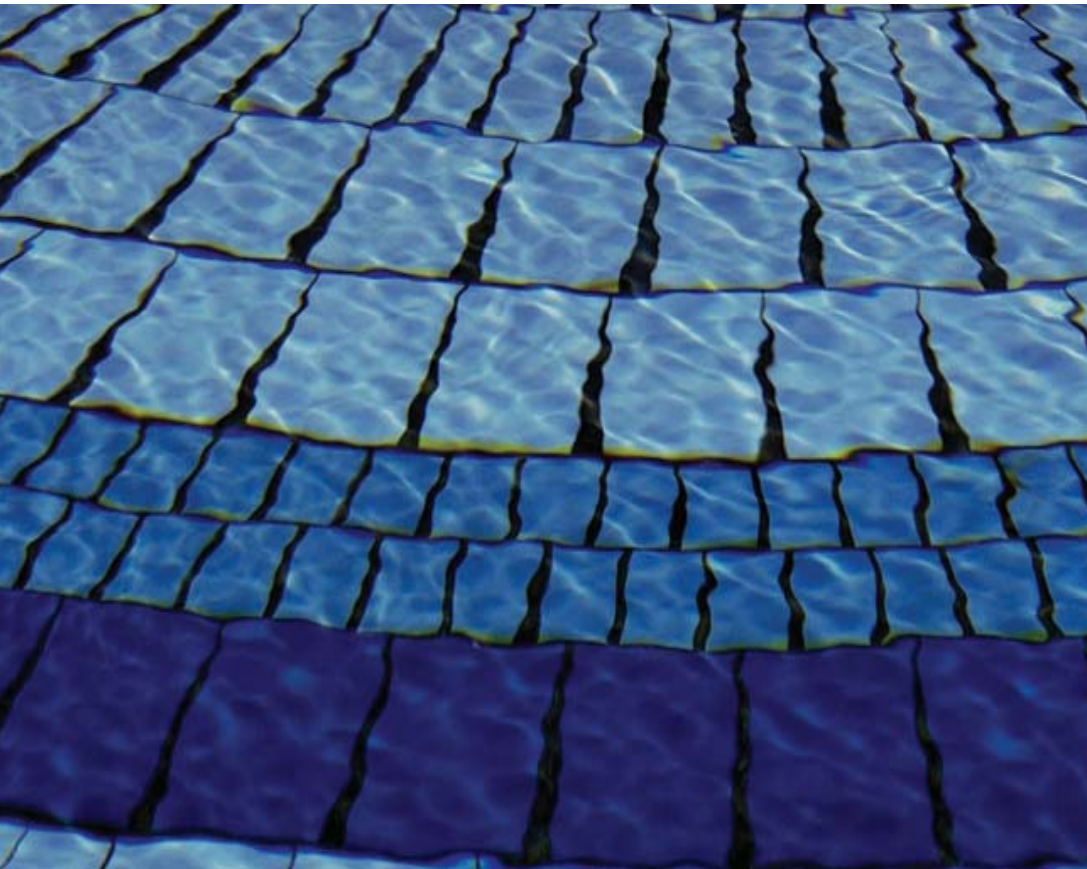


How to keep water wells healthy and avoid costly repairs



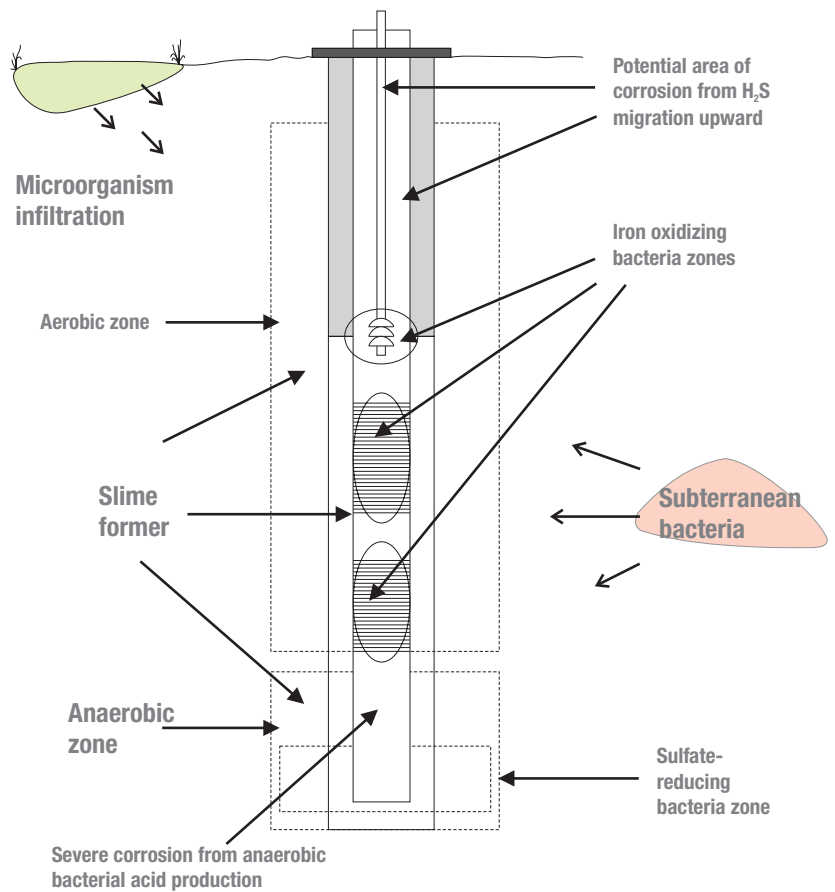
Johnson Screens water well specialists and Nu-Well[®] chemicals improve well production and extend well life.

Johnson screens[®]

A Weatherford Company

6 CLASSIC SYMPTOMS of water well ailments

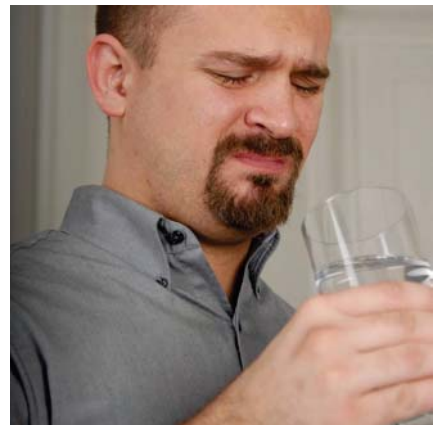
1. Declining production. Mineral scale and bacterial growth plug the well intake, including the screen, the filter pack and even the formation itself.



2. Red water. Your well is probably infected with iron bacteria, which can corrode the well casing and pump. Water may have an “iron” taste.



3. Rotten egg smell. This odor indicates the presence of sulfate-reducing bacterial growth and hydrogen sulfide gas, which corrodes wells, screens, plumbing and fixtures. Water may also have an unpleasant taste.



Johnson Screens has the industry's best customer support staff, which includes specialists in the field of well design and rehabilitation. We diagnose well conditions and provide effective treatment recommendations, as well cleaning is not a "one size fits all" solution. And we have the industry's most comprehensive line of NSF (National Sanitary Foundation) approved chemicals to cure almost any well ailment.



4. Cloudy or "muddy" water. This condition is usually caused by bacterial slime buildup in the well.



5. Higher electric bills. Mineral deposits that lead to loss of well capacity and increasing pump lift demands will make your well more expensive to operate.



6. "Different" taste or smell. A change in taste or smell may be caused by large populations of anaerobic bacteria in the bottom of the well, which can result in well and pump deterioration.



Here's just what the doctor ordered...

How *Johnson Screens* specialists and Nu-Well® chemicals keep wells healthy



Annual checkups and well cleaning are good preventive medicine. You can make your well more productive and add years to its life. Avoid expensive repairs and re-drilling. Ensure the quality and safety of your drinking water.

No one can afford to be without water. If your well displays any of the six classic symptoms, don't delay.

1. Declining production
2. Red water
3. Rotten egg smell
4. Cloudy or "muddy" water
5. Higher electric bills
6. "Different" taste or smell

Make the first of your annual appointments right away to ensure a reliable water supply. Contact your water-well professional who uses Johnson Screens® products, and nip the problem in the bud before it becomes a big problem.

ALREADY HAVE A BIG PROBLEM? THERE'S HOPE.

Our specialists review all well records to determine the specific capacity of the well, static water level in the aquifer and treatment history. Then we conduct a laboratory or field test of the well water.

The laboratory analysis should include inorganic chemistry and a microbiological analysis. If a laboratory analysis is not available, field parameters such as alkalinity, hardness, pH and BacTe (48-hour bacteriological test) testing should be done. Once the diagnosis is made, the proper chemical treatment is designed.

With proper diagnosis and treatment, *almost any well can be saved* and production restored—sometimes even increased beyond original pumping rates.

WHY YOU NEED A CHEMICAL TREATMENT

Well cleaning involves more than cleaning the inside of the well. The filter pack, the formation and the back side of the well screen also need to be cleaned, which is impossible without chemicals.

Well fouling has a variety of causes, and no single standardized or universal solution is acceptable. Our specialists will design a specific course of treatment for your well, choosing the optimal chemicals from the industry's most comprehensive portfolio of water-well treatment chemicals.

Nu-Well chemicals are environmentally safe and NSF certified for drinking water supplies. Your Johnson Screens specialist will prescribe the proper combinations and concentrations of chemicals for maximum effectiveness.

THE DIFFERENCE THAT WELL CLEANING CAN MAKE



Domestic Wells

- Doubled production
- Fewer pump problems
- Increased reliability
- Minimized iron and associated staining
- Improved taste of water
- Safer water



Municipal, Industrial and Irrigation Wells

- Reduced operating costs by 25 percent
- Increased production by 25 to 50 percent
- Improved water quality
- Extended well life by 25 percent
- Increased water during peak demand
- Minimized iron levels in pumped water

A full line of chemicals that are safe and do not require any special handling



CHEMICAL CURES FOR WATER-WELL AILMENTS



Nu-Well® 310 Bioacid Dispersant/Well Cleaner
Used with the proper *Nu-Well* acid, this is today's most effective product for removing

biofilm accumulation and mineral scale from the well.

Nu-Well 310 dissolves iron deposits and cleans the surface areas where iron bacteria reside. It prevents re-infection of the well and acid buildup that causes casing corrosion, which is often the source of iron and telltale red water.

Nu-Well 310 removes common types of oxidizing bacteria such as *Gallionella*, *Leptothrix* and *Crenothrix*, and slime-forming bacteria not removed by acids alone.

Nu-Well 310 provides superior anti-fouling performance to enhance well production while reducing repairs and extending well life by protecting all forms of metal in the well system.



Nu-Well 100 Pelletized Acid and Nu-Well 110 Granular Acid Pellets

These products sink to provide concentrated cleaning power at the bottom of the well, and granular acid is pumped into the well as a liquid. Both products clean mineral scale and iron deposits and penetrate deep into the filter pack and formation to improve production. They also have inhibitors to protect against corrosion.



Nu-Well 410 Chlorine Enhancer
Wells providing drinking water must be chlorinated anytime after they have been opened. Proper chlorination

will reduce the damage that occurs during chlorination and ensure that the well is properly disinfected. *Nu-Well 410* increases the bacteria killing power of chlorine, increases the penetration of chlorine disinfectant, and reduces the blocking effect of hard water.



Nu-Well 220 Dispersant Polymer

This product rehabilitates old wells plugged with clays, silts and fines. In new wells, it replaces phosphates to break down drilling muds.

Give your well a clean bill of health with a good chemical cleaning.



TREATMENT BY EXPERIENCED WATER-WELL PROFESSIONALS

In addition to a thorough investigation of your well, rehabilitation service by a qualified, licensed professional is essential to success. Licensed well rehabilitation professionals understand well construction, chemical cleaning and the correct and safe use of chemicals.

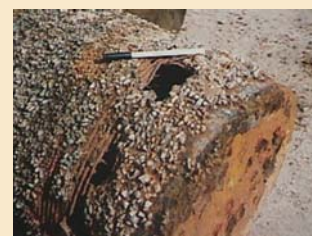
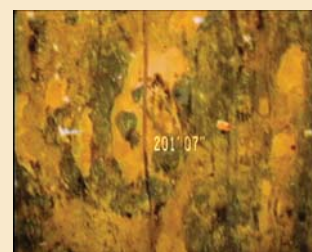
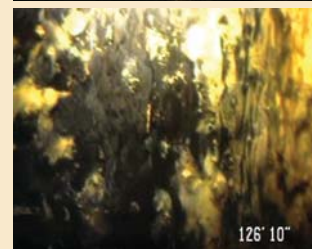
Here's what annual checkups typically involve:

- Flow test to check output, pump motor performance, pressure-tank and pressure-switch contact and general water quality
- Sanitation inspection of well equipment
- Water test for bacteria, hardness, sulfides and local water quality issues
- Written report that includes all laboratory and field test results, an explanation of these results and recommendations

Remember: Approximately one out of five public water systems show unsafe levels of bacteria in the well and/or distribution systems. Have tests performed right away if you notice any changes in the taste, odor or appearance of your water or if family members are experiencing persistent gastrointestinal disorders. Testing is especially important if there are infants in the home.

We keep your well healthy.

Potential results . . .

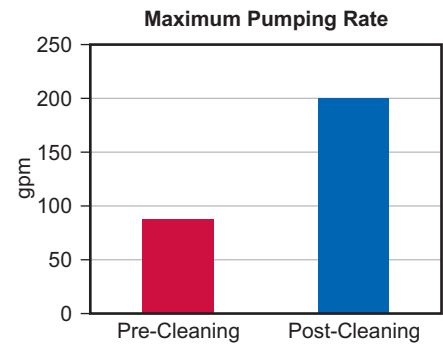
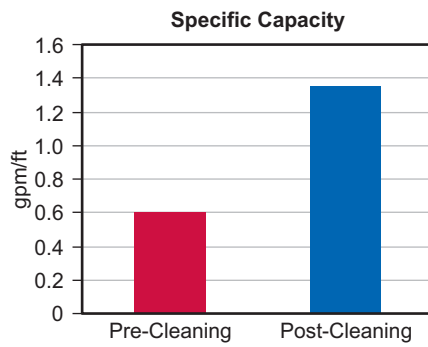


. . . without proper care.

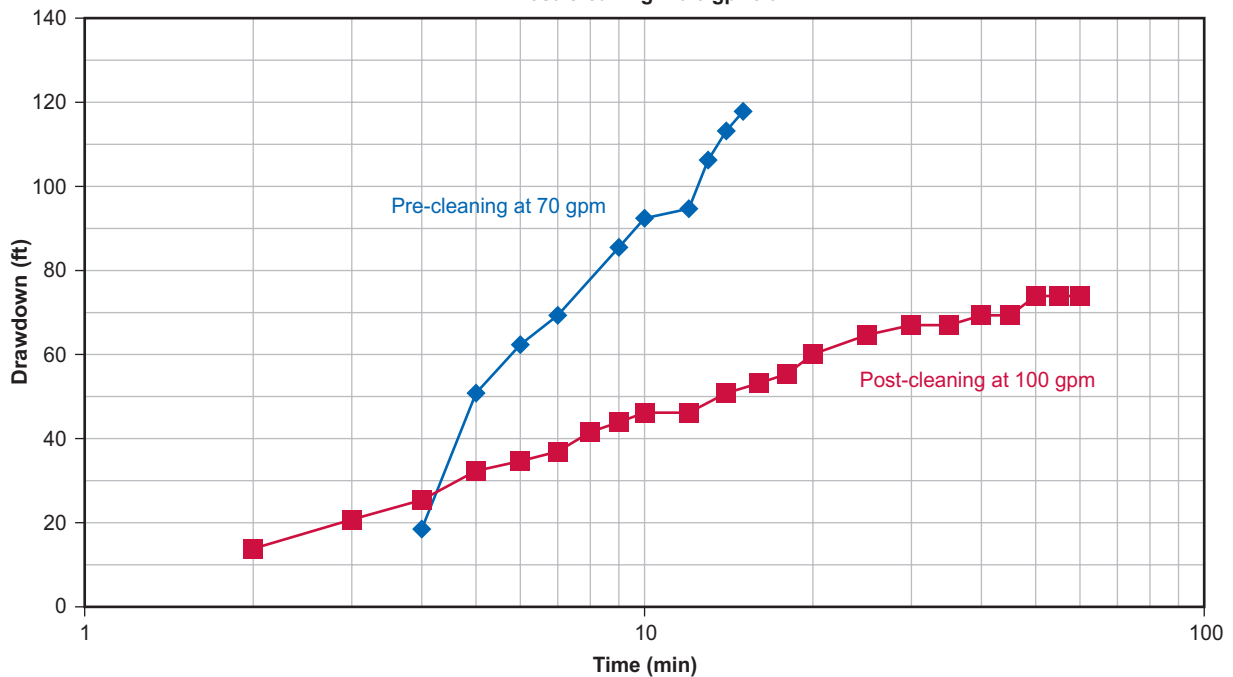
Success Showcase



A ten-year-old well in Colorado's Laramie-Fox Hills aquifer had biological and mineral blockage. The well is 10 in. (25 cm) in diameter and 1,500 ft (457 m) deep. It was incapable of sustaining a pumping rate of 70 gpm before the pump broke suction. Johnson Screens cleaned the well with Nu-Well® 110 and Nu-Well 310 to remove the biofouling and mineral incrustation. This treatment more than doubled the well capacity and eliminated the need for drilling a new well, saving the owner more than \$150,000 with minimal downtime.



Laramie-Fox Hills Pre- and Post-Cleaning Specific Capacity
 Pre-Cleaning = 1.35 gpm/ft
 Post-Cleaning = 0.6 gpm/ft



PROTECT YOUR WATER WELL.

**Avoid high repair bills with
a checkup and cleaning by
Johnson Screens specialists.**

Contact us today.



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