

THEORETICAL HORSEPOWER EQUATION WORKSHEET

Water Right No.: 94-8754
Reviewer Craig L. Saxton
Date of Review: 8/26/2015

	Option 1	OPTION 2	OPTION 3	
P/D No.:				
PUMP HORSEPOWER	0.75	3	0.75	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	7	7	20	
DISCHARGE PRESSURE	50	50	90	
FRICTION				
RATE OF FLOW (cfs)	0.038	0.15	0.020	AVE 0.07
(gpm)	16.9	67.7	9.1	

The above calculates the formula = $Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$

Assumptions: %70 efficiency.

Examiners Notes:

Exhibit #1 of claim states that original pump was 3/4 HP. I calculated lift to be 7' using contour lines on topo map.
Currently uses 3 hp pump.
Assumed 50 PSI discharge. Even if lift was 20" and discharge pressure was 90 psi, the theoretical capacity would be 0.02 cfs which is consistent with the recommendation.