

**The following list of required construction methods and specifications is being used by the DNR for all wells constructed using monies from the Well Compensation fund.**

**Well Compensation Arsenic Area Replacement Wells**

**Required Special Well Construction Methods and Specifications:**

- The upper-enlarged drillhole and cement-grouted casing shall extend at least 80 feet below the Sulfide-Cement Horizon (SCH), which typically lies just below the base of the Galena-Platteville Dolomite formation or shall extend to a depth as required by the Department.
- The upper-enlarged drillhole shall be drilled using rotary mud-circulation methods; rotary-air methods may not be used for this purpose.
- The upper-enlarged drillhole should have a diameter of 10 inches rather than the minimum 8 inches.
- The cement grout shall be ordered from a concrete company and shall have a density of at least 15.2 lbs./ gallon, but preferably 15.6 lbs./gal. The density shall be measured with a “mud balance”. The grout slurry shall be adequately screened before it enters the pumping hopper or chamber.
- The cement grout shall be pumped into the annular space using either the Bradenhead Method or the Grout Shoe Method. At the completion of the grouting procedure the grout shall flow out the top of the annular space and have the same density as the grout being pumped from the hopper.
- The grout shall be allowed to set for at least 72 hours before the construction of the lower open bedrock drillhole is commenced.
- The lower 6-inch diameter open bedrock drillhole (into the aquifer) shall be drilled using “rotary-wash” methods, i.e. rotary water-circulation methods; again, rotary-air methods shall not be used.
- An approved liquid chlorine product (sodium hypochlorite) should be used to prepare the solution to disinfect the well upon completion. Calcium hypochlorite (granular or pellets type) chlorine products should not be used. Only Department–approved chlorine products may be used. The chlorine solution may not have a concentration greater than 100 mg/l (ppm) and there shall be no more than 30 minutes of contact time down the well. After this time has elapsed, the solution shall be thoroughly flushed from the well with water, not with air.