U.S. Department of Agriculture
Natural Resources Conservation Service

MT-ENG-21A
Rev. 12/02

AUTOMATIC PRESSURE STOCKWATER PIPELINE
HYDRAULIC COMPUTATION WORKSHEET

Land user _____ Field Office _____
Job description _____
Location _____
Planner _____ Date _____ Checked by _____ Date _____

(1) Station	(2) Reach Length (ft)	(3) Pipe Elev.	(4) Design Flow Rate (gpm)	(5) Nominal Pipe Diameter (in)	(6) Pipe Type	(7) Pipe Pressure Rating (psi)	(8) Friction Factor H_f/100ft (ft/100)	(9) Reach Total H_f (ft) (2)/100 x (8)	(10) HGL Elev. (from CP elev)	(11) Max. Pressure on Pipe (psi) (OFF-(3)) x .433	Comments
											at pump

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Land user _____

Job description _____

Farm No. _____ Tract No. _____ Field No. _____ County _____

Designer _____ Date _____ Checked by _____ Date _____

Water surface elevation during pumping (WS) _____

Critical point along profile (CP): Station _____ Elevation _____

Clearance Head (CH) at critical point: _____ ft x .433 = _____ psi

Cut in/Cut out pressure range (PR): _____ psi x 2.31 = _____ ft

Losses in plumbing at pump (PL): _____ ft

Minimum ON elevation = CP elevation + CH ft = _____ + _____ = _____

ON elev based on HGL = HGL_{pump} + PL – (PR ft/2) = _____ + _____ – (_____ /2) = _____

ON elevation used (greatest elevation of above alternatives): _____

OFF elevation = ON elevation + PR ft = _____ + _____ = _____

Total Dynamic Head (TDH) = OFF elev – (PR ft/2) – WS = _____ – (_____ /2) – _____ = ____ ft

Pump HP = _____ HP (Select from pump curves)