

329355

AMCO-AUSTIN Oct 1985 Tiana No. 10 : 04:33

NB#17: Hydraulics for one blocked jet
19 Oct. '85.

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY	28.00 cP
YIELD POINT	23.00 lb/cft ²
POWER LAW k	1.0365
POWER LAW n	.6314
DEPTH	3448.00 m (11,313')
VERTICAL DEPTH	3447.60 m
DEPTH OF RETURNS	3441.00 m
CUTTINGS BULK DENSITY	2.50 spc grv
MUD DENSITY	9.60 lb/gal
ACTIVE SURFACE MUD VOLUME	439 bbl
FLOW RATE	473 gal/min
BOOSTER FLOW	0 gal/min
PUMP PRESSURE	3010 psi
PUMP gal/stk	4.96 gal/stk
BIT NOZZLES	14, 14

One blocked jet.

CALCULATED RESULTS:

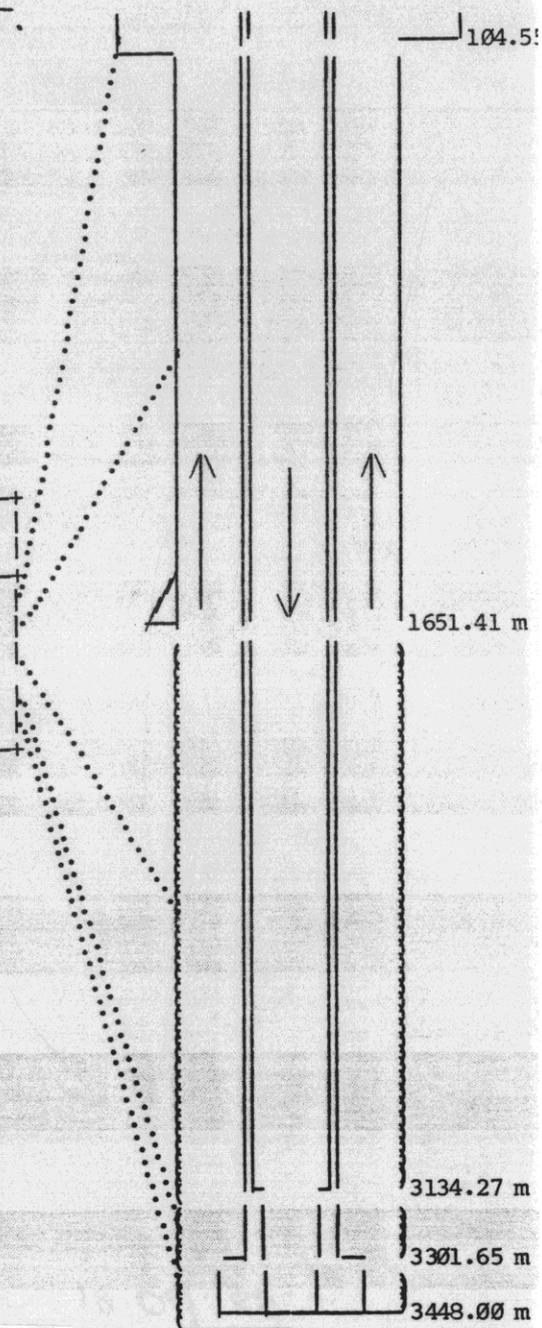
FROM m	TO m	LENGTH m	ANNULUS/PIPE in	ANN VELO. ft/min	CRIT VELO ft/min	FLOW REGIME	PRESS LOSS psi
0.00	104.55	104.55	18.750/ 5.000	35.5	255.6	LAMINAR	.3
104.55	1651.4	1546.9	12.347/ 5.000	91.0	344.7	LAMINAR	23.1
1651.4	3134.3	1482.9	12.250/ 5.000	92.7	346.8	LAMINAR	22.9
3134.3	3301.7	167.38	12.250/ 5.000	92.7	346.8	LAMINAR	2.6
3301.6	3448.0	146.35	12.250/ 8.000	134.7	446.7	LAMINAR	6.7

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	9.58 lb/gal
FLOW CONTRIBUTION	.09 lb/gal
CUTTINGS CONTRIBUTION	.04 lb/gal
EQUIVALENT CIRCULATING DENSITY	9.72 lb/gal

SURFACE PRESSURE LOSS	28 psi	NOZZLE VELOCITY	504.7 ft/sec
PIPEBORE PRESSURE LOSS	1028 psi	HYDRAULIC POWER	602.6 hp
ANNULAR PRESSURE LOSS	56 psi	JET IMPACT FORCE	1186.3 lbs
BIT PRESSURE LOSS	2184 psi	% OF PRESS LOSS AT BIT	66
TOTAL CALC. PRESS LOSS	3295 psi		

VOLUMES:	gal	bbl	Strokes	Minutes @ 95 s.p.m.
1) Pipe Capacity	8034	191	1620	17.0
2) Pipe Displacement	4607	110	929	9.7
3) Total Annulus	59641	1420	12024	126.1 ← LAG
4) Mud in active pits	18417	439	3713	38.9
Circulation (1) + (3)	67675	1611	13644	143.1
Hole Volume (1)+(2)+(3)	72282	1721	14573	152.8
Total Mud Circulation	86092	2050	17357	182.0
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0990			
Corrected Annulus	66343	1580	13376	140.3 ← LAG
Corrected Hole	78984	1881	15924	167.0



5 cm