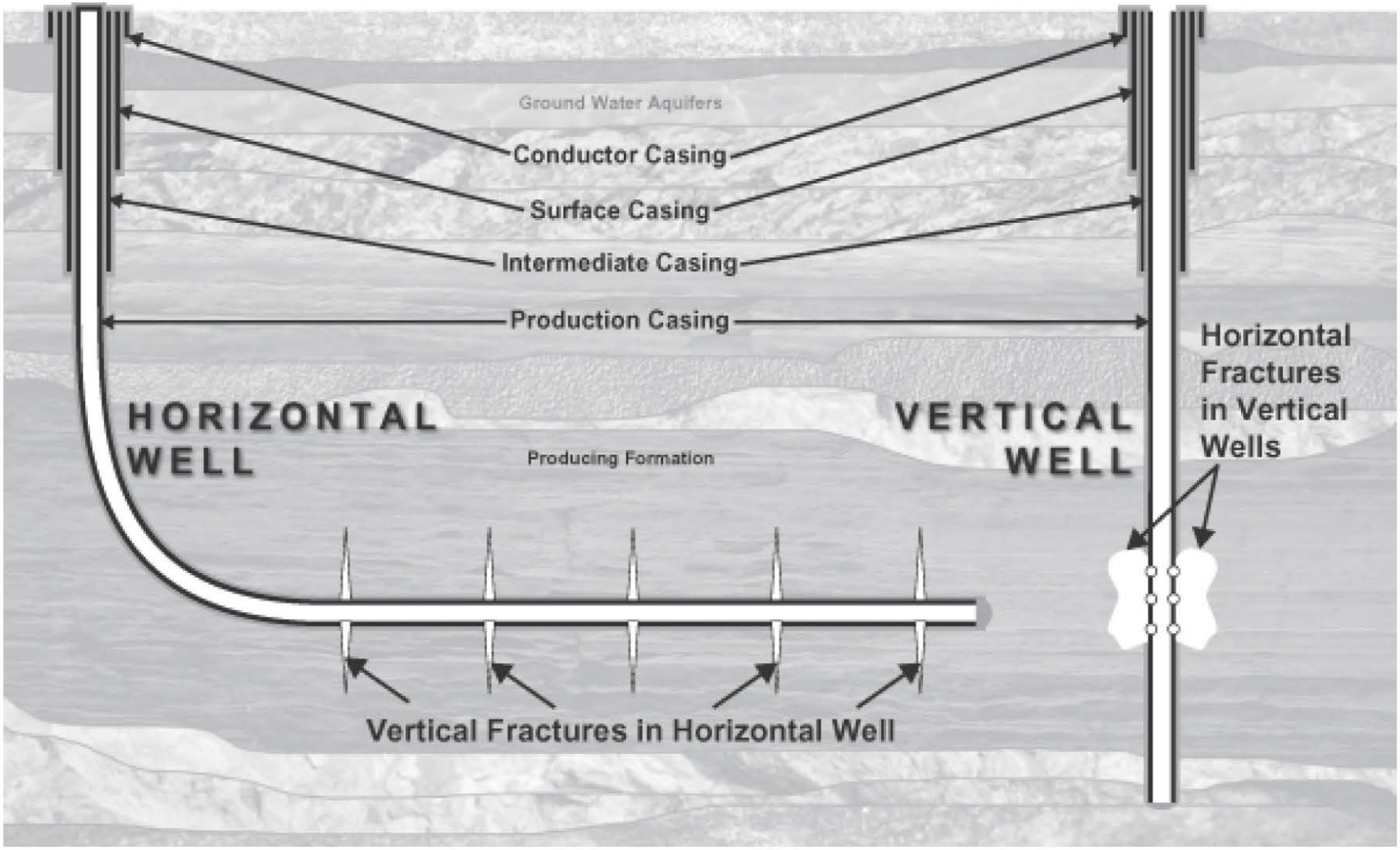
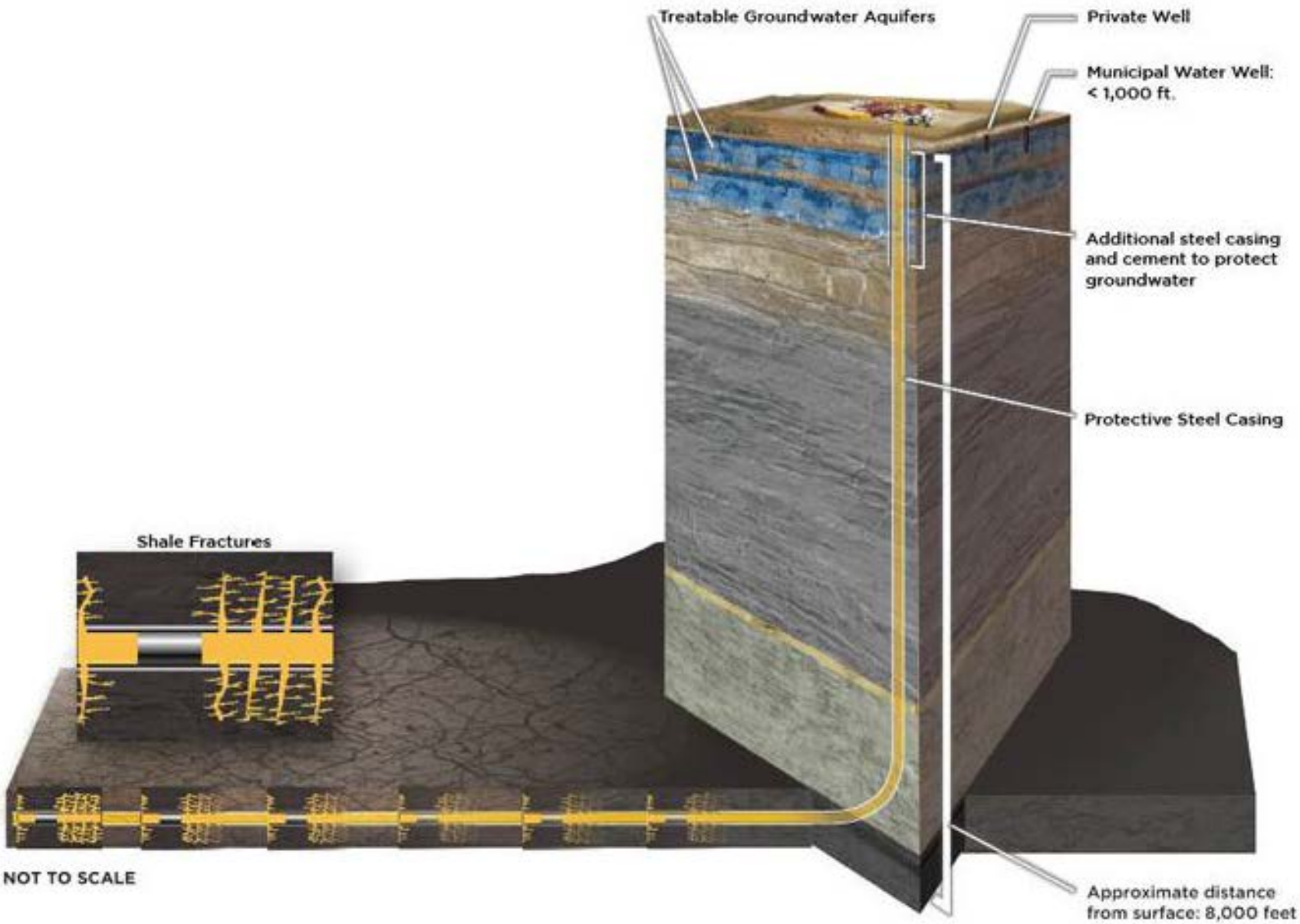
EXHIBIT 4.1


Ground Water Aquifers
Conductor Casing
Surface Casing
Intermediate Casing
Production Casing
HORIZONTAL WELL
Producing Formation
VERTICAL WELL
Horizontal Fractures in Vertical Wells
Vertical Fractures in Horizontal Well


Treatable Groundwater Aquifers
Private Well
Municipal Water Well: < 1,000 ft.
Additional steel casing and cement to protect groundwater
Protective Steel Casing
Shale Fractures
NOT TO SCALE
Approximate distance from surface: 8,000 feet