

**Attachment 5**  
**Application for Authorization to Inject**  
**Querecho Plains Bone Spring Sand Unit 8-1**  
**Lea Co., NM**

The zone being target for water injection at Querecho Plains is the First Bone Spring sand at a depth from 8506' to 8528' in the Querecho Plains Bone Spring Sand Unit 8-1, Section 27, T18S, R32E. The First Bone Spring sands are a sequence of well consolidated sandstone, siltstone, and shale strata, with localized carbonate deposition, of Permian age cemented with calcareous material. An eight percent porosity cut off is used to determine net pay as porosity less than eight percent is considered impermeable at the existing and proposed reservoir pressure and reservoir fluid regimes. Net pay isopach maps contained in the engineering report portion of the unit plan show the areal extent of the targeted sands. Impermeable carbonate deposits exist above and below the targeted sands thus defining the permeable limits of the reservoir. All injected fluid should remain in the reservoir with the exception of cycling to the surface through well bores.