

If John has a 2100 GPH Pump and has a Total of 20' of 1.25" OD Pipe run to his 5' High waterfall and he's using 4 -1.25" 90° Elbows to get it there then his Straight Pipe Length would be 20'. Add to this the 4 Elbows at 3.8' x 4 or another 15.2' to Add to 20' for 35.2' Total of Straight Pipe Run.

Going to the chart @ 2100 GPH pump flow & 1.25" ID Pipe gives us $1.58 \times 3.52' = 5.56$ Feet for the Total Pipe Friction Loss (Since we're using a 10' length as a standard we move the decimal on 35.2' one place to the left). Then Add the 5' for the waterfall to 5.56' to get your Total Pump Head Loss of 10.56'. Now going to his Pump Head Curve Chart that comes with it he looks up 10.6 feet and sees that at this Height the pump will only put out 1200 GPH.

<u>Charts are courtesy of the the Plastics Pipe Institute</u>	
90° Elbow Loss Chart (Elbow friction feet will ADD to the Total Feet of straight pipe) Using 90° Electrical Sweeps & 45° Elbows will Halve the losses	
1/2" Elbows Add 1.5 Feet for each	3/4" Elbows Add 2 Feet for each
1" Elbows Add 2.5 Feet for each	1.25" Elbows Add 3.8 Feet for each
1.5" Elbows Add 4 Feet for each	

"Friction Loss in "Feet of Head" for 10 FEET of Straight Schedule 40 Pipe						
Gallons/Minute / Hour	1/2 Inch Pipe	3/4"	1"	1.25"	1.5"	2"
1 GPM / 60 GPH	0.21	0.05				
2 GPM / 120 GPH	0.42	0.10	0.06	0.01		
5 GPM / 300 GPH	2.34	0.57	0.17	0.04	0.02	
7 GPM / 420 GPH	4.31	1.05	0.32	0.08	0.04	
10 GPM / 600 GPH	8.20	2.0	0.60	0.16	0.07	0.02
15 GPM / 900 GPH	45.23	4.25	1.28	0.33	0.15	0.05
20 GPM / 1200 GPH	NA	7.23	2.18	0.56	0.26	0.08
25 GPM / 1500 GPH		16.34	3.29	0.85	0.40	0.12
30 GPM / 1800 GPH		22.53	4.61	1.19	0.55	0.16
35 GPM / 2100 GPH		NA	6.91	1.58	0.75	0.22
40 GPM / 2400 GPH			9.63	2.02	0.94	0.28
45 GPM / 2700 GPH			12.41	2.51	1.17	0.34
50 GPM / 3000 GPH			15.22	3.05	1.43	0.42