

ESSENTIALS OF SURFACE WATER TREATMENT TRAINING

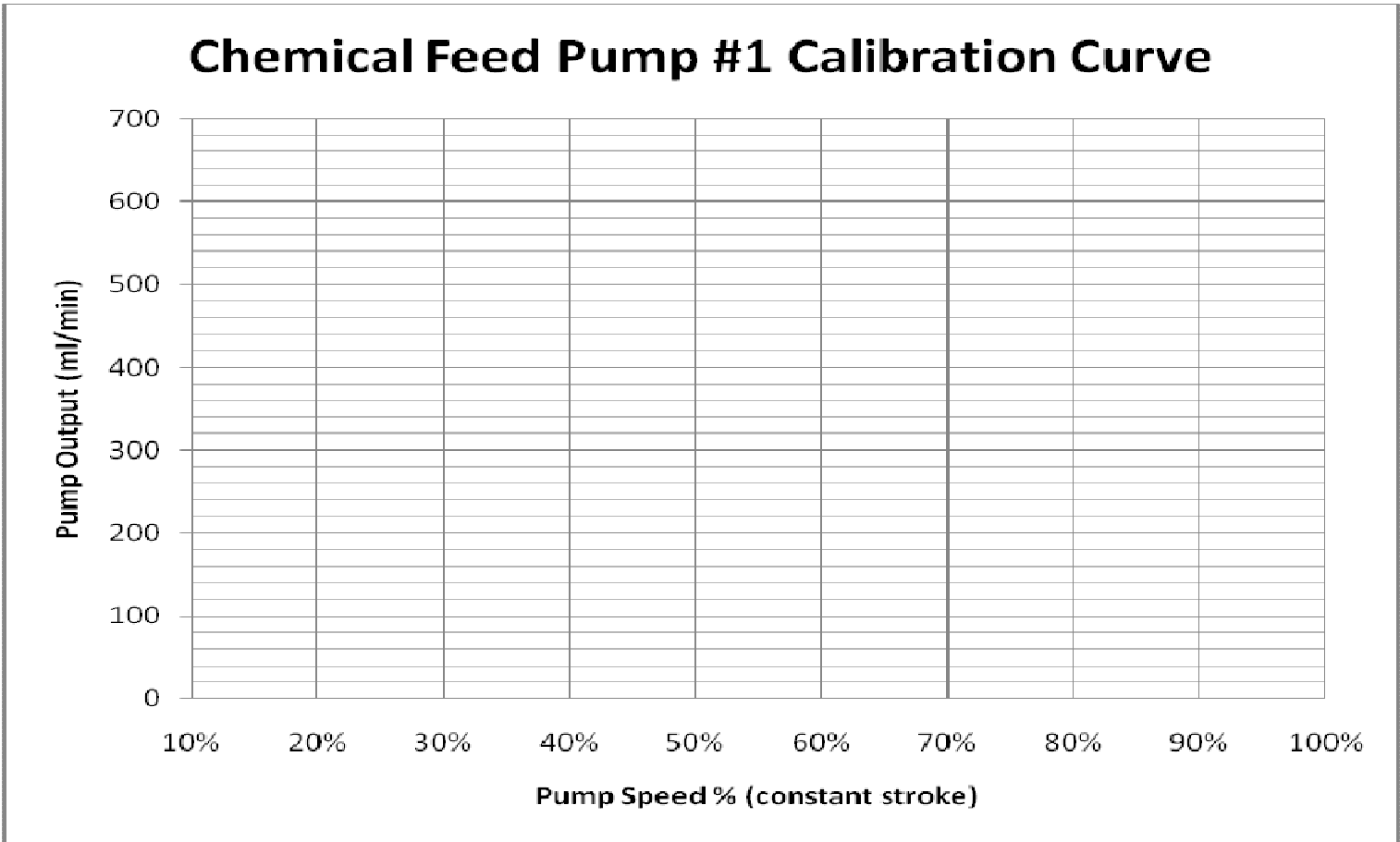
Exercise #3: Creating a chemical feed pump curve

Directions: Use the data provided in the examples below to create a pump curve. Pump curves should be smooth and fairly linear. A bouncing or jagged pump curve indicates the pump needs maintenance. Maintenance needed may include cleaning, diaphragm replacement and/or seal replacement.

Feed pump #1 pump curve data:

Setting	Time	Volume	Flow Rate
% Speed	Minutes	ml	ml/min
10%	3	60	20
20%	3	360	120
30%	3	420	140
40%	3	810	270
50%	3	900	300
60%	1	450	450
70%	1	400	400
80%	1	525	525
90%	1	530	530
100%	1	575	575

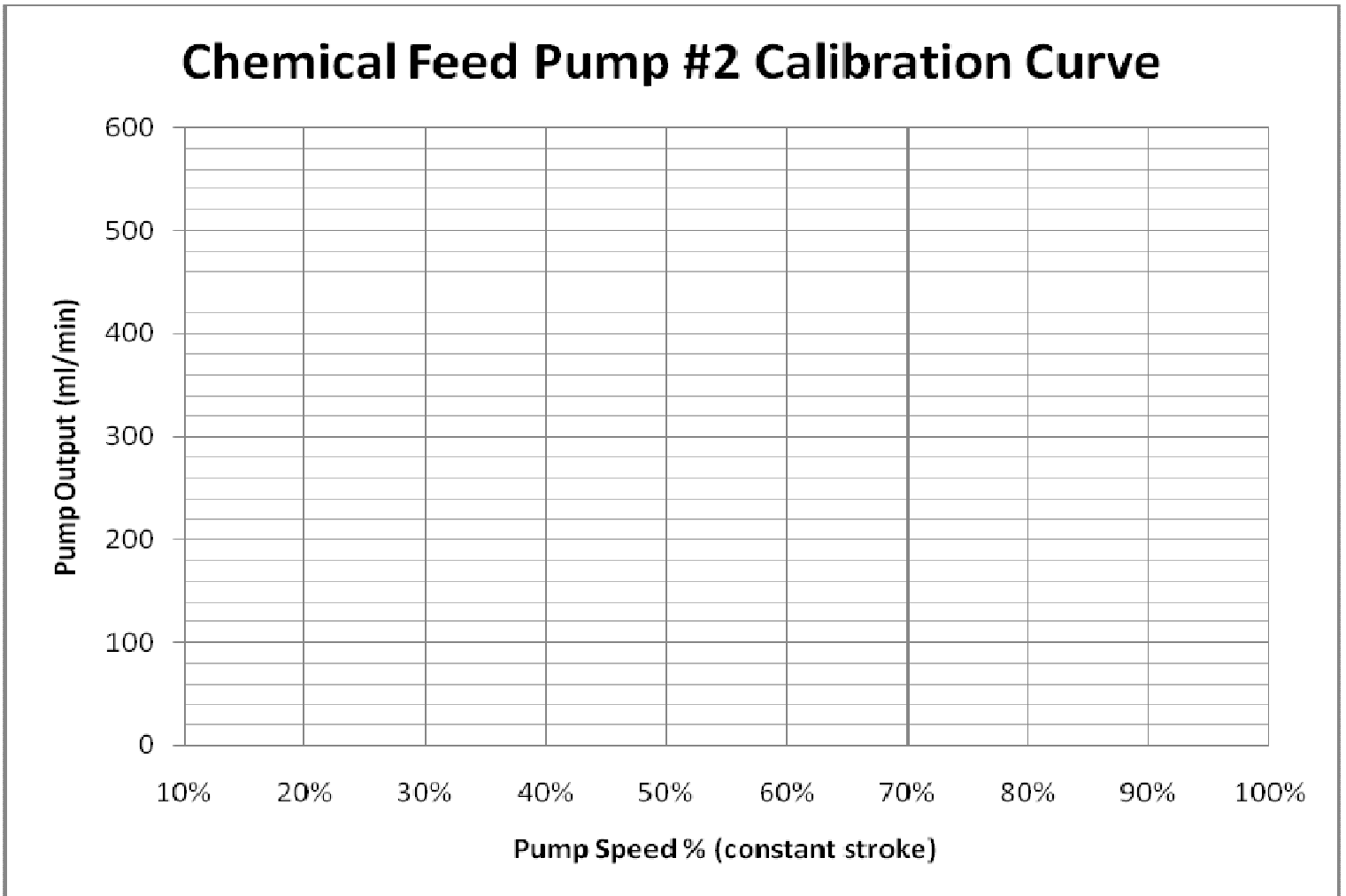
Plot the data points on the graph. Does the pump need maintenance? _____



Feed pump #2 pump curve data:

Setting	Time	Volume	Flow Rate
% Speed	Minutes	ml	ml/min
10%	3	120	40
20%	3	270	90
30%	3	480	160
40%	3	690	230
50%	3	960	320
60%	1	400	400
70%	1	460	460
80%	1	500	500
90%	1	540	540
100%	1	560	560

Plot the data points on the graph. Does the pump need maintenance? _____



Bonus question: Referring to feed pump #2 data above, if you normally have your speed set at 50% in order to maintain 1 ppm of chemical, what speed do you need to change it to if you do a new pump curve and get the following results:

Feed pump #2 NEW pump curve data

Setting	Time	Volume	Flow Rate
% Speed	Minutes	ml	ml/min
10%	3	60	20
20%	3	120	40
30%	3	270	90
40%	3	480	160
50%	3	690	230
60%	1	320	320
70%	1	400	400
80%	1	460	460
90%	1	500	500
100%	1	540	540

Answer: _____