Water System Simulation Report

This report summarizes the system operating conditions, equipment utilized, and simulation results for the provided scenarios. It is based on the supplied Python simulation script and CSV data files.

System Conditions and Equipment

Drawdown Volume: 640 gallons

Pressure Cut-Out: 60 psi

Pressure Cut-In: 38 psi

Pressure Failure Threshold: 20 psi

Booster Pump Capacity: 20 GPM

Well Refill Rate: 20 GPM

Time Step: 2.5 minutes

Max Simulation Time: 120 minutes

Flow Scenarios (per CN): 1.25, 1.0, 0.75, 0.5, 0.125 GPM

Number of Connection Nodes: 80

Simulation Results - 0.125 GPM per CN (Base)

Time (min)	Pressure (psi)	Flow Rate (GPM)
0.0	60.0	10.0
2.5	57.66	10.0
5.0	55.31	10.0
7.5	52.97	10.0
10.0	50.62	10.0
12.5	48.28	10.0
15.0	45.94	10.0
17.5	43.59	10.0
20.0	41.25	10.0
22.5	38.91	10.0
25.0	36.56	10.0
27.5	38.0	10.0
30.0	38.0	10.0
32.5	38.0	10.0
35.0	38.0	10.0
37.5	38.0	10.0
40.0	38.0	10.0
42.5	38.0	10.0
45.0	38.0	10.0
47.5	38.0	10.0
50.0	38.0	10.0
52.5	38.0	10.0
55.0	38.0	10.0
57.5	38.0	10.0
60.0	38.0	10.0
62.5	38.0	10.0
65.0	38.0	10.0
67.5	38.0	10.0
70.0	38.0	10.0
72.5	38.0	10.0
75.0	38.0	10.0

77.5	38.0	10.0
80.0	38.0	10.0
82.5	38.0	10.0
85.0	38.0	10.0
87.5	38.0	10.0
90.0	38.0	10.0
92.5	38.0	10.0
95.0	38.0	10.0
97.5	38.0	10.0
100.0	38.0	10.0
102.5	38.0	10.0
105.0	38.0	10.0
107.5	38.0	10.0
110.0	38.0	10.0
112.5	38.0	10.0
115.0	38.0	10.0
117.5	38.0	10.0
120.0	38.0	10.0

Simulation Results - 0.125 GPM per CN

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