

NB 16: 3311.7m: 16 Oct '85.

Hyds. for NB 16: Reaming with NB #1

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY	20.00	cP
YIELD POINT	16.00	lb/cft <sup>2</sup>
POWER LAW k	.7047	
POWER LAW n	.6374	
DEPTH	3311.70	m (10,866')
VERTICAL DEPTH	3311.40	m
DEPTH OF RETURNS	3311.70	m
CUTTINGS BULK DENSITY	2.50	spc grv
MUD DENSITY	9.30	lb/gal
ACTIVE SURFACE MUD VOLUME	396	bbbl
FLOW RATE	606	gal/min
BOOSTER FLOW	0	gal/min
PUMP PRESSURE	2770	psi
PUMP gal/stk	4.96	gal/stk
BIT NOZZLES	14, 14, 14	

CALCULATED RESULTS:

FROM	TO	LENGTH	ANNULUS/PIPE	ANN VELO.	CRIT VELO	FLOW	PRESS LOSS
m	m	m	in	ft/min	ft/min	REGIME	psi
0.00	104.55	104.55	18.750/ 5.000	45.5	199.7	LAMINAR	.2
104.55	1651.4	1546.9	12.347/ 5.000	116.5	270.5	LAMINAR	18.7
1651.4	2998.0	1346.6	12.250/ 5.000	118.8	272.2	LAMINAR	16.9
2997.7	3165.4	167.38	12.250/ 5.000	118.8	272.2	LAMINAR	2.1
3165.3	3311.7	146.35	12.250/ 8.000	172.6	351.9	LAMINAR	5.5

Annulus	Pipe		
	Diam	j.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	9.30	lb/gal
FLOW CONTRIBUTION	.08	lb/gal
CUTTINGS CONTRIBUTION	0.00	lb/gal
EQUIVALENT CIRCULATING DENSITY	9.38	lb/gal

SURFACE PRESSURE LOSS	43	psi	NOZZLE VELOCITY	431.1	ft/sec
PIPEBORE PRESSURE LOSS	1331	psi	HYDRAULIC POWER	545.6	hp
ANNULAR PRESSURE LOSS	43	psi	JET IMPACT FORCE	1257.6	lbs
BIT PRESSURE LOSS	1543	psi	% OF PRESS LOSS AT BIT	52	
TOTAL CALC. PRESS LOSS	2961	psi			

VOLUMES:	gal	bbbl	Strokes	Minutes @ 122 s.p.m.
1) Pipe Capacity	7701	183	1553	12.7
2) Pipe Displacement	4471	106	901	7.4
3) Total Annulus	57373	1366	11567	94.7 ← LAG
4) Mud in active pits	16632	396	3353	27.4
Circulation (1) + (3)	65074	1549	13120	107.4
Hole Volume (1)+(2)+(3)	69545	1656	14021	114.8
Total Mud Circulation	81706	1945	16473	134.8
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0549			
Corrected Annulus	60944	1451	12287	100.6 ← LAG
Corrected Hole	73116	1741	14741	120.7

