PUMPING PLANT INVENTORY AND EVALUATION WORKSHEET

LANDOWNER NAME _____ Field Or Unit _____

Prepared by: _____ Date _____

_____Section _____ Township _____ Range _____ County: _____

Step #1: General Power Unit Inventory:

☐ Electric motor(s) for: the Main Pump the Booster (if used)

Rated rpm _____ _____

Rated hp _____ _____

OR

☐ Internal combustion engine:

Make & Model_____

Fuel Type _____

Continuous rated hp at output shaft _____ hp at_____ rpm

Step #2: Power Unit to Pump Connection:

Gear or belt drive mechanism:

Type: (check one) ☐ direct drive ☐ gear drive ☐ belt drive

_____ rpm at driver _____ rpm at pump

Condition and age of power plant: _____

_____

Other Comments: _____

_____

Step # 3 – Pump Performance & Inventory Data - Complete one of the following:

☐ Field Pump Test Data – (Page 2)

☐ Deep Well Pump Inventory - (Pages 3 & 4)

☐ Centrifugal Pump Inventory - (Pages 5 & 6)

Pumping Plant Inventory and Evaluation - Field Pump Test Data

Observation No.	Flow (gpm)	Well Pressure (psi)	Drawdown Pumping Level (ft)	Constant RPM ☐ Motor RPM ☐ Pump RPM
1				
2				
3				
4				
5				
6				
7				

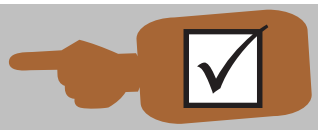
NOTE: Field pump test data must show data for all columns above. A minimum of four different points of flow at a constant rpm shall be documented.

Date of Test: _____ (recommended within the last 2 years)

Test completed by: _____

Contact Number of Tester: _____

Save As and Print Pages 1-2

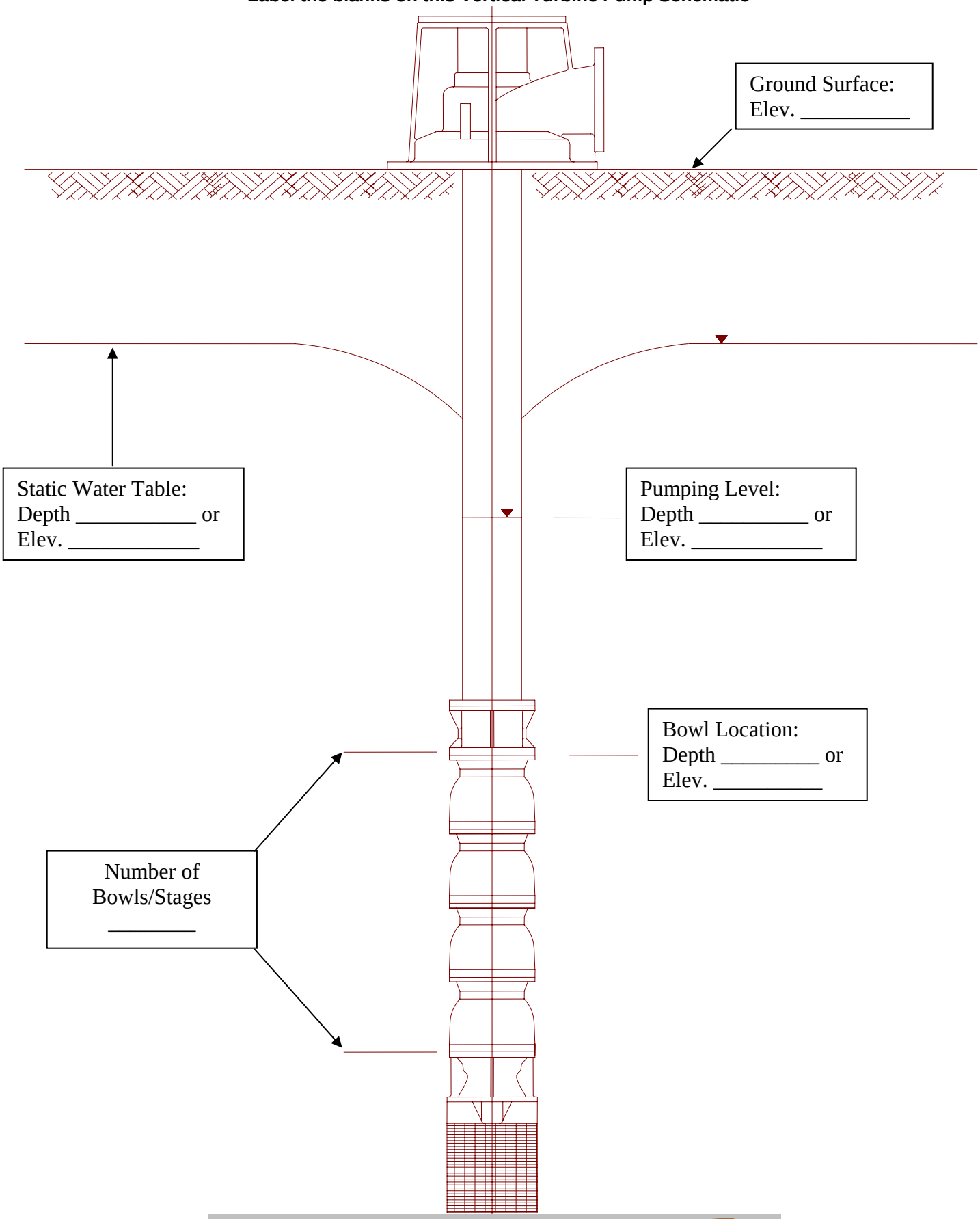


Pumping Plant Inventory and Evaluation: Deep Well Pump Inventory

A	Type: (turbine, submersible, other)	
B	Make or Brand Name	
C	Approximate Age of Pump	To be installed, brand new
D	Model	
E	Pump Serial Number	
F	Pump Curve(s) attached (Y / N)	
G	Number of stages	
H	Impeller Type (Semi-Open or Enclosed)	
I	No. of Impeller(s) @ diameter (inches)	@
J	No. of Impeller(s) @ diameter (inches)	@
K	No. of Impeller(s) @ diameter (inches)	@
L	Rated flow rate (gpm) / Head per stage[1/] (ft)	
M	Total Dynamic Head (ft)	
N	@ RPM	
O	Impeller Efficiency [2/] (%)	%
P	Horse Power per Stage [3/]	
Q	Nominal column diameter (in)	
R	Column length (ft)	
S	Line shaft and enclosing tube size (oil lubricated only)	

[1/] Use the average head per stage when working with pumps that have multi sized impellers
[2/] Use the average impeller efficiency when working with pumps that have multi sized impellers
[3/] Use the average horse power per stage when working with pumps that have multi sized impellers

Label the blanks on this Vertical Turbine Pump Schematic



Save As and Print Pages 1, 3 and 4

Pumping Plant Inventory and Evaluation: Centrifugal Pump Inventory

A	Make or Brand Name	
B	Approximate Age of Pump	To be installed, brand new
C	Model	
D	Pump Serial Number	
E	Pump Curve(s) attached (Y / N)	
F	Impeller diameter (inches)	
G	Rated flow rate (gpm)	
H	Total Dynamic Head (ft)	
I	@ RPM	
J	Impeller Efficiency (%)	%
K	Brake Horse Power	

Net Positive Suction Head Available (NPSH $_{\text{available verses required}}$)

Guidance to complete the following section can be obtained from the NRCS National Engineering Handbook Part 652 IRRIGATION GUIDE Chapter 7, pages NE7-58 thru NE7-70.

☐ Check this box to show NPSH numbers in lines 1,2,3 and 4 below.

☐ Check this box to hide NPSH numbers in lines 1,2,3 and 4 below.

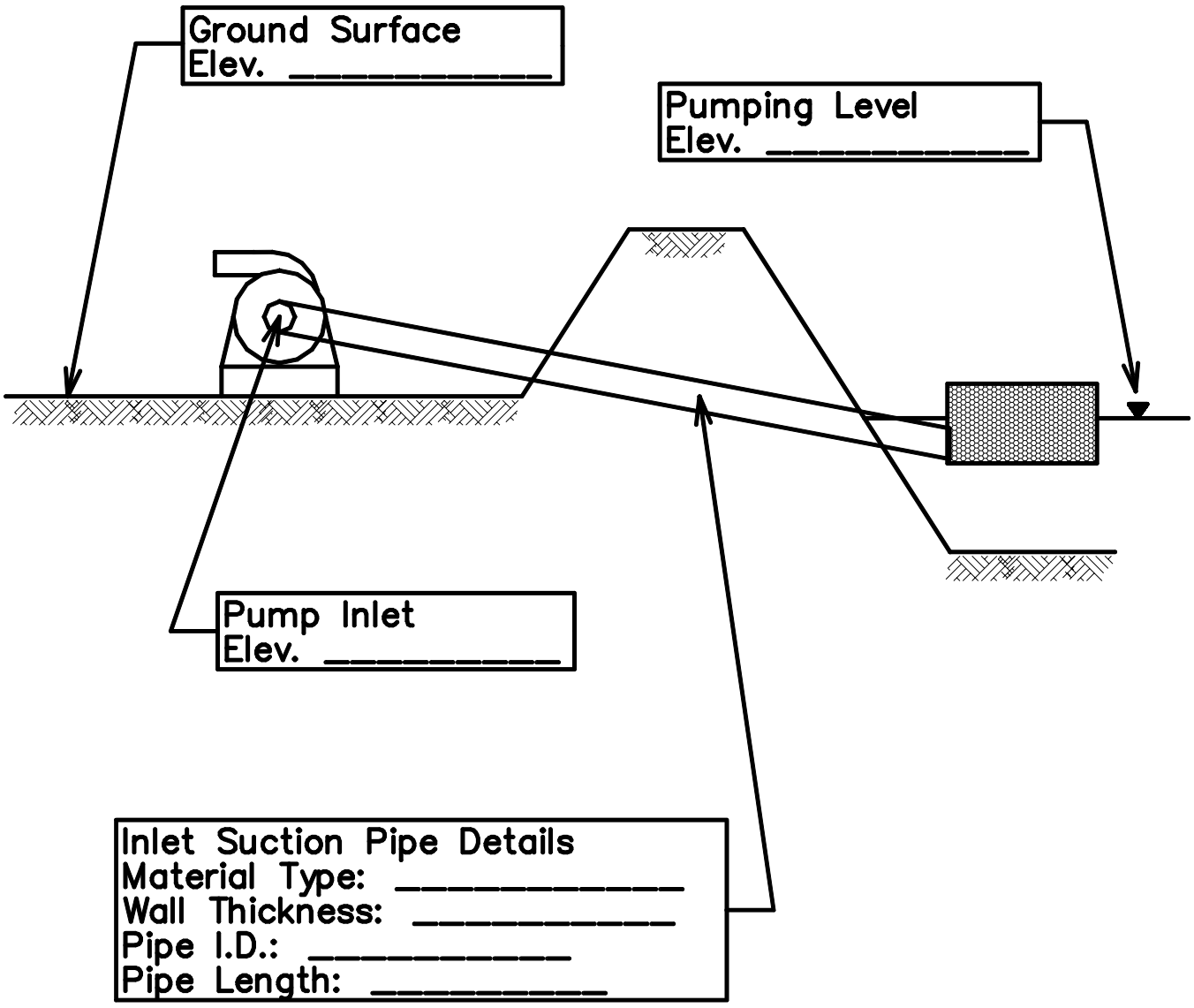
1. Atmospheric pressure for mean sea level elevation of _____ feet
2. Minus vertical lift _____ feet
3. Minus friction loss and minor losses in suction pipe or pump column _____ feet
4. Minus vapor pressure _____ feet
5. Minus safety factor __+2__ feet

NPSH $_{\text{available}}$ = Line 1 – Line 2 – Line 3 – Line 4 – Line 5 = _____ feet

NPSH $_{\text{required}}$ from the Pump Characteristic Curve is = _____ feet

NPSH $_{\text{available}}$ must always be equal to or larger than the NPSH $_{\text{required}}$. It not, select a different pump or inlet suction pipe until the requirement is satisfied.

Label the blanks on this Centrifugal Pump Schematic



Save As and Print Pages 1, 5 and 6