Table B-9. Velocities Required to Scour Air Pockets from Pipelines. Values computed by Wheeler [10] using Equation B-1 developed by Wisner, Mohsen, and Kouwen [11].

Pipe diameter,	Velocities, m/s					Velocities, ft/s					Pipe diameter,
	Slope					Slope					
mm	0%	5%	25%	45°	90°	0%	5%	25%	45°	90°	in.
25	0.4	0.4	0.5	0.5	0.5	1.4	1.4	1.6	1.7	1.8	1
50	0.6	0.6	0.7	0.7	0.8	1.9	2.0	2.2	2.4	2.5	2
75	0.7	0.8	0.8	0.9	0.9	2.3	2.5	2.7	2.9	3.1	3
100	0.8	0.9	0.9	1.0	1.1	2.7	2.9	3.1	3.4	3.5	4
150	1.0	1.1	1.2	1.3	1.3	3.3	3.5	3.8	4.2	4.3	6
200	1.2	1.2	1.3	1.5	1.5	3.8	4.1	4.4	4.8	5.0	8
250	1.3	1.4	1.5	1.6	1.7	4.3	4.6	4.9	5.4	5.6	10
300	1.4	1.5	1.6	1.8	1.9	4.7	5.0	5.4	5.9	6.1	12
350	1.6	1.6	1.8	1.9	2.0	5.1	5.4	5.8	6.3	6.6	14
375	1.6	1.7	1.8	2.0	2.1	5.2	5.6	6.0	6.6	6.8	15
400	1.6	1.8	1.9	2.1	2.1	5.4	5.8	6.2	6.8	7.0	16
450	1.7	1.9	2.0	2.2	2.3	5.7	6.1	6.6	7.2	7.5	18
500	1.8	2.0	2.1	2.3	2.4	6.0	6.5	6.9	7.6	7.9	20
525	1.9	2.0	2.2	2.4	2.5	6.2	6.6	7.1	7.8	8.1	21
600	2.0	2.2	2.3	2.5	2.6	6.6	7.1	7.6	8.3	8.6	24
675	2.1	2.3	2.5	2.7	2.8	7.0	7.5	8.1	8.8	9.2	27
750	2.3	2.4	2.6	2.8	2.9	7.4	7.9	8.5	9.3	9.6	30
825	2.4	2.5	2.7	3.0	3.1	7.8	8.3	8.9	9.7	10.1	33
900	2.5	2.7	2.8	3.1	3.2	8.1	8.7	9.3	10.2	10.6	36
1050	2.7	2.9	3.1	3.4	3.5	8.8	9.4	10.1	11.0	11.4	42
1200	2.9	3.0	3.3	3.6	3.7	9.4	10.0	10.8	11.8	12.2	48
1500	3.2	3.4	3.7	4.0	4.1	10.5	11.2	12.0	13.1	13.6	60
1800	3.5	3.7	4.0	4.4	4.5	11.5	12.2	13.2	14.4	14.9	72

- Air problems do not occur where the pipe gradient is positive in the direction of flow [4].
- Avoid excessive head loss by using smaller-diameter pipe (to obtain higher velocities) only where gradient is flat or slopes downward.
- For air scouring to be effective, the tabular velocities must occur frequently (e.g., daily or more often).
- Air release valves in small pipes may be of little or no value.
- Blowback from clearing air in large pipes may cause surges that cannot be estimated. See Wisner, Mohsen, and Kouwen [4].
- Before designing piping systems for air scouring, it is advisable to read "Air Binding in Pipes" by Edmunds [5], the chapter on closed conduit flow in Falvey [7], and, for wastewater, "Hydraulics of Corrosive Gas Pockets in Force Mains" by Walski et al. [6].