

# BRINE INJECTION WELL TECHNOLOGY WELL DESIGN, TESTING AND MAINTENANCE

*by*

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## PURPOSE OF THIS PAPER

This paper on brine injection well technology is to address the well design, testing and maintenance of injection wells.

## INTRODUCTION

Subsurface or underground brine disposal is the placing of brine beneath the surface in a permeable formation. This paper discusses only the subsurface brine disposal through injection wells.

The year that disposal of brine into subsurface strata began in Texas is not known. The first major project began in the East Texas oil field in the year 1938. Salt water produced in conjunction with oil from the Woodbine Formation was returned to the lower part of the formation. Today millions of barrels of salt water are being returned to the formation from which the water originated or to other formation.

The history of brine disposal in Texas began in the early 1950's, the Railroad Commission of Texas with issuing permits for disposal of salt water into subsurface strata nonproductive of oil or gas. In 1971, the 62nd Legislature passed the Texas Water Code Act. The Act became known as the Disposal Well Act is now Chapter 22 of the Texas Water Code. The primary purpose of the Disposal Well Act is to protect the quality of the State's water resources and to protect the rights of the public. The Texas Water Commission (TWC) and the Railroad Commission (RRC) of Texas are charged with responsibility for administering the Act. The RRC administers the brine disposal wells associated with the production of oil and gas and the TWC administers the disposal wells associated with the industrial and chemical industry. Uranium in situ mining, salt, sulfur and other mineral mining by solution is permitted by the TWC and hydrocarbon storage is permitted by the RRC.

If injection of brine is confined to suitable reservoirs, the well is properly designed and operated, and injection pressures are maintained below certain limits, there should be no hazards to the environment and to the public.