

# Attachment F

Well and Cavern Closure and Abandonment Plan

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# Plugging and Abandonment Plan

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## 16-Inch Injection Well Plugging and Abandonment Plan

In the event plugging and abandonment of a cavern well is required prior to the completion of a cavern well, the following procedures are provided as a general guideline. Actual plugging measures will be submitted in advance to DWQ for approval.

1. All stored product will be removed and the cavern will be filled with saturated brine water.
2. All free hanging tubing will be pulled from the well.
3. The exact depth to the bottom of the cemented production casing will be determined.
4. A drillable plug capable of supporting a cement plug will be installed in the cemented casing with the bottom of the plug within 10 feet of the end of the casing.
5. The following plugs will be placed. All cement plugs will be Class G cement with no additives and the slurry weight will be 14.5 pounds per gallon or more.
  - a. Bottom plug: A 300-foot plug from the plug at the bottom of the production casing upward.
  - b. Surface casing plug: A 150-foot plug from 75 feet below the bottom of the surface casing upward.
  - c. Top plug: A 75-foot plug from 75 feet below surface grade upward to surface.
6. The casing between each of the plugs shall be filled with a non-corrosive mud slurry of at least 10 pounds per gallon weight.
7. An alternative technique that could be used involves filling the entire wellbore with cement.

Upon completion of the plugging operation, all reports will be filed in accordance with DWQ rules as applicable.