

**MWP
HIGHLIGHTS**

- On June 22, 2011 MWP provided training through ILRWA to nearly 70 operators and engineers in LaSalle, IL.
- MWP has worked 16 months in a row without a single safety incident.
- Projects currently in Progress:
 - Lincoln, IL - 3 Well Re-habs
 - Madison, WI - Test Well
 - Peoria, IL - New Pumps at 6 Wells
 - Hoffman Estates, IL - Well Rehab
 - State of WI, Union Grove - Well Modifications
 - Cedar Rapids, IA - Well Modifications at 8 wells
 - Eau Claire, WI - Well Rehabilitation

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Municipal Well & Pump is an Employee Owned Company



The Hole-Water Report

SUMMER 2011

Illinois Law Bans the Sale of Mercury Seals

Mercury is a liquid metal with a high surface tension which makes it a tempting choice for use in submersible pump seals. Mercury is also a very toxic element that causes severe kidney and neurological health problems when consumed or inhaled by humans either directly or indirectly.

Over the past 20 years there has been a growing concern over the use of mercury in the products we tend to use each and every day. That list includes thermometers, thermostats, switches, relays and even dental products. Over the years, states have enacted legislation that have dramatically reduced the amount of mercury used within these products. In some cases the use of mercury has been banned all together.

One specific product that has come under scrutiny is the mercury seal used in Byron Jackson® deep well submersible motors as manufactured by Flowserve. Each of these motors contain between 8.25 to 17.25 lbs of mercury depending on the size of the motor.

The mercury from these seals can enter your water well or can be spilled on the ground when a seal

fails or when maintenance is being performed on a well pump. Doing a search on the internet provides numerous instances of mercury spills in and around municipal and industrial water supplies. These spills like the ones in Hawaii⁽¹⁾, Idaho⁽²⁾, Arizona⁽³⁾ and more recently at an industrial site in Illinois⁽⁴⁾ have caused states to ban the use of these mercury seals.

The cost of cleanup for these types of spills can become very costly. It could require notification to the EPA, sealing off the bottom of a well, excessive pumping, above ground cleanup, sampling and testing and worst case - abandoning a well all together.

Byron Jackson® Mercury Seals will be banned from sale in Illinois after July 1, 2012

The recent spill at an industrial site in Illinois⁽⁴⁾ required a subcontractor to come in, pump off the contaminated water to a holding tank, treat the water for contamination and then discharged it at the EPA allowable rate. In addition the well itself was no longer usable for their process and an alternate water supply was

created. Total cost unknown, but presumed very expensive.

On Friday, August 19, 2011, the Governor of Illinois signed legislation that prohibits the sale and distribution of mercury "seals". See Amended Senate Bill 1213, page 14, section 27, item 13⁽⁵⁾. The bill was passed unanimously by both the Senate and the House. This modification to the mercury bill takes affect on July 1, 2012.

Per discussions with Becky Jayne of the Illinois EPA, this law bans the sale of mercury seals used on submersible motors in water wells and includes those produced by Flowserve® for Byron Jackson® Type H motors.

Since mercury seals will no longer be available for sale in Illinois, owners of water systems will be required to use mechanical seals when installing new equipment or when replacing old mercury seals.

If you have questions or concerns on how this change in the law affects your water system, please give Municipal Well & Pump a call to discuss your unique situation.

Resources:

1. Hawaii State Dept of Health, The Water Spot, Sept, 2006, <http://hawaii.gov/health/environmental/water/sdwb/newsletter/pdf/10spot07.pdf>
2. Idaho Department of Environmental Quality, Drinking Water & Mercury Seals, http://www.deq.idaho.gov/media/517789-mercury_seals_fs.pdf
3. City of Tuscon Water Department, Additional Mercury Background Information, Dec 20, 2004, <http://www.tucsonaz.gov/water/mercury.htm>
4. Western Oil Fields Supply Co, dba Rain for Rent, <http://www.rainforrent.com/solutions/ChicagoContaminatedWellWater.aspx>
5. Elobyist, Illinois Senate Bill 1213 - 97th General Assembly - Amendment to Senate Bill 1213, <http://e-lobbyist.com/gaits/text/266100>

Clients choosing Indar over BJ and Centrilift

250 HP Indar being installed in Brookfield, WI

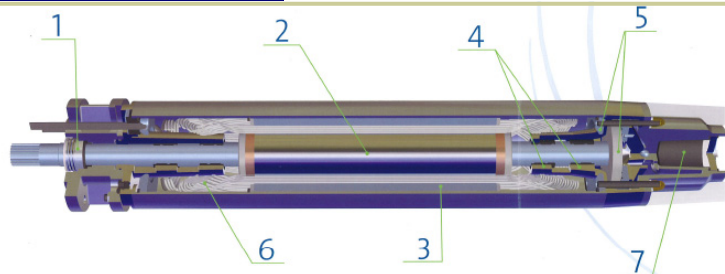


Over the past 3 years, clients from Illinois and Wisconsin have been choosing Indar submersible motors over Byron Jackson® and Centrilift.

Being built in Spain since 1947, the Indar submersible motor has a proven track record, not only in Europe, but also in North America. Manufacturing quality standards are extremely high meeting both the standards of ISO 9001 and 14001.

The motor is water filled, low or high speed, voltages of 460, 2300 & 4160 and includes the following features as shown in the diagram below:

1. Mechanical seal
2. Keyed magnetic laminations to 416SS Shaft eliminates twisting of rotor.
3. ST-52 Steel Stator Housing.



4. Radial Bearings - Bronze and Graphite.
5. Kingsbury Style Thrust Bearing with up and down thrust ratings up to 35,000 lbs.
6. Class PE-2 +PA German Winding, Exceeds US class Y Insulation.
7. Pressure balancing system, sealed motor.

Clients reasons for making the change to Indar include:

1. Cost is considerably less than the Oil Filled options.
2. Timeliness of Supply - motors are in stock from 200hp to 600hp and available within 2 weeks versus 26 weeks on other brands.
3. Water filled vs. Oil filled safer on the environment.
4. Mechanical Seal vs. Mercury Seal - no risk of contaminating the well.

Installs over the past few years include the following clients:

Brookfield, WI - Installed two Indar units. One March

2008 and another in July, 2009.

Waukesha, WI: After multiple issues with Centrilift motors in various wells a decision was made to switch over to 350hp Indar at Well #3 this year.

Island Lake, IL - switched from Byron Jackson 350hp to Indar in December 2009.

Crystal Lake, IL - switched from Byron Jackson 250hp to Indar this year.

Large Industrial Client, IL - replaced a 450hp Byron Jackson with a 400hp Indar.

To date, with over 200 installations nationwide, there has not been a single known issue with any Indar installation.

Every motor is backed with a full one year warranty. The motors are tested and certified by Gicon Pumps in Texas prior to shipment. All motor repairs / rewinds, when needed will also take place at Gicon Pumps who is the exclusive USA distributor and is a factory certified repair facility.

Sycamore, IL is realizing the benefits of Flooded RC Drilling on their 1,225 foot well. A clean and efficient job site, limited noise and a very straight well!!!



The Benefits of Flooded Reverse Circulation Drilling

Municipal Well & Pump utilizes the capabilities of Flooded Reverse Circulation drilling with our Foremost DR24HD Drill Rig.

The process works by flooding the hole with water from a pit or tanks. Air is forced down the outer tube of the drill rod. The pressurized air lifts the water & cuttings up through the inner tube. The water and cuttings flow back into the pit where the cuttings settle in the pit. The surface water then flows or is pumped back into the well to create a closed loop process.

The benefits of Flooded RC include:

1. **A Clean Jobsite** - no water or cuttings leave the site.
2. **Less Noise** - since there is a reduced need for air, less equipment is required.
3. **Reduced Well Development** - because the well is continually flowing with water - the well isn't plugged with other contaminants like drilling mud / fluids which can plug the water bearing formations.
4. **No Air into the Formation** - this is extremely important in certain geological formations. The air is confined within the drill rod.

