

329347

NB# 16 : 3074 m : 12 Oct. '85.

AMOCO AUST. Tilana No.1
Date : 12 Oct 85 Time : 04:59

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY 23.00 cP
YIELD POINT 20.00 lb/cft²
POWER LAW k .9482
POWER LAW n .6181
DEPTH 3073.50 m (10,084')
VERTICAL DEPTH 3073.10 m
DEPTH OF RETURNS 3066.00 m
CUTTINGS BULK DENSITY 2.50 spc grv
MUD DENSITY 9.30 lb/gal
ACTIVE SURFACE MUD VOLUME 444 bbl
FLOW RATE 520 gal/min
BOOSTER FLOW 0 gal/min
PUMP PRESSURE 2150 psi
PUMP gal/stk 4.96 gal/stk
BIT NOZZLES 14, 14, 14

CALCULATED RESULTS:

FROM m	TO m	LENGTH m	ANNULUS/PIPE in	ANN VELO. ft/min	CRIT VELO ft/min	FLOW REGIME	PRESS LOSS psi
0.00	104.55	104.55	18.750/ 5.000	39.0	238.2	LAMINAR	.3
104.55	1651.4	1546.9	12.347/ 5.000	100.0	318.4	LAMINAR	21.5
1651.4	2759.8	1108.4	12.250/ 5.000	101.9	320.4	LAMINAR	15.9
2759.7	2927.2	167.38	12.250/ 5.000	101.9	320.4	LAMINAR	2.4
2927.0	3073.5	146.35	12.250/ 8.000	148.1	409.6	LAMINAR	6.2

Annulus Diam	Pipe		
	j.d.	o.d.	i.d.
18.750	6.375	5.000	4.276
12.347	6.375	5.000	4.276
12.250	6.375	5.000	4.276
12.250	6.375	5.000	3.000
12.250	8.000	8.000	2.875

MUD HYDROSTATIC 9.28 lb/gal
FLOW CONTRIBUTION .09 lb/gal
CUTTINGS CONTRIBUTION .05 lb/gal
EQUIVALENT CIRCULATING DENSITY 9.42 lb/gal

SURFACE PRESSURE LOSS 32 psi NOZZLE VELOCITY 369.9 ft/sec
PIPEBORE PRESSURE LOSS 1016 psi HYDRAULIC POWER 344.7 hp
ANNULAR PRESSURE LOSS 46 psi JET IMPACT FORCE 926.0 lbs
BIT PRESSURE LOSS 1136 psi % OF PRESS LOSS AT BIT 51
TOTAL CALC. PRESS LOSS 2231 psi

VOLUMES:	gal	bbl	Strokes	Minutes @ 105 s.p.m.
1) Pipe Capacity	7118	169	1435	13.7
2) Pipe Displacement	4232	101	853	8.1
3) Total Annulus	53411	1272	10768	102.7 ← LAG
4) Mud in active pits	18652	444	3761	35.9
Circulation (1) + (3)	60528	1441	12203	116.4
Hole Volume (1)+(2)+(3)	64760	1542	13056	124.5
Total Mud Circulation	79180	1885	15964	152.3
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0290			
Corrected Annulus	55105	1312	11110	106.0 ← LAG
Corrected Hole	66455	1582	13398	127.8

