

# WHAT MATERIALS CAN BE USED TO PLUG A WELL

## Activity At A Glance

Participants will discuss the different materials used in plugging an abandoned well.

## Learning Objectives

Upon completion of this section, participants will be able to:

- Identify the proper materials used to plug abandoned wells.
- Understand the characteristics of the plugging materials for preventing the transport of surface water to groundwater.
- Understand the importance of using clean materials.

## Vocabulary

cement, Bentonite, Bentonite Grout

## Suggested Materials

Chalkboard, flipchart, dry erase board or other means to record and post group responses.

## Presentation:

### 1. Introduction

We will now discuss the different materials used to plug abandoned wells.

### 2. Discuss

#### a. **According to the video what materials are used to plug abandoned wells?**

*Allow them to brainstorm aloud. You may choose to record participant responses onto flip chart or chalkboard.* Before moving on to the next question be sure that they have covered cement, Bentonite, Bentonite grout, and compacted clay or caliche for large diameter wells.

#### b. **What are some of the reasons behind using these materials?**

*Allow them to brainstorm aloud.* Before moving on to the next question be sure that the participants recognize the need to use a slowly permeable material to prevent surface water contamination and mixing of groundwater sources.

#### c. **Why should you use potable water when mixing cement or Bentonite grout?**

*Allow them to brainstorm aloud.* Before moving on to the next question be sure the participants recognize the need not to add contaminants to closed well by mixing the plugging materials with contaminated water.

### 3. Summarize the Major Points

- The different acceptable materials used to plug abandoned wells are cement, Bentonite, and Bentonite grout.
- When plugging a large diameter well compact clay or caliche may be used.
- The plugging materials provide a barrier to prevent rapid movement of surface water down to the aquifer and the mixing of water between different aquifers through the well casing.