

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

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Lawrence County, Indiana is located in the south-central part of the state and is entirely within the East Fork White River Basin.

The mapped potentiometric surface contours 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 restricted 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. Elevation and location quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

Wells producing from bedrock are limited in production and are sparse throughout portions of the county. This is primarily due to bedrock as a limited aquifer resource. Therefore, potentiometric surface elevation contours have not been extended through these areas of the county.

Bedrock throughout most of the county includes limestone of the Mississippian Blue River and Sanders Groups. In the west and southwest part of the county, sandstone of the Pennsylvanian Raccoon Creek Group is present, primarily along ridgetops, along with shale, limestone and sandstone of the Mississippian Buffalo Wallow, Stephensport and West Baden Groups. Portions of the eastern half of the county includes siltstone and shale of the Mississippian Borden Group (primarily in the valleys of the East Fork White River and some of its major tributaries). Bedrock in some areas of the Stephensport, West Baden, Blue River and Sanders Groups are characterized by significant karst development.

There are 748 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Total well depths range from 34 to 480 feet with depth to the bedrock surface ranging from outcropping at the surface to 105 feet below surface. Due to

the extreme difference in reported static water levels of deeper wells that likely transcend into a different aquifer system, reported depths of 200 feet or less were considered a priority in the mapping of the contours where such differences are present.

Potentiometric surface elevations range from a high of 810 feet mean sea level (msl) along the east-central edge of the county, to a low of 460 feet msl near the west-central edge of the county along the East Fork White River.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, in Lawrence County groundwater flow is towards the East Fork White River and its tributaries throughout the county.