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**Madison Water Utility** mwu

# Water Supply Report

June 19, 2008

## Status of Summer Wells

UW #17 was brought on line May 1st and is operational.
UW # 6 was brought on line May 15th and is operational.
UW #27 was brought on line June 13th and is operational.
UW #29 should be in service by July 1st. It is currently being flushed and will be sampled for bacteria within the next day or so. This well will operate in "standby" mode (reservoir filled and then pumped twice a week into the distribution system for four hours.).
UW #8 is currently out of service. Chemicals have been delivered to the site and plans are underway to put this well into service by July 1st.
UW #10 is currently out of service. Given the saturated ground conditions, it is not expected that lawn irrigation will place demands on the system. It has therefore been decided to keep UW #10 out of service for the time being. This will be re-evaluated again in early July to determine if this well needs to be put into "reserve" mode (reservoir filled and then discharged to the storm sewer once a week.)

## UW #26 - Deep Well Pump Failure

The deep well pump at Unit Well #26 failed during the first week of June. It is currently out of service.

Vibration levels at the deep well began to increase and flow rates began to drop throughout the week of June 1st. On June 4th, vibration levels escalated to a point that the well was shut down. At this time, it appeared that either the bearings on the motor were bad or that the pump had failed. The decision was made to call in Municipal Well & Pump to remove the pump and approximately 440' of casing/shaft from the hole.

Staff removed the pump motor from the well on June 5th. The motor was transported to Electric Motors, Inc. and checked over by their technicians. The motor, including the bearings, was confirmed to be ok.

Municipal Well subsequently pulled the pump and casing on June 9th & 10th. The pump was dismantled and found to have failed. It is not fixable and will not be reconditioned. Staff is currently trying to determine what may have caused the pump failure. As of yet, no determination has been made. The shaft was transported back to the Operations Center and is currently being checked for straightness. Preliminary results indicate some slight deviations but nothing that would have contributed to the pump failure.

A new pump was located, ordered, and should arrive by June 23rd. It is estimated that it will take Municipal Well & Pump two to three days to install the new pump and casing. Staff will then reinstall the motor and begin the process of bringing the well back on-line. We are hopeful that UW #26 will be up and running by July 1st. While it is down, staff is also looking into the logistics and the cost of installing a variable frequency drive (VFD) on this deep well.

## #126 Sphere/ #26 Reservoir – Low Water

Residents on the southwest side of Madison experienced low pressures and a lack of water for a period of about 3 hours on June 13th (Father's Day.) The homes affected were located north of Mid Town Road and west of Elver Park. The problem was identified as a malfunctioning booster pump, which was subsequently repaired. System pressures were back to normal by early afternoon.

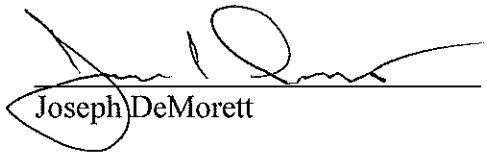
The Water Operator began receiving calls of low pressure and no water from the area serviced by UW #26 around 10:40 AM. Upon investigation, the operator found that the #126 sphere had unexpectedly emptied. The booster pumps that normally fill the sphere when water levels fall below a certain level had failed to start. The operator had received no alarms over the SCADA system.

Staff were called out to the site to attempt to manually restart the boosters. Initial attempts to start them were unsuccessful. It was discovered that the air compressor that runs the water level monitoring system and the booster pump priming system were both shut off. The water level in the #26 reservoir was found to be lower (9') than operating procedures (14') call for. The operator was unaware of the low level because of the air compressor being shut off. At least 12' is needed in the reservoir to prime the pumps without operating the mechanical priming system which was shut off.

Both systems were turned back on but by this time the boosters had become air locked and still would not start. Staff valved off a section of the system and was eventually able to create enough suction to restart the boosters. The booster pumps were running and the sphere began filling again at approximately 1:30 PM. A press release was subsequently issued.

The operators normally receive an alarm if the level within the sphere drops below a certain point. However, with UW #26 deep well out of service and under repair, the unit had been switched to 'out of service' mode in the SCADA system. It was determined that this also disabled the alarms for the #126 sphere. As a result, there was no indication from the SCADA that the sphere level was getting too low or that the boosters had failed to start when they were supposed to. To rectify this, the system currently remains in the "in service" mode even though it is not on-line. The new SCADA system, which the Utility is switching to, is designed to send alarms even when the site is in the 'out of service' mode.

Submitted by:



Joseph DeMorett