

Geological Data  
Injection Zones  
for  
Gulf Oil Corporation's  
Lea "ZD" State Well No. 1

Yates - 3435-3945' (510')

The top 45' of this formation is sand with good porosity. It is followed by 60' of dolomite with 30' showing good porosity. The rest of the formation consists of 10' to 50' Anhydrite stringers with scattered 5' to 20' sandy dolomite sections with low porosity.

Seven Rivers - 3945-4710' (765')

This formation is predominately dolomite with thin, five to ten foot zones of sandy dolomite in the lower half.

Queen - 4710-5035' (325')

This formation is composed of top and basal sandstone members separated by a dolomite section. The top member, the Knight sandstone, is a porous and permeable section approximately 70' thick while the basal member, the Penrose sandstone, is a porous and permeable section 37' thick.

Grayburg - 5035-5270' (235')

This formation is dolomite with two sand lenses showing porosity and permeability. The sand lenses are 35' and 20' thick.

San Andres - 5270-6310' (1040')

The San Andres formation is a dolomite with porous and permeable zones five to twenty feet thick.

Delaware Sand - 6310-7645' (355')

This formation is composed of fine-grained sandstone with thin layers of black shale and argillaceous limestone. The main porosity and permeability zone in this sandstone is from 6376-88'.

Proposed stimulation of these injection zones will be acidization with 20% HCL acid (and fracturization only if necessary) to initially achieve injection rates and pressures as approved by the OCD.