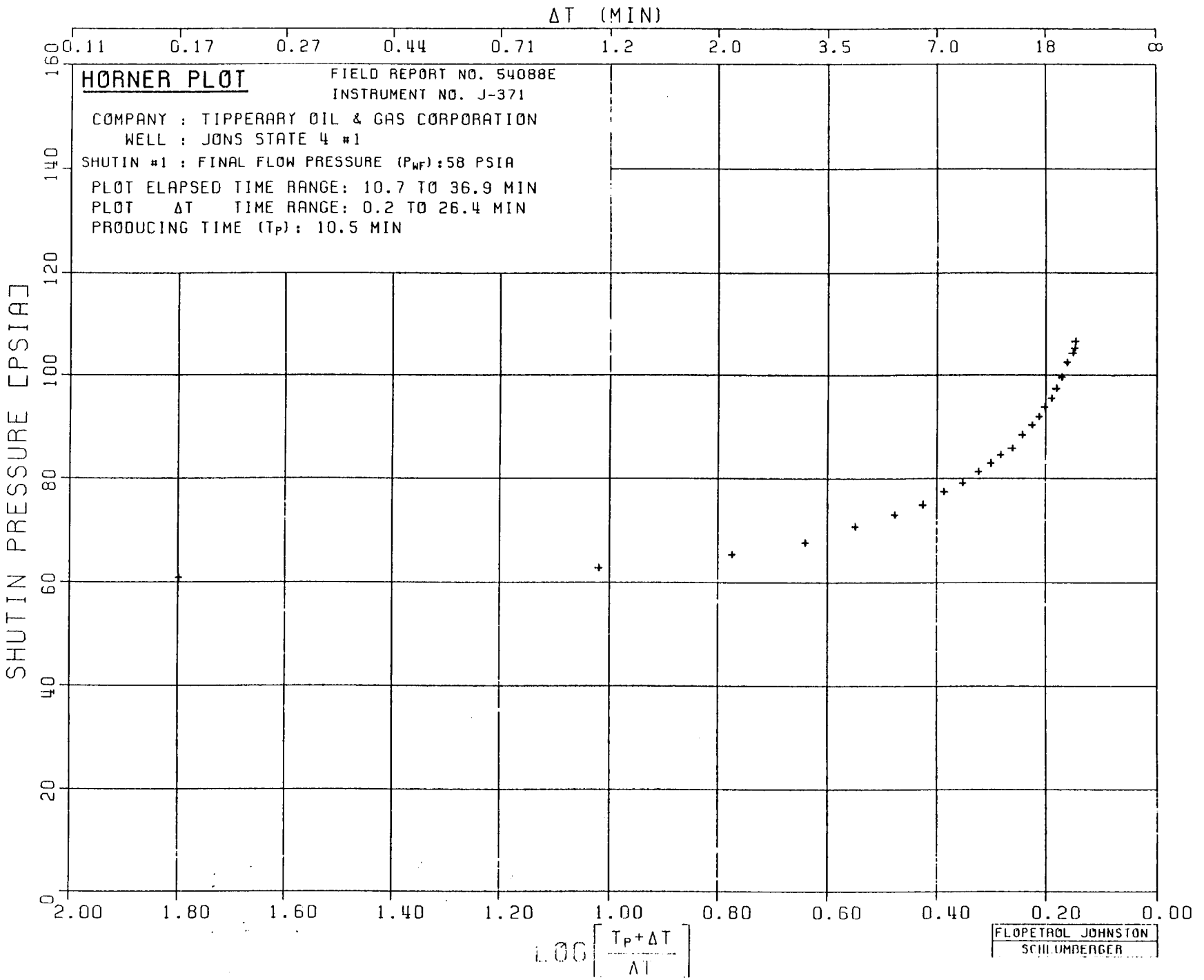
| # | TIME OF DAY HH:MM:SS | DATE DD-MM | EXPLANATION | ELAPSED TIME,MIN | BOT HOLE PRESSURE PSIA |
|---|---|---|---|---|---|
| 1 | 19:40:47 | 9-OC | HYDROSTATIC MUD | -2.21 | 3792 |
| 2 | 19:43: 0 | 9-OC | START FLOW | 0.00 | 57 |
| 3 | 19:53:31 | 9-OC | END FLOW & START SHUT-IN | 10.51 | 58 |
| 4 | 20:19:52 | 9-OC | END SHUT-IN | 36.86 | 107 |
| 5 | 20:20: 1 | 9-OC | CLOCK STOPPED | 37.01 | 102 |
| 6 | 20:23:11 | 9-OC | HYDROSTATIC MUD | 40.18 | 3677 |

## SUMMARY OF FLOW PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | DURATION MIN | START PRESSURE PSIA | END PRESSURE PSIA |
|---|---|---|---|---|---|
| 1 | 0.00 | 10.51 | 10.51 | 57 | 58 |

## SUMMARY OF SHUTIN PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | DURATION MIN | START PRESSURE PSIA | END PRESSURE PSIA | FINAL FLOW PRESSURE PSIA | PRODUCING TIME, MIN |
|---|---|---|---|---|---|---|---|
| 1 | 10.51 | 36.86 | 26.35 | 58 | 107 | 58 | 10.51 |


ΔT (MIN)
0.11
0.17
0.27
0.44
0.71
1.2
2.0
3.5
7.0
18
∞
HORNER PLOT
FIELD REPORT NO. 54088E
INSTRUMENT NO. J-371
COMPANY : TIPPERARY OIL & GAS CORPORATION
WELL : JONS STATE 4 #1
SHUTIN #1 : FINAL FLOW PRESSURE ($P_{WF}$):58 PSIA
PLOT ELAPSED TIME RANGE: 10.7 TO 36.9 MIN
PLOT ΔT TIME RANGE: 0.2 TO 26.4 MIN
PRODUCING TIME ($T_P$): 10.5 MIN
SHUTIN PRESSURE [PSIA]
0
20
40
60
80
100
120
140
160
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
LOG [(Tp+ΔT)/ΔT]
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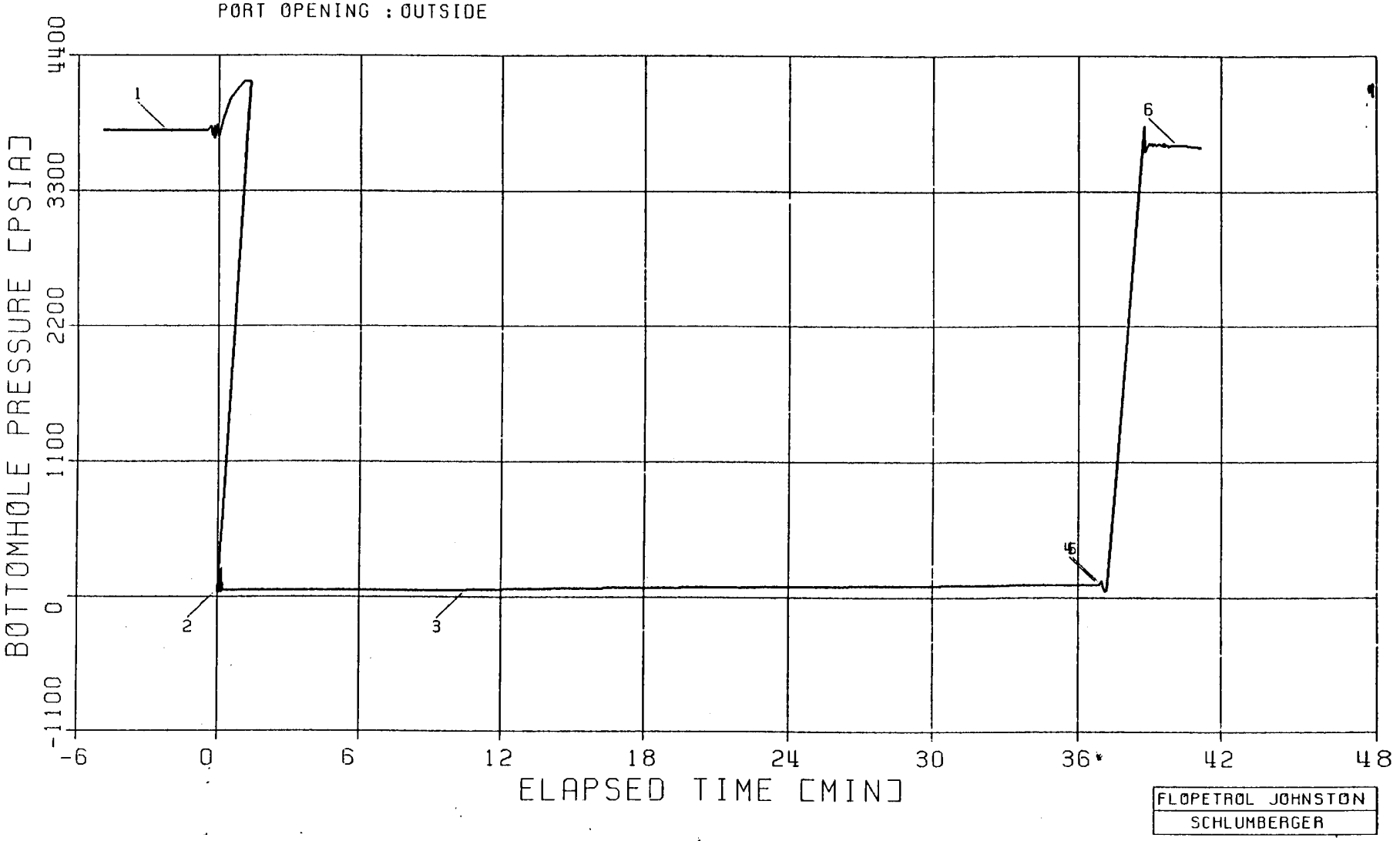
# BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 54088E
INSTRUMENT NO. J-371
DEPTH : 8673FT
CAPACITY : 6400 PSI
PORT OPENING : OUTSIDE

COMPANY : TIPPERARY OIL & GAS CORPORATION
WELL : JONS STATE 4 #1

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FIELD REPORT # : 54088E

COMPANY : TIPPERARY OIL & GAS CORPORATION
WELL : JONS STATE 4 #1

INSTRUMENT # : J-371
CAPACITY [PSI] : 6400.
DEPTH [FT] : 8673.0
PORT OPENING : OUTSIDE
TEMPERATURE [DEG F] : 138.0

MNEMONICS : ET = ELAPSED TIME ..... [MIN]
PW = BOTTOMHOLE PRESSURE ..... [PSIA]

| # | CODE | EXPLANATION | ET | PW |
|---|---|---|---|---|
| 1 | 1 | HYDROSTATIC MUD | -2.21 | 3792.26 |
| 2 | 2 | START FLOW | 0.00 | 57.42 |
| 3 | 6 | END FLOW & START SHUT-IN | 10.51 | 57.74 |
| 4 | 5 | END SHUT-IN | 36.86 | 106.76 |
| 5 | 23 | CLOCK STOPPED | 37.01 | 101.63 |
| 6 | 1 | HYDROSTATIC MUD | 40.18 | 3676.92 |