

# Common Misconceptions

## Common Misconceptions about Deepwell Technology

### Waste is injected into old oil wells or caverns.

Class 1 hazardous deepwells must meet rigorous geologic and construction standards which exceed those required for oil wells. We inject into an unconsolidated sand formation between impermeable shale formations. Caverns would not meet the containment requirements of a Class 1 hazardous well or a "10,000 - Year No Migration Petition."

### You don't hear much about deepwell injection so it must not be a common waste disposal technology.

Deepwell injection in Class 1 wells is a very common disposal technology for wastewater. Most people are unaware that approximately nine billion gallons are injected annually because almost 99% is injected in captive wells owned by large industrial generators. To our clients, deepwell injection is common. Many of them ship millions of gallons to us annually and have done so for many years.

### Deepwells present a great risk to groundwater.

Deepwell permits are very stringent. There is a requirement to maintain annulus pressure 100 psi greater than the injection pressure. Should a leak occur in the injection tube, the annulus fluid will be forced by pressure into the injection pipe and permitted formation. Of course there is also cement casing outside the annulus. If annulus pressure is lost, the well is down immediately. Normally a workover is required before the well can re-start. The design, operation, and permits for our deepwells act as barriers to groundwater problems. Our compliance with the longstanding and comprehensive EPA Underground Injection Control Program protects surface waters as well as groundwater sources of drinking water.

### Because injection is into the ground, deepwell is an unfriendly technology to the environment.

Deepwell injection at Texas Molecular is an environmentally sound way to manage wastes. Wastes are injected about 1.5 miles below the surface. The wastes are removed from the biosphere. There are no discharges to surface waters. No discharges to air are associated with the injection process. The Carbon (CO<sub>2</sub>) footprint of our technology is very small when compared to other disposal technologies. Groundwater monitoring is not required as groundwater protection is incorporated into the design, construction, and permitting of our wells.