

	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Critical deposition velocity (M/s)	0.660778	0.7637151	0.7559344	0.5947331	1.5262100	1.3528440
Minimum operating flow velocity (M/s)	1.1607777	1.2637151	1.2559344	1.0947331	2.0262100	1.8528440
Head loss (mwc/m of pipe)	0.0118300	0.0088900	0.0403100	1.5948300	0.1654500	0.0255000
Head loss (mwc)	1.1830000	0.8890000	4.0310000	159.4830000	16.5450000	2.5500000
Pressure drop (Kpa)	11.6052300	8.7210900	39.5441100	1564.5282300	162.3064500	25.0155000
Specific weight of slurry (N/cum)	8529.3721890	7756.4138400	11351.8671300	11351.8671300	22715.6436000	12736.3642020
Discharge of slurry (cum/s)	0.0801255	0.0156819	0.0027363	0.0027395	0.0640079	0.1465264
Efficiency of pump (%)	0.8000000	0.8000000	0.8000000	0.8000000	0.8000000	0.8000000
Required pump capacity (kW)	1.1623437	0.1709539	0.1352553	5.3575114	12.9861150	4.5817900
Required pump capacity (hP)	1.5581014	0.2291608	0.1813073	7.1816506	17.4076608	6.1418096
Wave velocity (m/s)	1435.1	1597.4	1490.8	1524.2	1099.1	1131.6
Water hammer pressure (Mpa)	2.1586440	1.4524890	2.4841330	10.4237600	9.7220240	4.3045110
Minimum time of valve closure (s)	0.139362	0.125201	0.134158	0.131217	0.181967	0.176746
Thickness reqd. for WHP (mm)*	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Corrosion loss (mm/yr)	0.2500000	0.2500000	0.2500000	0.2500000	0.2500000	0.2500000
Erosion loss at pipe bottom (mm/yr)	0.0378960	0.0669074	0.2773974	4.9273910	0.4439017	0.1661557
Erosion at pipe top (mm/yr)	0.0002239	0.0000059	0.0077725	2.7935640	0.4070849	0.1147153
Pipe thickness provided (mm)	15.09	18.26	5.54	4.55	11.1	10.35
Life of pipe if not rotated periodically (yrs)	52.4147645	57.6193641	10.5044128	0.8788210	15.9965021	24.8704992

*As minimum time of valve closure is negligible

Normalised concentration of individual size fraction (Cvj/Cvjf)							
	y/D	n=1	n=2	n=3	n=4	n=5	n=6
Pipe 1	0.1	0.0130	0.1130	0.8660	2.8180	3.5090	2.7820
	0.2	0.0000	0.0080	0.1440	0.9370	1.7590	1.8850
	0.3	0.0000	0.0010	0.0340	0.3830	1.0040	1.3740
	0.4	0.0000	0.0000	0.0060	0.1320	0.5140	0.9420
	0.5	0.0000	0.0000	0.0010	0.0380	0.2350	0.6060
	0.6	0.0000	0.0000	0.0000	0.0110	0.1080	0.3900
	0.7	0.0000	0.0000	0.0000	0.0040	0.0550	0.2680
	0.8	0.0000	0.0000	0.0000	0.0020	0.0320	0.1960
	0.9	0.0000	0.0000	0.0000	0.0010	0.0160	0.1340
Pipe 2	0.1	0.2440	0.7000	1.9990	4.0450	5.1030	4.5590
	0.2	0.0000	0.0040	0.0560	0.4340	1.2280	2.0210
	0.3	0.0000	0.0000	0.0040	0.0850	0.4290	1.0890
	0.4	0.0000	0.0000	0.0000	0.0120	0.1240	0.5240
	0.5	0.0000	0.0000	0.0000	0.0010	0.0290	0.2230
	0.6	0.0000	0.0000	0.0000	0.0000	0.0070	0.0950
	0.7	0.0000	0.0000	0.0000	0.0000	0.0020	0.0460
	0.8	0.0000	0.0000	0.0000	0.0000	0.0010	0.0250
	0.9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0120
Pipe 3	0.1	1.8740	1.7580	1.5850	1.4120	1.2390	1.0360
	0.2	1.7290	1.6730	1.5710	1.4340	1.2750	1.0740
	0.3	1.5680	1.5740	1.5500	1.4570	1.3140	1.1170
	0.4	1.2590	1.3670	1.4860	1.4880	1.3880	1.2060
	0.5	0.0310	0.0950	0.2980	0.6930	1.0690	1.3420
	0.6	0.0010	0.0050	0.0420	0.2100	0.5140	0.9110
	0.7	0.0000	0.0010	0.0100	0.0850	0.2920	0.6660
	0.8	0.0000	0.0000	0.0030	0.0410	0.1860	0.5170
	0.9	0.0000	0.0000	0.0010	0.0170	0.1080	0.3820
Pipe 4	0.1	1.4860	1.3410	1.1600	1.0380	0.9680	0.9190
	0.2	1.3930	1.2850	1.1440	1.0410	0.9790	0.9350
	0.3	1.3070	1.2320	1.1270	1.0430	0.9900	0.9510
	0.4	1.1880	1.1560	1.1000	1.0430	1.0030	0.9720
	0.5	1.0210	1.0430	1.0530	1.0370	1.0190	1.0020
	0.6	0.8130	0.8910	0.9770	1.0180	1.0330	1.0380
	0.7	0.5970	0.7170	0.8710	0.9770	1.0350	1.0720
	0.8	0.4030	0.5410	0.7410	0.9100	1.0160	1.0940
	0.9	0.2090	0.3350	0.5500	0.7810	0.9520	1.0920
Pipe 5	0.1	1.6310	1.0670	0.9810	0.9700	0.9690	0.9690
	0.2	1.4350	1.0540	0.9870	0.9780	0.9770	0.9770
	0.3	1.2830	1.0410	0.9910	0.9840	0.9840	0.9840
	0.4	1.1120	1.0240	0.9960	0.9920	0.9920	0.9920
	0.5	0.9320	1.0010	1.0010	1.0000	1.0000	1.0000
	0.6	0.7740	0.9770	1.0050	1.0080	1.0080	1.0080
	0.7	0.6550	0.9560	1.0070	1.0140	1.0150	1.0150
	0.8	0.5690	0.9370	1.0090	1.0190	1.0190	1.0190
	0.9	0.4760	0.9130	1.0100	1.0240	1.0250	1.0250
Pipe 6	0.1	3.4400	1.5900	1.0480	0.9770	0.9740	0.9730
	0.2	1.6020	1.3890	1.0430	0.9910	0.9890	0.9880
	0.3	0.8660	1.2430	1.0340	0.9970	0.9950	0.9950
	0.4	0.4180	1.0870	1.0200	1.0010	1.0000	1.0000
	0.5	0.1800	0.9300	1.0020	1.0040	1.0040	1.0040
	0.6	0.0770	0.7950	0.9830	1.0060	1.0070	1.0070
	0.7	0.0380	0.6950	0.9670	1.0060	1.0080	1.0090
	0.8	0.0210	0.6220	0.9530	1.0070	1.0090	1.0100
	0.9	0.0100	0.5430	0.9370	1.0070	1.0110	1.0110

		Overall Concentration Profile		
		y/D	Cv/Cvf	Cv(%)
Pipe 1		0.1	0.7483	0.6735
		0.2	0.1855	0.1670
		0.3	0.0656	0.0590
		0.4	0.0204	0.0183
		0.5	0.0055	0.0049
		0.6	0.0015	0.0014
		0.7	0.0005	0.0005
		0.8	0.0002	0.0002
		0.9	0.0001	0.0001
Pipe 2		0.1	1.5460	9.2757
		0.2	0.0818	0.4910
		0.3	0.0132	0.0793
		0.4	0.0018	0.0106
		0.5	0.0002	0.0011
		0.6	0.0000	0.0001
		0.7	0.0000	0.0000
		0.8	0.0000	0.0000
		0.9	0.0000	0.0000
Pipe 3		0.1	1.6370	56.4772
		0.2	1.5830	54.6149
		0.3	1.5193	52.4165
		0.4	1.3817	47.6669
		0.5	0.2390	8.2455
		0.6	0.0461	1.5901
		0.7	0.0154	0.5320
		0.8	0.0068	0.2332
		0.9	0.0026	0.0911
Pipe 4		0.1	1.2368	42.6703
		0.2	1.1975	41.3144
		0.3	1.1595	40.0028
		0.4	1.1048	38.1159
		0.5	1.0224	35.2731
		0.6	0.9087	31.3495
		0.7	0.7731	26.6709
		0.8	0.6290	21.6988
		0.9	0.4457	15.3763
Pipe 5		0.1	0.7160	28.6400
		0.2	0.7004	28.0168
		0.3	0.6880	27.5192
		0.4	0.6737	26.9460
		0.5	0.6579	26.3140
		0.6	0.6432	25.7288
		0.7	0.6317	25.2680
		0.8	0.6228	24.9108
		0.9	0.6128	24.5100
Pipe 6		0.1	0.9664	7.4415
		0.2	0.7827	6.0269
		0.3	0.6969	5.3663
		0.4	0.6325	4.8703
		0.5	0.5842	4.4980
		0.6	0.5506	4.2396
		0.7	0.5284	4.0686
		0.8	0.5128	3.9483
		0.9	0.4964	3.8220

	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Unhindered settling velocity in liquid (m/s)						
n=1	0.1207161	0.1524496	0.0964881	0.0964881	0.0581646	0.0519509
n=2	0.0914976	0.1160434	0.0730785	0.0730785	0.0122776	0.0100496
n=3	0.0611717	0.0783281	0.0487747	0.0487747	0.0017590	0.0013699
n=4	0.0375218	0.0489620	0.0298185	0.0298185	0.0001008	0.0000785
n=5	0.0235198	0.0315193	0.0186055	0.0186055	0.0000146	0.0000114
n=6	0.0132712	0.0185427	0.0104256	0.0104256	0.0000013	0.0000010

	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Hindered settling velocity in slurry (m/s)						
n=1	0.1181357	0.1314928	0.0350987	0.0350987	0.0111819	0.0397565
n=2	0.0895370	0.1000913	0.0263448	0.0263448	0.0014353	0.0070691
n=3	0.0597434	0.0670834	0.0155391	0.0150551	0.0001633	0.0009437
n=4	0.0365504	0.0412167	0.0085247	0.0083496	0.0000094	0.0000541
n=5	0.0228544	0.0261238	0.0047536	0.0046849	0.0000014	0.0000078
n=6	0.0128553	0.0150717	0.0023033	0.0022801	0.0000001	0.0000007