



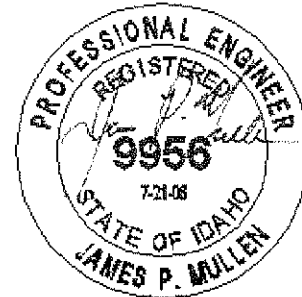
Technical Memorandum

TO: City of Blackfoot
Ron Harwell – Public Works Director
Richard Mangum – Water Superintendent
Christopher Meyer – Givens Pursley, LLC

FROM: Keller Associates, Inc.
Jim Mullen, P.E.
Jason Pettyjohn, E.I.T.

DATE: July 21, 2006

SUBJECT: Well Flow Rates



As per the request of the City, Keller Associates has performed flow testing of various main production wells used by the City of Blackfoot. Tests were performed for Wells 3 and 5. A summary of the results are shown in the Table below. Detailed test results for each well are attached for reference.

Well	Pressure (psi)	Flow Rate (cfs)	Flow Rate (gpm)
Well #3	40	1.84	825
Well #5	40	3.76	1685

To determine the flows presented in the above Table, a pump curve for each well has been calculated based on field observations. To construct the pump curve, each well was activated and then flowed against differing discharge pressures. The differing pressures were developed by inducing demands on the system by opening fire hydrants near each well. Opening a fire hydrant does not necessarily simulate a fire event. The purpose of inducing demands for these tests was to simulate possible peak day or peak hour demands. As the discharge pressure decreases, the flow from the well pump increases. It is this observed flow and pressure relationship that have determined a pump curve for each well pump.

For consistency and comparative purposes, each well pump flow rate has been presented in the above Table at 40 psi of delivery pressure. The pressure of 40 psi has been chosen as the reference standard because of current regulations that require the water system to have a minimum pressure of 40 psi during a peak day or peak hour demand minus fire flow demands.

In conclusion, each of the well pump tests performed by Keller Associates has determined that the above flow rates could be supplied at 40 psi of pressure, which could be experienced in a peak day or peak hour demand scenario.

If you have any questions please contact us.

WELL #3 **346 E. BRIDGE ST.**

MOTOR DATA

HP	60	Phase	3	Volt	460	Amps	150
Cycles	60	Speed (rpm)	1775	Serv. Factor	1.15		

PUMP CURVE DATA

Flow (gpm)	Pressure (psi)	Amps
750	47	-
835	39	-
900	33	-

OTHER DATA

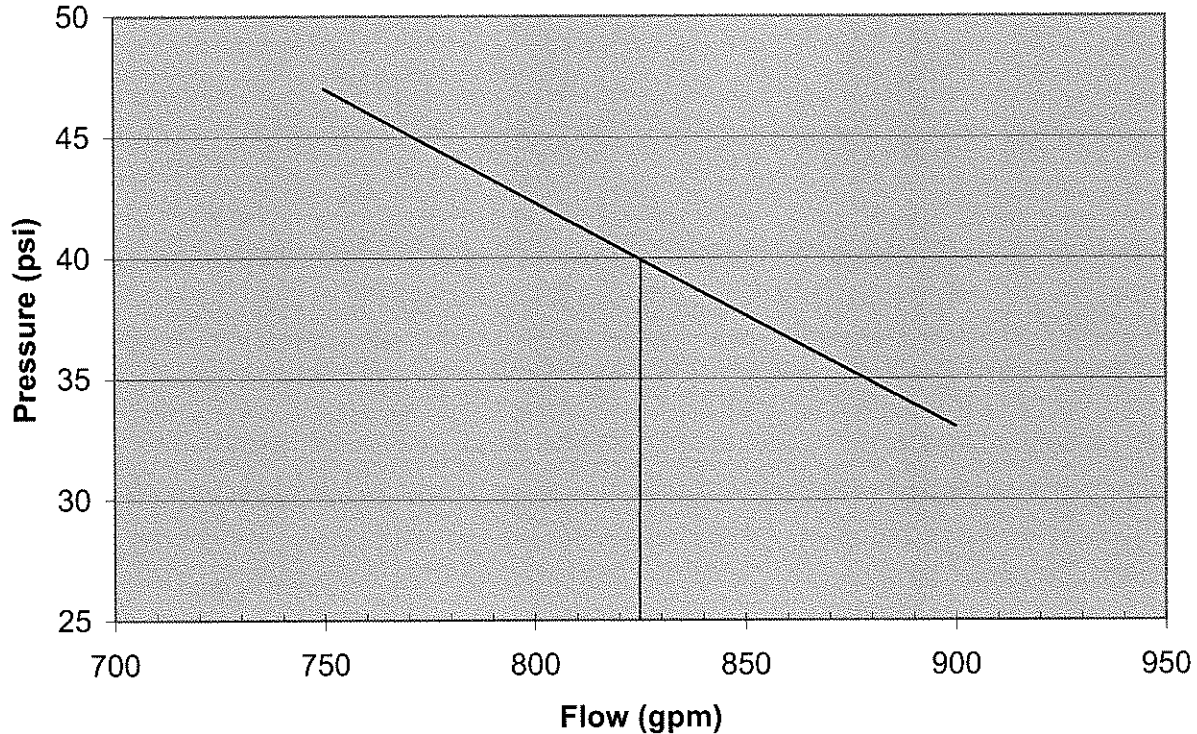
Depth to Bowls	80'	Depth of Well	99.5'	Casing Diam.	12"	to 83'
----------------	-----	---------------	-------	--------------	-----	--------

Date Drilled Unknown

- At 83' there is a smaller hole; either a smaller casing, the end of the casing, or some undetermined obstruction.

- Single speed motor control. Actuated by system pressure.

Well #3 Calculated Pump Curve



Flow @ 40 psi 825 gpm

