

Penetration maps

A penetration map shows the distribution of boreholes that penetrate a given stratigraphic horizon. A penetration map is a useful exploration tool for two reasons: it shows the distribution of boreholes from which logs should be available to make maps and cross-sections for further exploration, and it shows the availability of area in which a new accumulation of petroleum can be found. A dense penetration map indicates that much subsurface information is available, but few opportunities for sizable accumulations exist. A sparse penetration map indicates little subsurface data but much area for possible accumulations.

The map below is an intermediate example. If Alfalfa Field's accumulation in a particular stratigraphic unit is an attractive model for a discovery target, this penetration map for that stratigraphic unit indicates that many wells exist as sources of data for an exploration effort. However, many vacant regions in map, marked with green here, are as large or larger than Alfalfa Field, suggesting that accumulations of the same scale as Alfalfa Field could await discovery.

