

Glen Hills and Homestead County Parks Coliform Bacteria and Nitrate Well Contamination Restoration and Treatment Costs to Address Well Failures

Glen Hills County Park has 3 wells constructed in 1972, the Picnic Area, Group Area and Campground, these wells are 44 years old and their mechanical systems are failing. The Picnic and Group area wells repeatedly tested positive for coliform bacteria in 2015 and 2016. Positive tests have occurred several times since 1996, however previously shock treatment with chlorine was effective. In 2015 and 2016 chlorine treatment failed to prevent the coliform bacteria from reoccurring. This summer, the Wisconsin Department of Natural Resources required the Picnic and Group area wells and drinking fountains be closed to the public; they cannot be re-opened until steps are taken to resolve the coliform bacteria problems. All three wells and their mechanical systems are failing to operate cleanly -- there are no well-construction reports, the pressure tanks are buried underground which does not meet current code, and well caps and pumps do not meet current code. Since information is unavailable on well depth and casing, initially DNR was requiring installation of new wells.

Wisconsin State Code required a level 2 well assessment be completed to determine cause and location of the coliform bacteria problems. The level 2 assessment determined the following steps are required to resolve the problems and allow the wells/drinking fountains to be utilized by the public:

- Well and pump inspections and creation of well logs
- New above-ground pressure tanks
- New well caps
- New well pumps
- Follow-up water sampling
- Electrical service, connection and housing for pressure tank at Group Area well

If the well problems are not resolved yet in 2016/early 2017 the DNR will require the wells be abandoned and new wells drilled for approximately \$30,000 each plus electrical service. A functioning well is required in all public campgrounds. If the Group Area well is not upgraded and restored, the Prairie View/Group Area campsites would have to be closed.

The Campground well is not showing problems at this time but it would be cost-effective to upgrade the well system to be compliant with current standards to avoid future problems and to minimize a potential disruption in water use during the summer camping season. Upgrade would include:

- Well and pump inspection and creation of well log
- New well cap
- New well pump
- New above-ground pressure tank, housed in the existing campground shower building.

The **Homestead Park well** has had nitrate levels above safe drinking water standards for six years. During this timeframe, the well/drinking fountains have been closed to the public and bottled drinking water has been purchased for full-time and seasonal park staff. The Homestead well was constructed in 2002. At the time every precaution was taken to avoid nitrate contamination, the well is 325 feet deep, is 10-inches wide with a 6-inch casing going down 313 feet, the cavity between the well and casing is grouted to 303 feet.

A Commercial Reverse Osmosis Water Treatment system would reduce the nitrate concentration to acceptable levels. When nitrates reach critical enforcement levels, the county will be faced with corrective action measures up to and including drilling a new well.

The Community Development Department is requesting \$72,000 in contingency funds to address upgrades, restoration and treatment costs for well failure due to coliform bacteria and nitrate contamination at Glen Hills and Homestead County parks.

Cost Estimates, see attached:

- Pelke Plumbing & Well Drilling Inc.
 - Pull and Evaluate existing wells 3 wells x \$825 = \$ 2,475
 - 5 HP 60 GPM Pitless Pressure System: 60 GPM@60 psi 3 wells x \$7,875 = \$23,625
- St. Croix Electric Extend Electrical Service to Group Area \$29,710
- Lance Jensen Electric Electrical Connection to Tank & Well Housing \$ 5,300
- New Well Housing for Group Area well \$ 1,000
- New Drinking Fountain \$ 1,500
- Reverse Osmosis System installation at Homestead Shop & Drinking Fountains at Delta and Playground areas \$ 5,000
- WI Department of Safety & Professional Services Permits \$ 320
- *Subtotal* *\$68,930*
- 10% Contingency \$ 7,070
- **Total Cost:** **\$76,000**

Attachment: Glen Hills and Homestead Well Repairs 10-2016 [Revision 1] (4532 : Contingency Fund - Wells)