EXLOG®

AMOCO AUST. Tilana No.1
Date : 22 Oct 81 Time : 04:50

329358

HYDRAULICS CALCULATIONS

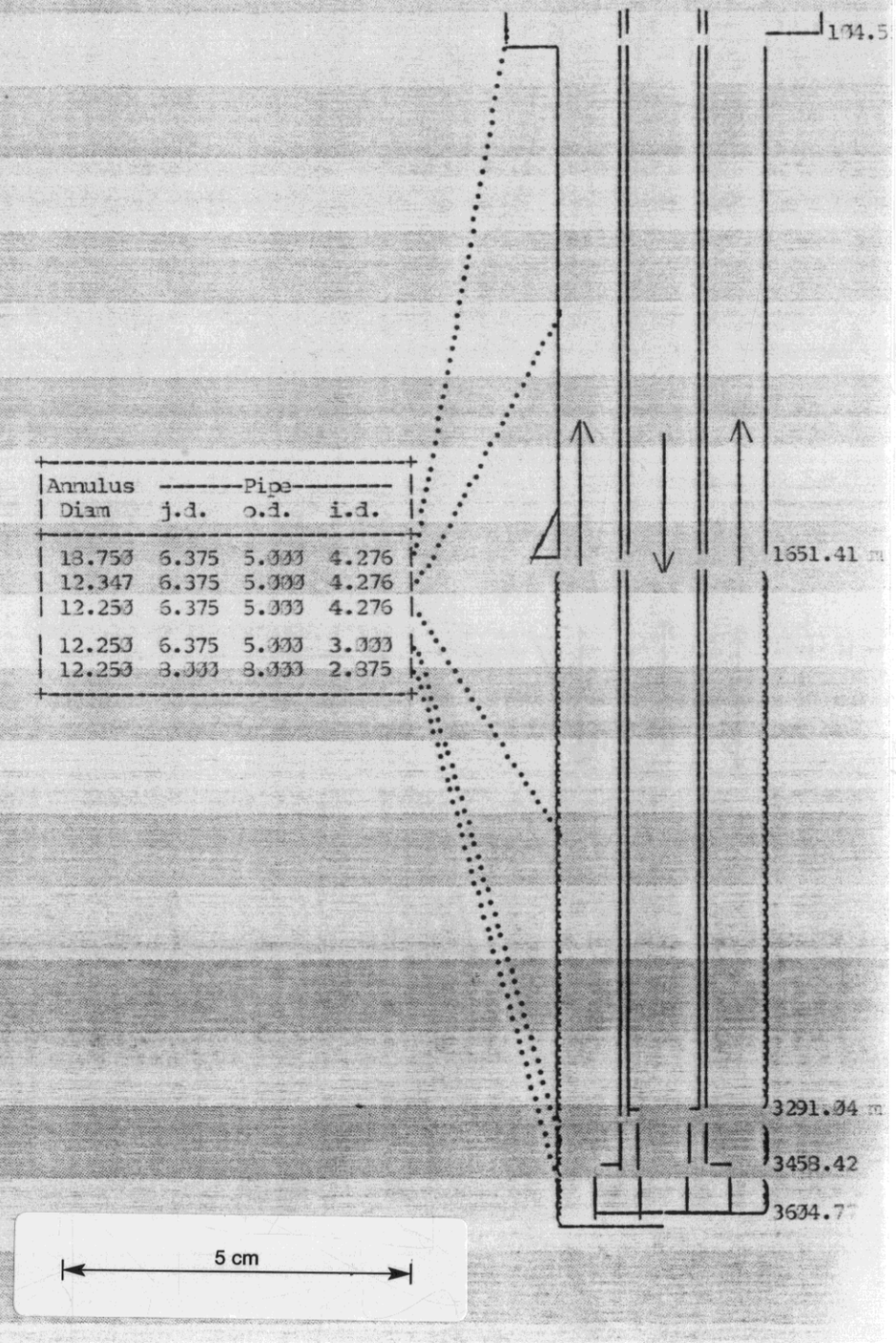
PLASTIC VISCOSITY	23.00	cP
YIELD POINT	23.00	lb/cft^2
POWER LAW k	1.4350	
POWER LAW n	.5510	
DEPTH	3604.77	m (11,827')
VERTICAL DEPTH	3604.38	m
DEPTH OF RETURNS	3597.12	m
CUTTINGS BULK DENSITY	2.50	spc grv
MUD DENSITY	9.60	lb/gal
ACTIVE SURFACE MUD VOLUME	552	bbl
FLOW RATE	606	gal/min
BOOSTER FLOW	0	gal/min
PUMP PRESSURE	3310	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	45.5	270.5	LAMINAR	.4
104.55	1651.4	1546.9	12.347/ 5.000	116.6	346.4	LAMINAR	23.4
1651.4	3291.0	1639.6	12.250/ 5.000	118.9	348.2	LAMINAR	31.1
3291.9	3458.4	157.38	12.250/ 5.000	118.9	348.2	LAMINAR	3.2
3458.3	3604.8	146.35	12.250/ 8.000	172.7	429.4	LAMINAR	7.7

Annulus Diam	Pipe j.d.	Pipe o.d.	Pipe 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	2.375

MUD HYDROSTATIC	9.58	lb/gal	
FLOW CONTRIBUTION	.12	lb/gal	
CUTTINGS CONTRIBUTION	.04	lb/gal	
EQUIVALENT CIRCULATING DENSITY	9.74	lb/gal	

SURFACE PRESSURE LOSS	45 psi	NOZZLE VELOCITY	431.5 ft/sec
PIPEBORE PRESSURE LOSS	1386 psi	HYDRAULIC POWER	564.6 hp
ANNULAR PRESSURE LOSS	71 psi	JET IMPACT FORCE	1300.2 lbs
BIT PRESSURE LOSS	1596 psi	% OF PRESS LOSS AT BIT	52
TOTAL CALC. PRESS LOSS	3097 psi		

VOLUMES:	gal	bbl	Strokes	Minutes @ 122 s.p.m.
1) Pipe Capacity	8418	200	1697	13.9
2) Pipe Displacement	4764	113	961	7.9
3) Total Annulus	62249	1482	12550	102.6 <- LAG
4) Mud in active pits	23163	552	4670	38.2
Circulation (1) + (3)	70667	1683	14247	116.5
Hole Volume (1)+(2)+(3)	75431	1796	15208	124.4
Total Mud Circulation	93830	2234	18917	154.7
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR = 1.0990				
Corrected Annulus	69247	1649	13961	114.2 <- LAG
Corrected Hole	82429	1963	16619	135.9