FPST 2483 Water Supply Analysis – Hands On Name: Lin Xinyu

PART A

Objective: After completing this laboratory exercise the student will:

1. Be able to conduct hydrant flow tests and graphically represent flow test results.
2. Recognize that using multiple flow hydrants or outlets will yield the same curve as using single hydrants or outlets.

Procedure:

Watch the lab activity at OSU and then participate in the lab at SWJTU.

1. Using the indicated flow and test hydrants a flow test is to be conducted using a single outlet on the flow hydrant. Results are to be graphically recorded.

   Static: 53 psi

   Residual: 37 psi

   Orifice Diameter: $2\frac{9}{16}$ in

   Orifice Cd: 0.9

   Pitot Pressure: 48psi

   Calculated Flow: 1221 gpm

2. Using the indicated flow and test hydrants a flow test is to be conducted using two outlets on the flow hydrant. Results are to be graphically recorded.

   Static: 53 psi

   Residual: 34 psi

   Orifice 1 Diameter: $2\frac{9}{16}$ in

   Orifice 2 Diameter: $1\frac{3}{4}$ in

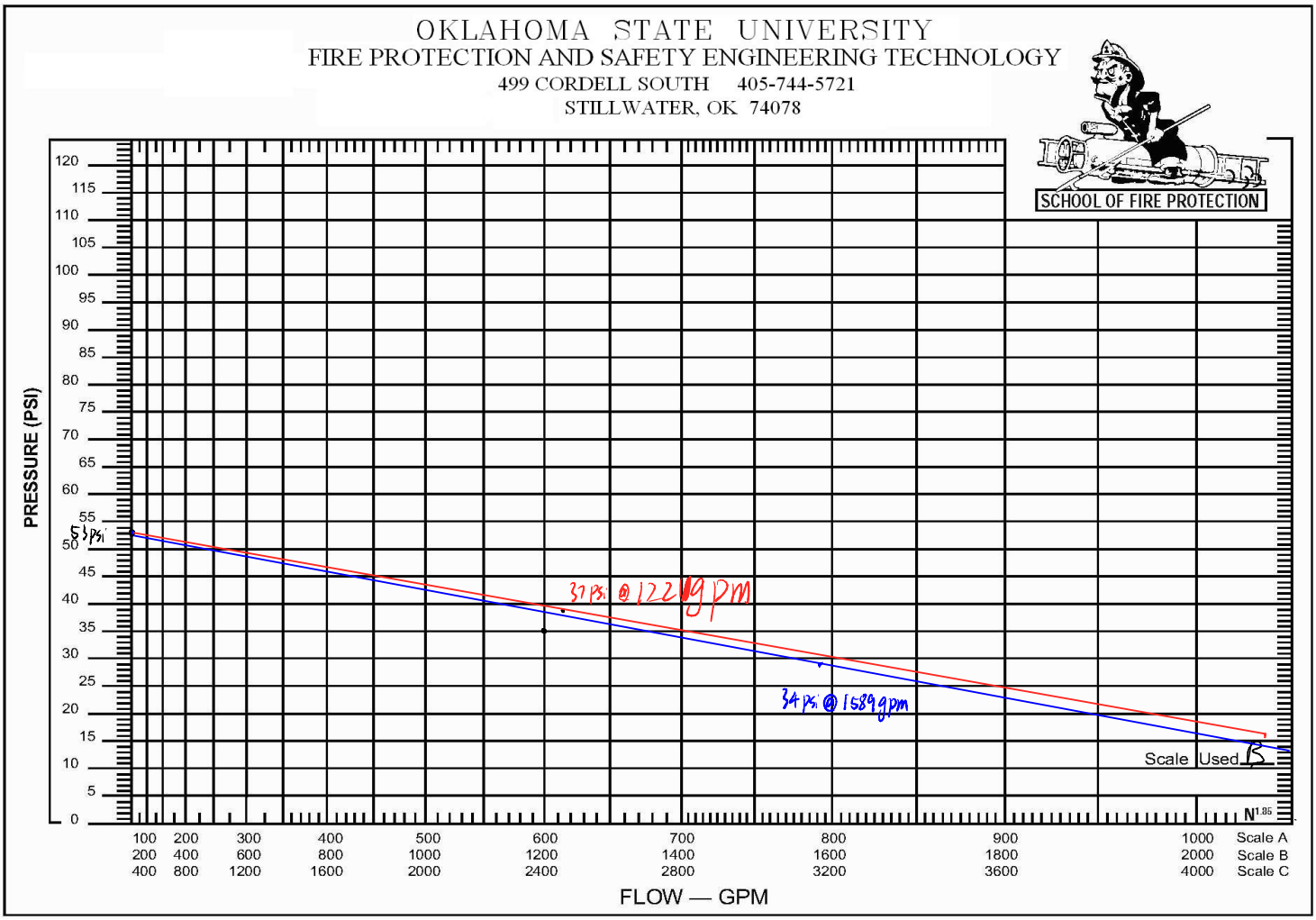
   Orifice 1 Cd: 0.9

   Orifice 2 Cd: 0.97

   Pitot Pressure 1: 37 psi 1072 517 Pitot Pressure 1: 34 psi

   Calculated Flow (total): 1589 gpm

3. Results from your test are to be plotted on the graph below.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SCHOOL OF FIRE PROTECTION
PRESSURE (PSI)
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
53psi
37psi @ 1229gpm
34psi @ 1589gpm
Scale Used B
N1.85
100 200 300 400 500 600 700 800 900 1000 Scale A
200 400 600 800 1000 1200 1400 1600 1800 2000 Scale B
400 800 1200 1600 2000 2400 2800 3200 3600 4000 Scale C
FLOW — GPM