

Potentiometric Surface Map of the Bedrock Aquifers of Vigo County, Indiana

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Vigo County, Indiana is located in the west-central part of the state along the border with Illinois and is mostly within the Middle Wabash River Basin. However, the southern third of the county is within the Lower Wabash River Basin and the southeast part of the county is within the White and West Fork White River Basin.

The potentiometric surface mapped (PSM) contour elevations represent lines of equal elevation relative to the measured groundwater levels in wells. In general, wells completed in a confined aquifer system are bound by impermeable layers and will have static water levels under hydrostatic pressure causing the water level to rise above the elevation of the aquifer resource. In contrast, an unconfined aquifer system is not bound by impermeable layers; therefore, the water level will not be under hydrostatic pressure and will not rise above the aquifer resource.

Static water level measurements in individual wells used to construct the potentiometric surface map are indicative of the water level at the time of well completion. Therefore, current site specific conditions may differ due to local or seasonal variations in measured static water levels.

Coordinate locations of water well records were physically obtained in the field, determined through address geocoding, or reported on water well records. Elevation data were obtained from a digital elevation model (DEM). Elevation and location quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

Wells producing from bedrock deposits are limited with parts of the county lacking in data. This is primarily due to bedrock as a limited aquifer resource, and/or available overlying unconsolidated materials. Therefore, potentiometric surface elevation contours have not been extended throughout areas of the county.

Bedrock for the county includes sandstone and shale of the Pennsylvanian Raccoon Creek Group to the northeast; shale, sandstone, limestone and coal of the Pennsylvanian McLeansboro Group to the south and west; and mostly shale, sandstone and coal of the Carbondale Group in the central and southeast parts of the county as well as some small areas of the northeast. There are 917 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Total well depths generally range from 25 to 490 feet with depths to the bedrock surface at 2 to 158 feet.

Potentiometric surface elevations range from a high of 600 feet mean sea level (msl) along the east-central edge of the county, to a low of 450 feet msl in the southwest near the Wabash River.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, in Vigo County groundwater flow is mostly southwest towards the Wabash River. However, to the southeast part of the county within the White and West Fork White River Basin, groundwater flow is to the southeast towards the Eel River in Clay County