

## GRID DESCRIPTION

### CTV IV

#### Model Domain

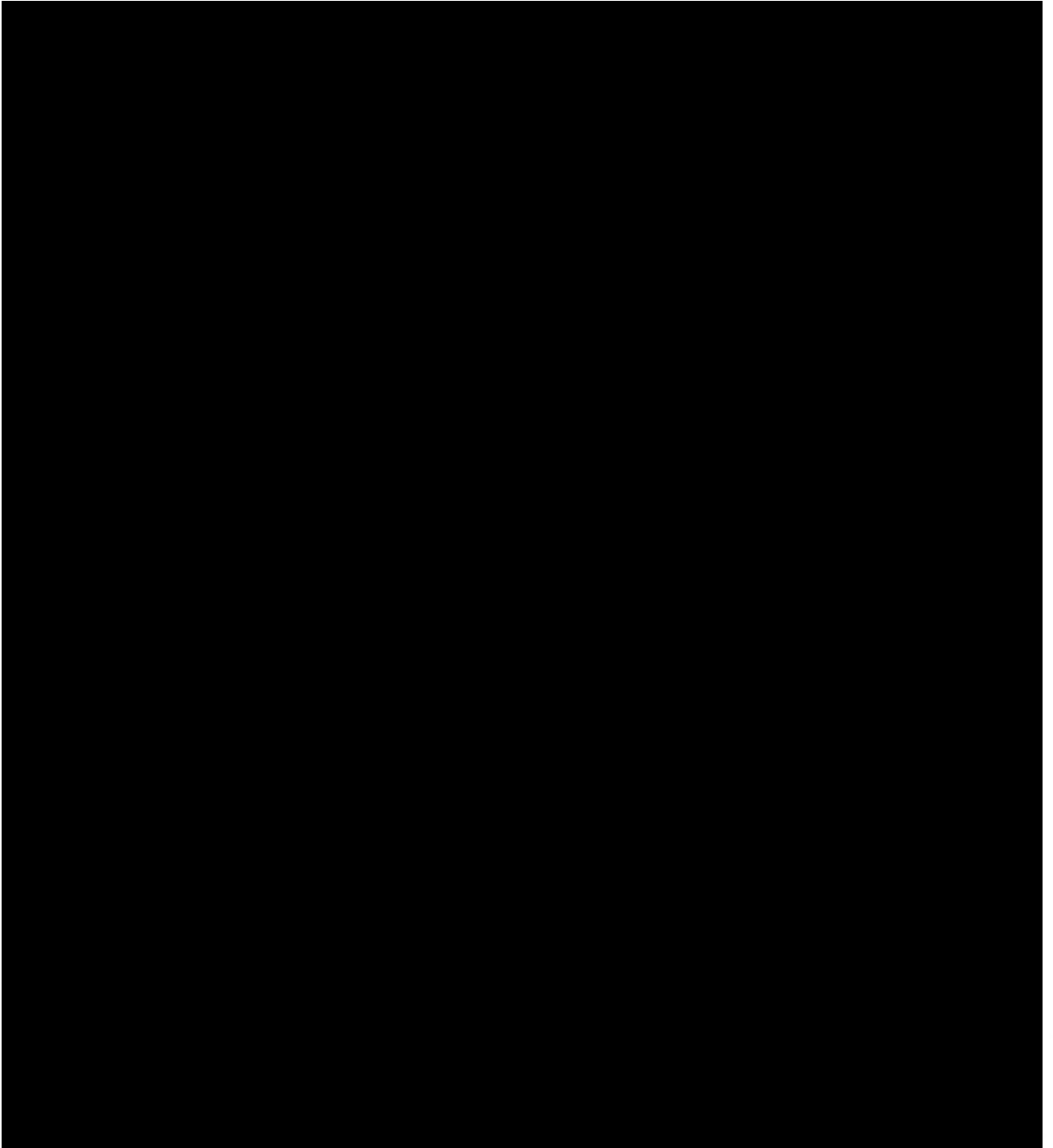
A static geological model developed with Schlumberger's Petrel software, commonly used in the petroleum industry for exploration and production, is the computational modeling input. It allows the user to incorporate seismic and well data to build reservoir models and visualize reservoir simulation results. Model domain information is summarized in **Table 1**.

The geo-cellular grid is uniformly spaced throughout the 212 square mile model area (**Figure 1**) at 500 ft. x 500 ft. Local grid refinement scenario was investigated for both injection target zones, and the refined grid size is 100 feet x 100 feet around each injector within 52 acres. The results show minor impact to CO<sub>2</sub> plume and critical pressure front. These original designed grid dimensions allow for adequate resolution of plume development. A finer resolution grid (less than 100x100) would prevent the simulation from running efficiently and a coarser resolution grid (larger than 500x500) does not adequately simulate plume movement. The model grid is aligned north to south and reservoir properties were distributed in a [REDACTED] direction [REDACTED] parallel to the depositional trend of the injection zones. Model boundaries were defined as open boundaries as [REDACTED]

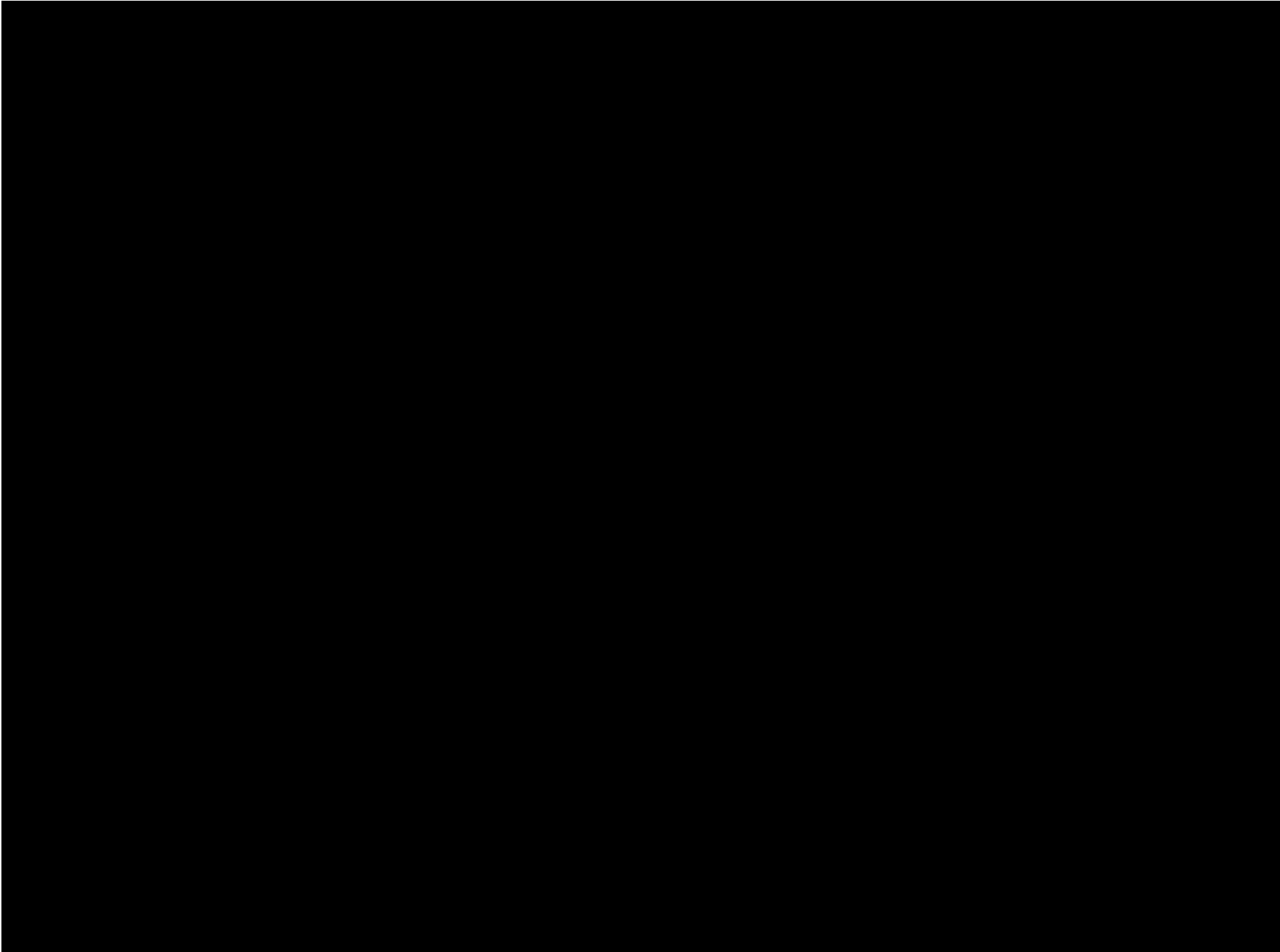
The open-hole logs have a half-foot resolution and a constant vertical cell height of 20 feet was utilized over the model domain to generate grid layers as shown in **Figure 2**. The 20-foot cell height provides the vertical resolution necessary to capture significant lithologic heterogeneity (sand versus shale) which helps to ensure accurate upscaling of log data and distribution of reservoir properties in the static model. **Figure 3** shows a comparison of open-hole log data and the associated upscaled logs for a well within the AoR.

**Table 1.** Model domain information

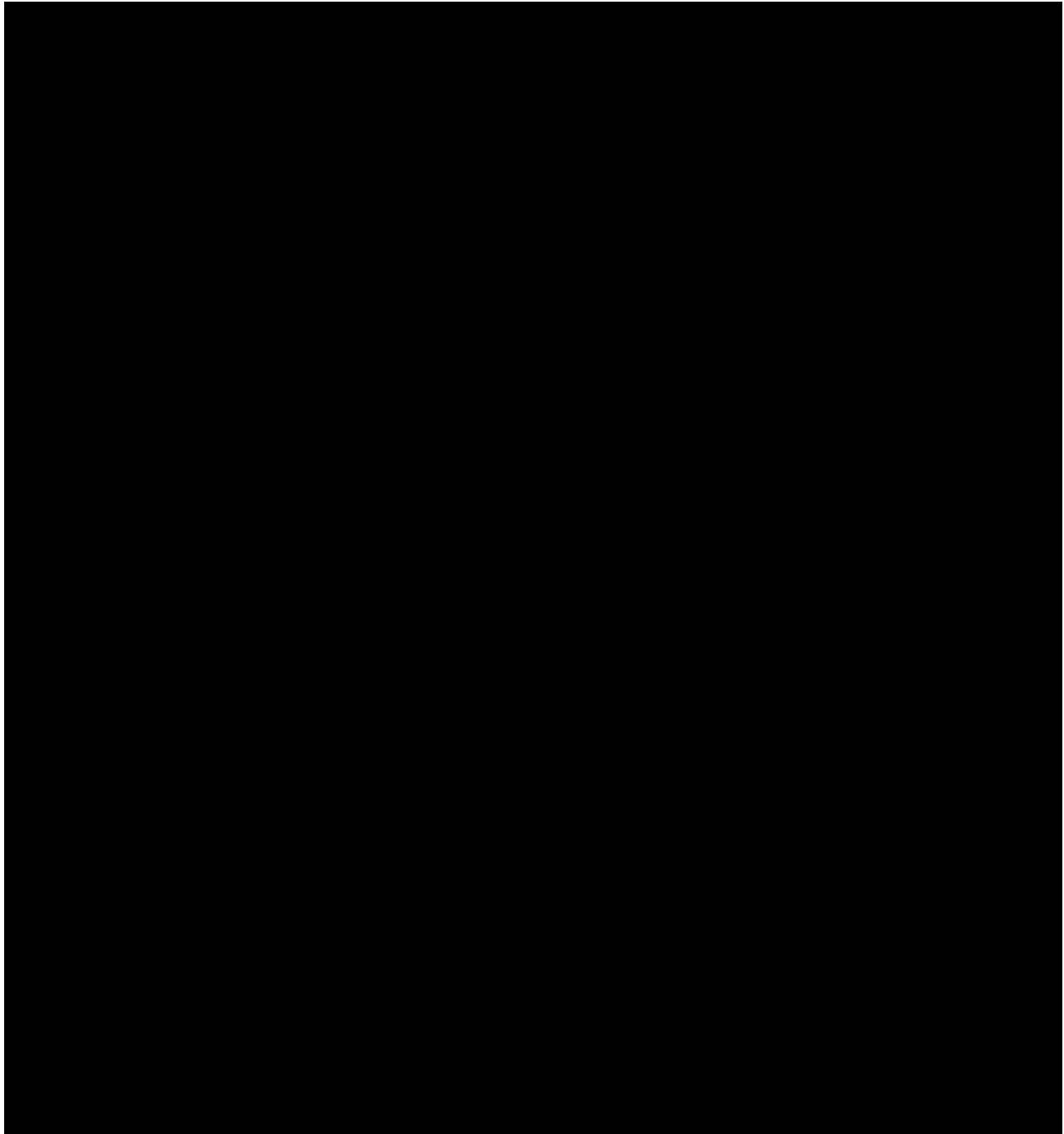
<b>Coordinate System</b>	State Plane		
<b>Horizontal Datum</b>	North American Datum (NAD) 27		
<b>Coordinate System Units</b>	Feet		
<b>Zone</b>	Zone 2		
<b>FIPSZONE</b>	0402	<b>ADSZONE</b>	3301
<b>Coordinate of X min</b>	████████	<b>Coordinate of X max</b>	████████
<b>Coordinate of Y min</b>	██████	<b>Coordinate of Y max</b>	██████
<b>Elevation of Bottom of Domain</b>	██████	<b>Elevation of Top of Domain</b>	██████



**Figure 1.** Plan view of the model boundary and geo-cellular grid used to define the CO<sub>2</sub> plume extent and associated AoR.



**Figure 2.** Static model grid layering of the Injection Zones. Stratigraphic units have an open boundary in all directions.



**Figure 3.** Well upscaled logs versus open-hole logs.