

**567—115.24(455B) Sealing abandoned wells and boreholes.** Boreholes, piezometers and observation wells not used for groundwater monitoring must be sealed. The location of the abandoned well or borehole shall be documented in writing with reference to the landfill's coordinate system and method of sealing. The document must be retained at the landfill with a copy sent to the department.

**115.24(1) Sealing boreholes.** The borehole shall be filled by extending a tremie tube to the bottom of the hole. Bentonite or expanding cement grout shall be applied through the tube to the bottom of the hole and the tremie tube shall be raised as the hole is filled from the bottom upward. The end of the tremie tube shall be submerged in the grout while filling. The borehole shall be filled from the base of the boring all the way to the ground surface.

**115.24(2) Sealing abandoned monitoring wells.**

*a.* Well is known to be constructed properly with impermeable grout that was installed from the bottom up using a tremie tube. Any existing protective metal casing shall be removed by vertically pulling it off the well. With a tremie tube, the inner well casing shall be filled with an impermeable grout slurry from the bottom to ground surface. After 24 hours, the grout shall be retopped if it has settled below the existing ground surface.

*b.* Well construction is improper or undocumented. An attempt should be made to remove the well casing. If the well casing cannot be removed, the well casing shall either be drilled around with a hollow stem auger of large inside diameter or shall be drilled out with a standard casing bit or solid stem auger with a boring diameter greater than the initial diameter of the hole. Drilling shall be to the maximum depth of the previously drilled boring. The drilling debris shall be cleaned from the interior of the auger or borehole. The borehole shall be sealed with an impermeable grout using a tremie tube. If the soil conditions permit the sealing to be conducted in a continuous operation, the tremie tube shall be submerged in the grout at all times. After 24 hours, the grout shall be retopped if it has settled below the ground surface.

*c.* Monitoring wells in future fill areas. The well shall be removed and sealed as described in the procedures for sealing boreholes in 115.24(1).