FIRE HYDRANT FLOW TEST RESULTS

TEST LOCATION
Address: 900 Edwards Brothers Drive, Lillington
Proposed Tap Location: _____
Requested Flow Location: nearest hydrant to the proposed point of connection

APPLICANT
Name: Darrel Moser
Address: 1012 N Wellonsburg Place, Apex, NC 27502
Contact Person: Darrel Moser Phone: 919.810.0443 Fax: _____

TESTING AGENT
Firm Name: Andrew King Engineering, PLLC
Address: 5917 Shedd Drive, Raleigh, North Carolina 27603
Phone: (919) 906-5236 Email: Drew@AndrewKingEngineering.com

SYSTEM ANALYSIS
Main Size: 6" Elevation of Test Location: 174' +/-
Nearest Elevated Tank: Lillington Time of Test: 1:00 PM
Tank Elevation: 387.7'(55.7') Pressure Zone: 392'(60')

Theoretical Pressure: 92.5 psi
Calculated by: Drew King Witnessed by: N/A

RESULTS

Static Pressure: 93 psi 2" Pitotless Nozzle Reading: 14 & 14 psi
Residual Pressure: 53 psi Volume: 617 + 617 = 1,234 gpm
Disclaimer: These results are an instantaneous snap-shot of the system. It is recommended that the designer allow adequate safety to include low tank level.
Comments: Flowed (2) 2-1/2" Hose Monster(s) w/ 2" Pitotless Nozzle(s). (2" Pitotless Nozzle C = 1.38)

Completed by: Drew King

Date: 12/16/2024

Harnett County GIS

900 Edwards Brothers Drive, Lillington

NOT FOR LEGAL USE

Harnett COUNTY NORTH CAROLINA

Harnett.org/GIS

December 16, 2024

County Boundary
City Limits
Address Numbers
Fire Hydrants
0 – 5
> 5 – 16
Road Centerlines
Parcels

N
W
E
S

Feet
0
160

Hydrant Flow Test Report

Test Date 12/16/2024 **Test Time** 1:00 PM

Location

ILC Dover
900 Edwards Brothers Drive
Lillington, NC

Tested by

Andrew King Engineering, PLLC
5917 Shedd Drive
Raleigh, NC 27603
Drew@AndrewKingEngineering.com
919-906-5236

Notes

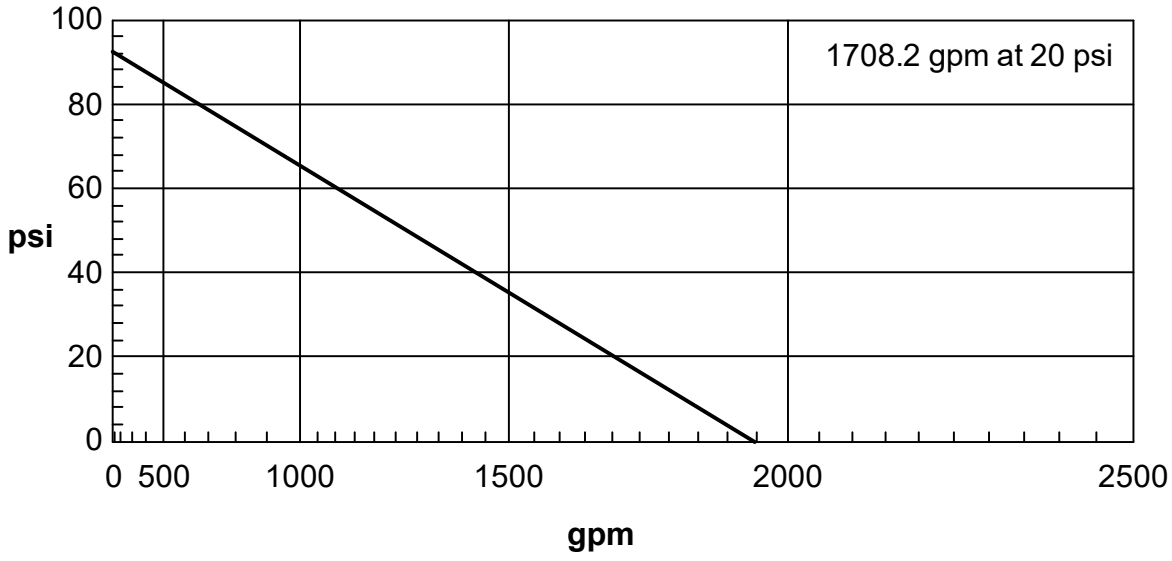
Read Hydrant

93 psi **static pressure**
53 psi **residual pressure**
174 ft **hydrant elevation**

Flow Hydrant(s)

Outlet	Elev	Size	C	Pitot Pressure	Flow
#1	174	2	1.38	14	617 gpm
#2	174	2	1.38	14	617 gpm
				Total	1234 gpm

Flow Graph



HOSE MONSTER COMPANY

2” PITOTLESS NOZZLE®

PN2THD - GPM FLOW CHART

FC-PN2THD.2023.04.30.MA

THIS DEVICE IS FM APPROVED

The pressure vs. flow rate data developed within this flow chart is based on the average K-factor measured during laboratory testing. This data has been determined to be within the acceptable limitations for accuracy. It is the user’s responsibility to verify that the correct chart and column is being used.

HM2H | 2 ½” Hose Monster® Model II or Flusher with flow splitter (HM2H, HM2HF) Use this column if the Pitotless Nozzle® is connected to the 2 ½” Hose Monster® or Flusher. The built-in pitot or flow splitter must be installed for accuracy.

OA | Open Atmosphere - Use this column when the Pitotless Nozzle® is connected directly to a test header or hydrant flowing openly to atmosphere.

	HM2H	OA
PSI	GPM	GPM
10	521	529
11	547	555
12	571	579
13	594	603
14	617	626
15	638	648
16	659	669
17	679	689
18	699	709
19	718	729
20	737	748
21	755	766
22	773	784
23	790	802
24	807	819
25	824	836
26	840	853
27	856	869
28	872	885
29	887	900
30	903	916

	HM2H	OA
PSI	GPM	GPM
31	918	931
32	932	946
33	947	960
34	961	975
35	975	989
36	989	1003
37	1002	1017
38	1016	1031
39	1029	1044
40	1042	1057
41	1055	1071
42	1068	1084
43	1081	1096
44	1093	1109
45	1106	1122
46	1118	1134
47	1130	1146
48	1142	1158
49	1154	1170
50	1165	1182
51	1177	1194

	HM2H	OA
PSI	GPM	GPM
52	1188	1206
53	1200	1217
54	1211	1229
55	1222	1240
56	1233	1251
57	1244	1262
58	1255	1273
59	1266	1284
60	1277	1295
61	1287	1306
62	1298	1317
63	1308	1327
64	1318	1338
65	1329	1348
66	1339	1358
67	1349	1369
68	1359	1379
69	1369	1389
70	1379	1399

GET THE MOST OUT OF YOUR HOSE MONSTER® HARDWARE

FIRE PUMP TESTING SOFTWARE

Professional-grade software that helps you work better! Keep your reports clean, your results accurate, and your process streamlined with Hose Monster’s FPT Software.

LEARN MORE AT HOSEMONSTER.COM/RESOURCES

COEFFICIENT AND K-FACTOR TABLE FOR VARIOUS FLOW DEVICES

PITOTLESS NOZZLE™	K-FACTOR	COEFFICIENT	ORIFICE DIAMETER	psi RANGE	FLOW RANGE (GPM)
2" Pitotless Nozzle + Little Hose Monster	156.0	1.31	2"	10-70	493-1305
2" Pitotless Nozzle + 2 1/2" Hose Monster	164.8	1.38	2"	10-70	521-1379
2" Pitotless Nozzle + Open Atmosphere	167.2	1.40	2"	10-70	529-1399
1 3/4" Pitotless Nozzle + Little Hose Monster	104.7	1.15	1.75"	10-80	331-936
1 3/4" Pitotless Nozzle + 2 1/2" Hose Monster	106.6	1.17	1.75"	10-80	337-953
1 3/4" Pitotless Nozzle + Open Atmosphere	109.7	1.20	1.75"	10-80	347-981
1 1/8" Pitotless Nozzle + Little Hose Monster	37.2	0.98	1.125"	10-80	83-333
1 1/8" Pitotless Nozzle + 2 1/2" Hose Monster	37.4	0.99	1.125"	10-80	84-335
1 1/8" Pitotless Nozzle + Open Atmosphere	37.0	0.98	1.125"	10-80	83-331
1" Pitotless Nozzle + Little Hose Monster	27.2	0.91	1"	3-80	47-243
1" Pitotless Nozzle + 2 1/2" Hose Monster	27.6	0.93	1"	3-80	48-247
1" Pitotless Nozzle + Open Atmosphere	27.7	0.93	1"	3-80	48-248

IN-LINE PITOTLESS NOZZLE™	K-FACTOR	COEFFICIENT	ORIFICE DIAMETER	psi RANGE	FLOW RANGE (GPM)
2" In-line Pitotless Nozzle	165.3	1.38	2"	10-75	523-1432
1 3/4" In-line Pitotless Nozzle	109.9	1.20	1.75"	5-80	246-983
1 1/8" In-line Pitotless Nozzle	38.4	1.02	1.125"	5-70	86-321
1 1/2" In-line Pitotless Nozzle	31.7	1.06	1.0"	2-90	45-301

BIGBOY HOSE MONSTER™	K-FACTOR	COEFFICIENT	ORIFICE DIAMETER	psi RANGE	FLOW RANGE (GPM)
5-11psi (BigBoy Hose Monster)	382.9	1.38	3.05"	5-11	856-1270
12-38psi (BigBoy Hose Monster)	376.0	1.35	3.05"	12-38	1303-2318
39-55psi (BigBoy Hose Monster)	372.0	1.34	3.05"	39-55	2323-2759

NOTE: Due to the shape and size of the BigBoy Pitotless Nozzle, the BigBoy Hose Monster uses three different K-factors over its operating range.

2 1/2" Hose Monster®	K-FACTOR	COEFFICIENT	ORIFICE DIAMETER	psi RANGE	FLOW RANGE (GPM)
2 1/2" Hose Monster	168.67	0.906	2.5"	10-70	533-1411
1 3/4" Nozzle Insert	89.04	0.975	1.75"	10-70	282-745
1 1/8" Nozzle Insert	37.36	0.990	1.25"	10-70	118-313

4" & 4 1/2" Hose Monster®	K-FACTOR	COEFFICIENT	CONNECTION DIAMETER	psi RANGE	FLOW RANGE (GPM)
4 1/2" Hose Monster	331.07	0.548	4.5"	10-70	1047-2770
4" Hose Monster	339.65	0.712	4"	10-70	1074-2842

USING SOFTWARE

Use the table to the right if you are using software that requires the coefficient input to be less than '1.0.' Notice that the orifice diameter must be changed from its true diameter in order to accommodate the lower coefficient. This is necessary only for the 2" Pitotless Nozzle and the 3/4" Pitotless Nozzle.

DEVICE	COEFFICIENT	ORIFICE DIAMETER
2" Pitotless Nozzle + Little Hose Monster	0.99	2.30"
2" Pitotless Nozzle + 2 1/2" Hose Monster	0.99	2.36"
2" Pitotless Nozzle + Open Atmosphere	0.99	2.38"
1 3/4" Pitotless Nozzle + Little Hose Monster	0.99	1.88"
1 3/4" Pitotless Nozzle + 2 1/2" Hose Monster	0.99	1.90"
1 3/4" Pitotless Nozzle + Open Atmosphere	0.99	1.93"

NOTE: If your software uses the Theoretical Discharge Formula, found in NFPA 291, 4.7.3, the coefficient of discharge can be used to produce flow rates that will match our flow charts.

A HAND-HELD PITOT DIRECTLY AT A HYDRANT OUTLET

OUTLET TYPE	COEFFICIENT
Outlet smooth and rounded	0.9
Outlet square and sharp	0.8
Outlet square and projecting into barrel	0.7
If a stream straightener is used	0.95

CLASSIFYING AND MARKING OF HYDRANTS

Rated Capacity at 20psi	Class	Marking Color of Hydrant Tops and Nozzles
≥1500 GPM	AA	Light Blue
1000-1499 GPM	A	Green
500-999 GPM	B	Orange
≤499 GPM	C	Red

The above are the NFPA hydrant classifications and color marking for various rated capacities. Source NFPA 291, Chapter 5 2019

900 Edwards Brothers Drive, Lillington flow test - Monday, December 16, 2024