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How to Seal an Abandoned Well

Dug, Bored, Drilled and Driven Wells



Abandoned wells are one of the greatest threats to groundwater because pollutants can enter an underground water supply directly.

Before You Begin:



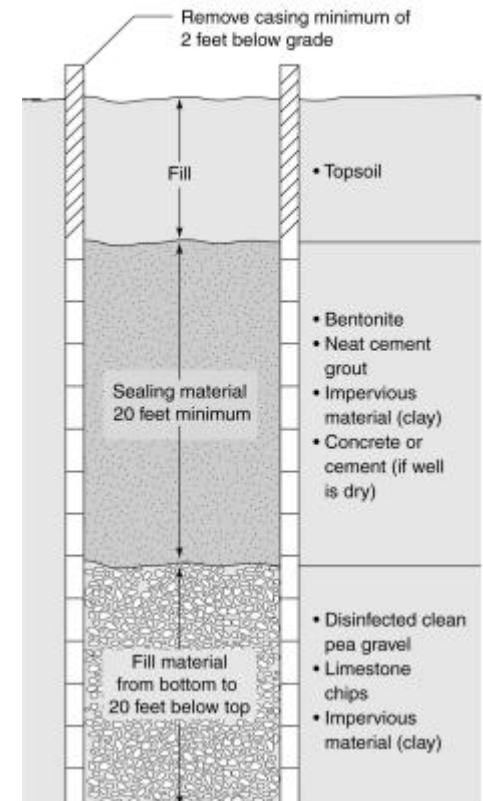
- Report to local health department and acquire a water well sealing plan form.
- Get well sealing plan approved by local health department.
- Obtain all necessary permits and notify well inspectors 48 hours before sealing begins.
- Remove all debris before sealing such as bricks, pump, pipes and electric cables.
- Remove all casing to at least 2 feet below final grade.
- Measure the depth and diameter of the well and the static water level (directions on back).
- Disinfect the well in compliance with the Illinois Water Well Construction Code.

Dug or Bored Well: 3 Methods

1. Completely fill the well with concrete, cement grout or clean clay from bottom to top.
2. Alternate layers of approved bentonite grout and agricultural lime from bottom to top.
3. Place fill material (pea gravel, impervious clay or limestone chips) from the bottom of the well to 20 feet below the point where the casing is to be removed. Then place the sealing material in the upper 20 feet of the well. Remove at least the top 2 feet of the well casing which will either be brick, stone, concrete block or porous tile. Fill the remaining 2 foot hole with topsoil using enough to allow for settling.

Approved sealing materials: bentonite, concrete, cement grout, clean clay or neat cement.

Sealing an Abandoned Dug or Bored Well

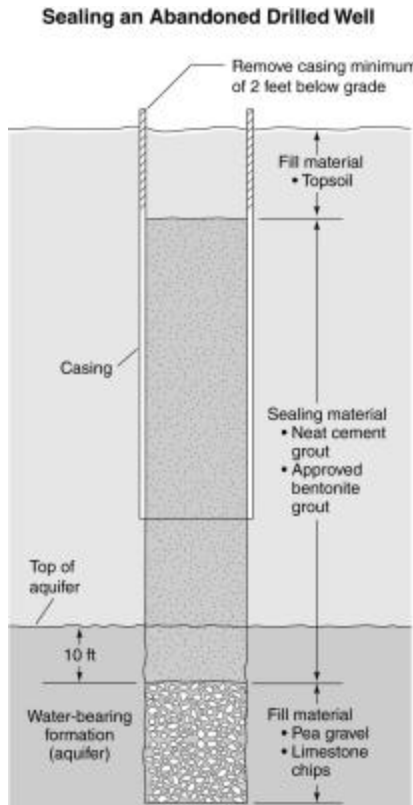


Drilled Well: 1 Method

1. Fill with disinfected pea gravel or limestone chips from the well bottom to 10 feet below the top of the aquifer OR 10 feet below the bottom of the casing (whichever is less).
2. Place a minimum of 20 feet of sealing material (bentonite or neat cement grout) above the filling material. This should fill the well to within 2 feet of the surface.
3. Remove at least the top 2 feet of the well casing.
4. Fill the remaining 2 foot hole with topsoil using enough to allow for settling.

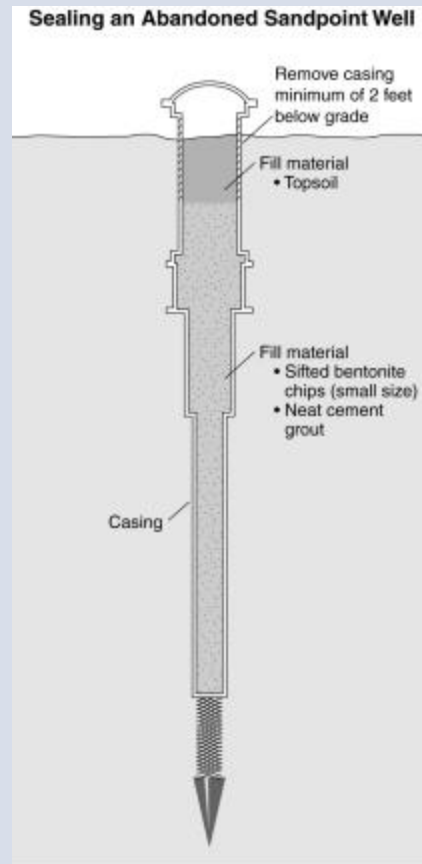
Approved sealing materials: bentonite and neat cement grout

Note: If the well extends through several types of water-bearing formations, contact the local health department for instructions.



Driven Wells: 1 Method

1. Sift through the bentonite chips using a fine-mesh screen and remove all bentonite fines (the powdery residue in the bentonite bag).
2. Completely fill the well with the bentonite chips. If you fill too quickly, the bentonite pieces may catch on the sidewall and become lodged forming a bridge instead of falling to the bottom. Be sure to avoid bridging.
3. Fill the top 2 feet with topsoil after removing the casing.



Measuring Disinfectant

1. Find the **well depth** by attaching a weight to a string and lowering it into the well shaft. When the weight reaches the bottom it will cause a change in tension on the string. Mark the string and measure the distance from the weight to the mark and round to the nearest foot.
2. Find the **static water level** by repeating step #1 except using a cork instead of a weight. The cork will float causing a change in tension on the string.
3. Subtract the distance to the static water level from the well depth to find the **water depth** in the well in feet.
4. On the table below, find the required amount of bleach per linear foot, depending on the well diameter.

		WELL DIAMETER (inches)							
		2	4	6	8	10	12	24	36
DEPTH OF WATER IN WELL (feet)	5	1c	1c	1c	1c	1c	1c	1q	3q
	10	1c	1c	1c	1c	2c	2c	3q	6q
	15	1c	1c	1c	1c	3c	1q	1g	2g
	20	1c	1c	1c	2c	1q	1q		
	30	1c	1c	2c	2c	1.5q	2q		
	40	1c	1c	2c	1q	2q	2.5q		
	60	1c	2c	1q	1q	3q	4q		
	80	1c	2c	1q	2q	3.5q	5q		
	100	1c	3c	1.5q	2.5q	4q	6q		
150	2c	1q	2.5q	1g	6q	2.5g			

C=cups q=quarts g=gallons

Note: 1 Pint= 2 Cup

1 Quart= 2 Pints or 4 Cups

1 Gallon= 4 Quarts or 8 Pints, or 16 Cups