

Input Data

		Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Particle size(mm)	n=1	0.75	0.75	0.75	0.75	0.191	0.191
	n=2	0.5375	0.5375	0.5375	0.5375	0.06255	0.06255
	n=3	0.3375	0.3375	0.3375	0.3375	0.02139	0.02139
	n=4	0.2	0.2	0.2	0.2	0.00512	0.00512
	n=5	0.128	0.128	0.128	0.128	0.00195	0.00195
	n=6	0.0798	0.0798	0.0798	0.0798	0.00058	0.00058
Amount read from PSD(%) (Note 1)	n=1	21.1	21.1	21.1	21.1	8.3	8.3
	n=2	25.2	25.2	25.2	25.2	17.2	17.2
	n=3	38.2	38.2	38.2	38.2	12.3	12.3
	n=4	13.7	13.7	13.7	13.7	28.5	28.5
	n=5	1.4	1.4	1.4	1.4	21.7	21.7
	n=6	0.4	0.4	0.4	0.4	12.1	12.1
Mean diameter of particles, d50(mm) read from PSD		0.338	0.338	0.338	0.338	0.00482	0.00482
Pipe diameter(mm) (Note 2)		242.9	131.8	49.2	24.3	146.1	252.4
Specific gravity of carrier fluid		0.8642	0.7487	1.0042	1.0042	1.0526	1.0554
Specific gravity of material to be transported through slurry pipeline		1.4483	1.4481	1.4476	1.4476	4.21	4.21
Flow velocity (m/s)		1.73	1.15	1.44	5.91	3.82	2.93
Slurry concentration (%) (Note 3)		0.9	6	34.5	34.5	40	7.7
Slurry temperature (deg C)		297	400	300	300	63.1	47.4
Slurry viscosity (Pa.s) (Note 4)		0.00376	0.00048	0.00383	0.00383	0.00056	0.0008
Pump efficiency (%)		80	80	80	80	80	80
Total length of slurry pipeline (in Km)		0.1	0.1	0.1	0.1	0.1	0.1
Bulk modulus of elasticity for material of pipe line. (in KPa) (Note 5)							
Thickness of pipe material (in mm)		15.09	18.26	5.54	4.55	11.1	10.35
Notes 1. PSD is based on weight %. 2. Pipe diameter is inside diameter of pipe. 3. Slurry concentration is based on volumetric %. 4. Slurry viscosity is based on carrier fluid. 5. The material of pipe line is Carbon Steel.							