



MEMORANDUM

DATE: June 6, 2019

TO: Dan Duchniak

FROM: Kelly Zylstra

RE: Well No. 6 Emergency Well Pumping Equipment Repairs/Replacement

Well No. 6 is one of our largest producing wells and is key to our system when Well No. 3 or Well No. 10 are out of service.

On May 22, 2019, when Well No. 3 was temporarily out of service due to water main construction on Moreland, we tried to start Well No. 6. When it failed to start, we opted to use Well No. 7 instead.

On May 23, 2019, Well No. 6 failed to start a second time. A recording meter was installed at the control cabinet and another attempt was made to start the well. The well failed immediately (within 1 second) and on-site personnel noted an electrical fault. The recording meter showed no current spike on startup. Staff attempted to MEG test the well noting a 0-resistance reading across all phases to ground. Staff contacted Mike Cleary, an electrical expert we used for Well No. 10 earlier this year for assistance.

On May 24, 2019, at the suggestion of Mike Cleary, staff performed a low voltage high current test of the motor which consisted of applying 30 volts phase to phase with a control transformer. A "good" result will show a balanced current flow between all phases; our results were 0 current flow. Under Mike's direction, the voltage was increased to 60 volts again with 0 current flow. Mike suggested testing a known good Well, so the same test was performed at Well No. 8 resulting in 8.4 amps across all phases. With this info Mike Cleary is very confident that the problem with Well No. 6 is in fact "down the hole".

On May 28, 2019, staff disconnected the well pump at the junction box on the well head to perform a final Meg test. This again resulted in a 0 reading both phase-ground and phase to phase.

The estimate from Municipal Well & Pump for removal and inspection of the pump and motor is \$19,950. We authorized this work even though it is above Dan's authority because this is an emergency situation.

Well No. 6 contains a 400Hp Indar Motor and a Goulds 14RJMC pump that together produce 1,800 gallons per minute. The pump and motor have 2,135 hours of runtime since installation in November of 2015. The pump and motor prior to that replacement had been installed in 1997.

Well No. 6 will be a key part of our ability to provide water during the summer months when the large pump and motor for Well No. 10 are ready to reinstall.

The pump and motor, once removed, will be inspected and it will then be determined whether rebuilding that motor, or replacing it with a new one, is in the best interest of the utility.

The duration of the motor inspection/repair or replacement is not known but based on the Well 8 Failure of 2018 could take up to four months.

Assuming a new motor, pump and cabling are needed, the cost of this work is estimated to be up to \$200,000.

Recommended Motion: The Waukesha Water Utility Commission hereby declares that an emergency situation exists, as described in Section 62.15(1)(b) of the Wisconsin Statutes, and directs the General Manager to negotiate a contract with Municipal Well & Pump to remove and inspect the existing Well No. 6 pumping equipment, provide the replacement equipment needed and then reinstall the equipment for a price not to exceed \$200,000.

Resolution #6-20-19 of the WAUKESHA WATER UTILITY

Well #6 Repairs

June 20, 2019

WHEREAS, electrical difficulties have been experienced with Well #6 pumping equipment; and

WHEREAS, the customer's health and safety could be in jeopardy; and

WHEREAS, the situation calls for replacement of the submersible pumping equipment as soon as possible to ensure the ability of the Utility to provide required radium compliant water; and

THEREFORE BE IT RESOLVED, that The Waukesha Water Utility Commission hereby declares that an emergency situation exists, as described in Section 62.15(1)(b) of the Wisconsin Statutes, and directs the General Manager to negotiate a contract with Municipal Well & Pump to remove and inspect the existing Well No. 6 pumping equipment, provide the replacement equipment needed and then reinstall the equipment for a price not to exceed \$200,000.

Adopted on _____.

WAUKESHA WATER UTILITY COMMISSION

Joseph J. Piatt, President

G. J. Zinda, Secretary