

# **Potentiometric Surface Map of the Unconsolidated Aquifers of Gibson County, Indiana**

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Gibson County, Indiana is located in the southwest part of the state and is within portions of four river basins. These include: the White and West Fork White River Basin along the northern edge of the county, the Patoka River Basin in the north-central third of the county, the Ohio River Basin to the southeast, and the Lower Wabash River Basin to the southwest.

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 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. Elevation and location quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

Nearly all of Gibson County is extremely limited in unconsolidated aquifer potential. Therefore, potentiometric contours have not been extended throughout much of the county. However, isolated areas where greater unconsolidated aquifer potential is present provides enough well data to allow contours to be mapped.

Well depths 100 feet or less were a priority in mapping the potentiometric surface in Gibson County. However, deeper wells were used to compliment the mapping in areas where wells at depths of less than 100 feet were sparse. There are 108 unconsolidated located water well records in the county that were utilized towards the mapping of the unconsolidated potentiometric surface.

Potentiometric surface elevations range from a high of 500 feet mean sea level (msl) in the central portion of the northern edge of Gibson County, to a low of 370 feet msl along two areas of the western part of the county near the Wabash River.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, along the northern edge of Gibson County groundwater flow is towards the White River. In the north-central third of the county groundwater flow is towards the Patoka River. In the Ohio River Basin to the southeast, drainage is towards Pigeon Creek and in the southwest part of the county, towards the Wabash River and associated tributaries.