

AMOCO AUSTR. Tilana No.1
 Date : 23 Oct 85 Time : 05:11

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY 30.00 cP
 YIELD POINT 23.00 lb/cft²
 POWER LAW k 1.4177
 POWER LAW n .6015
 DEPTH 3463.60 m (11,364')

VERTICAL DEPTH 3463.22 m
 DEPTH OF RETURNS 3453.19 m
 CUTTINGS BULK DENSITY 2.50 spc grv
 MUD DENSITY 9.52 lb/gal
 ACTIVE SURFACE MUD VOLUME 373 bbl
 FLOW RATE 595 gal/min
 BOOSTER FLOW 0 gal/min
 PUMP PRESSURE 2930 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	44.7	301.6	LAMINAR	.4
104.55	1651.4	1546.9	12.347/ 5.000	114.4	393.7	LAMINAR	33.0
1651.4	3149.9	1498.5	12.250/ 5.000	116.6	401.0	LAMINAR	33.1
3149.8	3317.3	157.38	12.250/ 5.000	116.6	401.0	LAMINAR	3.7
3317.1	3463.6	146.35	12.250/ 8.000	169.5	507.9	LAMINAR	9.4

Annulus Dian	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 9.51 lb/gal
 FLOW CONTRIBUTION .14 lb/gal
 CUTTINGS CONTRIBUTION .03 lb/gal
 EQUIVALENT CIRCULATING DENSITY 9.67 lb/gal

SURFACE PRESSURE LOSS 43 psi NOZZLE VELOCITY 423.3 ft/sec
 PIPEBORE PRESSURE LOSS 1494 psi HYDRAULIC POWER 523.7 hp
 ANNULAR PRESSURE LOSS 80 psi JET IMPACT FORCE 1241.1 lbs
 BIT PRESSURE LOSS 1523 psi % OF PRESS LOSS AT BIT 49
 TOTAL CALC. PRESS LOSS 3140 psi

VOLUMES:	gal	bbl	Strokes	Minutes @ 120 s.p.m.
1) Pipe Capacity	8072	192	1627	13.6
2) Pipe Displacement	4623	110	932	7.8
3) Total Annulus	59900	1426	12077	100.7 ← LAG
4) Mud in active pits	15670	373	3159	26.3
Circulation (1) + (3)	67973	1618	13704	114.2
Hole Volume (1)+(2)+(3)	72595	1728	14636	122.0
Total Mud Circulation	83643	1991	16363	140.6
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0990			
Corrected Annulus	66632	1536	13434	112.0 ← LAG
Corrected Hole	79327	1839	15993	133.3

