

Drilling 101

Oil and gas rules require the selection of a well surface location to minimize impacts by:

- Encouraging use of existing roads and utility corridors,
- Encouraging use of lands that already have been disturbed,
- Avoiding sensitive lands, surface water resources and endangered species, and
- Using directional drilling to avoid sensitive surface locations and minimize surface impacts.

Once a site has been selected and surveyed, an access road is constructed; a drilling pad is contoured with protective berms and dikes, and covered with limerock and hardwood planks; and utilities and a water source are established as necessary.

The drilling process begins with the installation of a ‘cellar’, or workspace, around the drilling hole. The crew then installs a large-diameter conductor casing used to line the first 150 to 250 feet of wellbore. This is much shallower and wider than the future primary wellbore. Next, the drill rig, generators and other equipment are installed. A mud circulation tank system is also set up to lift rock cuttings from the drill bit to the surface and filter those cuttings from the drilling mud.



A surface hole is drilled below the base of the underground source of drinking water (typically 1,400 to 2,000 feet deep). Once the specified depth is reached, the drill crew lines the borehole with well casing and cements it in place to prevent wellbore collapse and protect any potential drinking water aquifers. In South Florida, an additional intermediate hole is drilled, cased, and cemented in order to isolate the well from a particularly porous and saline layer known as the “Boulder Zone.”

Finally, a production hole is drilled to a total depth of approximately 11,000 to 15,000 feet below the surface, and logged with borehole geophysical tools that define the rock characteristics to help determine how the well will be completed. If the well appears commercially viable, production casing can be set, cemented and perforated at an interval that allows best petroleum/brine ratio to flow into the well and be pumped to the surface.

The oil and gas process is governed by Chapter 377, Florida Statutes, and Rules 62C–25 through 62C-30, Florida Administrative Code. The Department’s pollution control authority is also applicable to drilling.