

667326

RRGE WELL #1 PUMP

TEST 105 INSTRUCTIONS

Attached is a copy of the data sheet to be used during the test and a sketch showing the location of the instruments to be read. Each item on the data sheet will be explained below with notes on reading the instrument. It is important readings be taken the same each time so as to minimize human error. If a needle is oscillating record the average.

E. T. - Time the readings were taken, 0800 - 1700, 2300 etc.

Q Δ P - The pressure drop across the orifice plate. We hope to operate at about 4.3 psi and no lower than 3.0 psi.

QF - The flow rate in gpm taken from the orifice curve of flow vs Δ P. A Δ P of 4.3 psi corresponds to a flow of 900 gpm.

PWH - This is the pressure above the water in the well and should read about 30 psig.

PDT - This is the nitrogen pressure required to bubble gas out the open end of the tube down hole and is an indication of water level above the pump inlet. (The end of the tube is 5.31 ft above the pump inlet.) To read this gage first increase the gas pressure with the regulator (turn clockwise) until it stops. Then back the regulator off a turn and read the gage. Read but don't record the bottle supply pressure. If it approaches bubbler pressure it will be necessary to change bottles.

ρ W - The density of water at the temperature on TPD. A chart of density vs temperature will be available. For 270° F ρ W = 58.22 lb/ft³.

WH - This is the head of water over the pump inlet and is found as follows:

$$WH = (PDT - PWH) \frac{144}{\rho W} + 5.31 \text{ ft}$$

WH will not be allowed to go below 100 ft.

PPD - This is pump discharge pressure and will be maintained between 140 psig and 160 psig.

TPI - This was a down hole temperature instrument that no longer works.

- TPD - Temperature of the water leaving the well. Three TC's are available. Instructions on which one to read will be given when the test starts.
- AMP - Pump current which will run about 60 amps is shown and recorded on the pump panel and will be watched for a change. The current recorded on the data sheet will be read with a clip-on on the pump power cable. Change the chart on the recorder at 2400 hrs each day and fill in the date off-time off on the old chart and date on-time on on the new chart. Also mark the new chart "Test 105."
- General - Be sure and mark the sheet number, test number and date on each new data sheet.

If the pump should shut down for any reason, immediately close one of the ball valves in the 8 inch line and then close the outer 8 inch valve on the Christmas tree. This is necessary to keep the pump from windmilling. Then start recording PWH at 5 min. intervals until it returns to normal well head static pressure.

If the pump shuts down, there is any unexpected change in the data being recorded, flow and/or level are approaching 750 gpm and 100 ft or anything else unusual or that you don't understand call one of the following immediately:

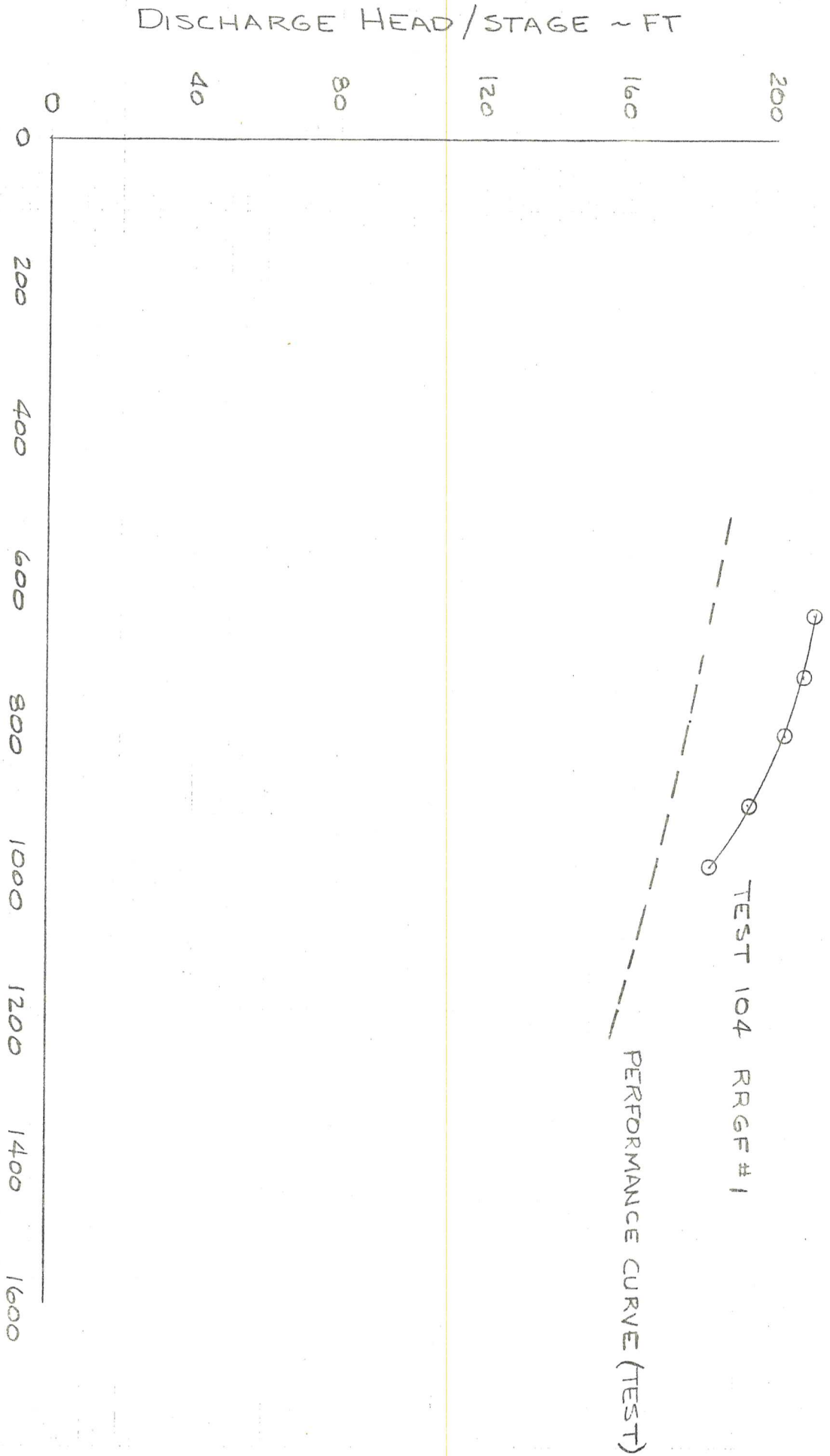
D. H. Suckling 2508, 2507, 2505, 2246 or 524-1545

C. G. Cooper Same as above

R. D. Sanders 1800, 1781, or 522-5516

PUMP PERFORMANCE COMPARISON

FIGURE 3



12-18-75 WLL

FLOW RATE ~ GPM

RRGF WELL No. 1

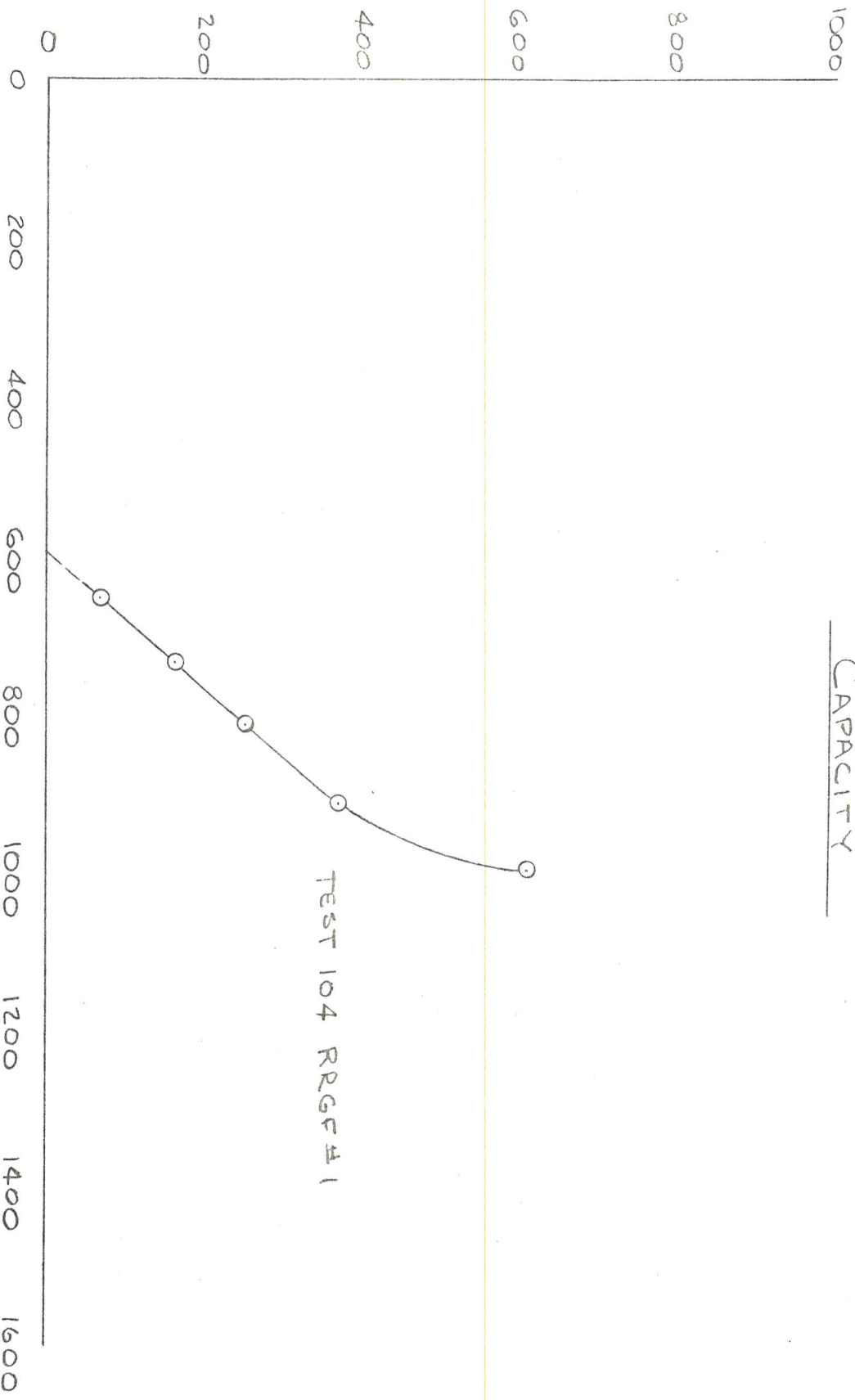
DRAWDOWN

VS

CAPACITY

FIGURE 2

WATER LEVEL BELOW SURFACE ~ FT



12-18-75 WAA

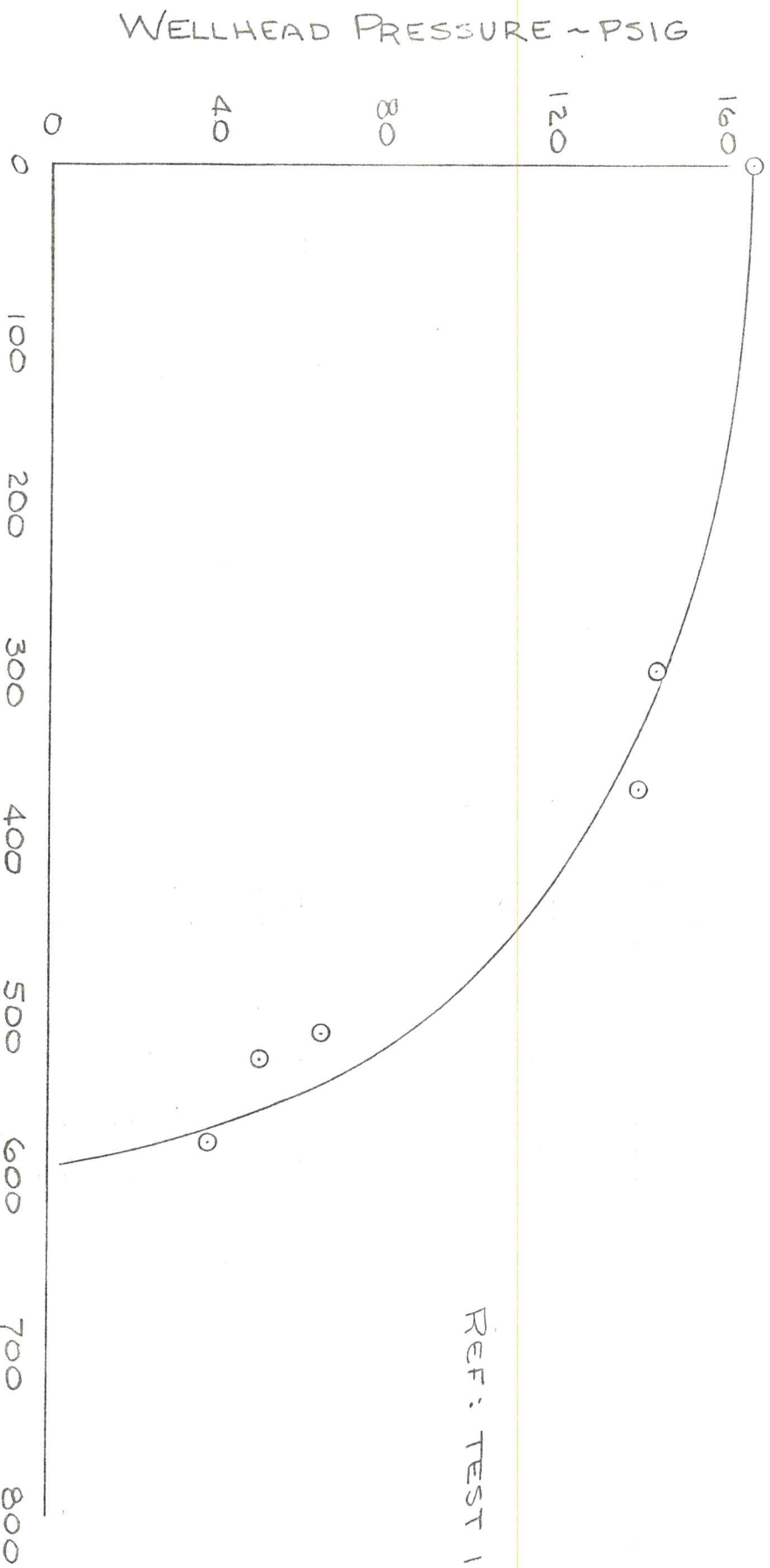
FLOW RATE ~ GPM

TEST 104 RRGF # 1

RRGF WELL No 1

ARTESIAN HEAD VS FLOW

Figure 1



REF: TEST 102

12-30-75 W.H.A.

FLOW RATE ~ GPM