

Potentiometric Surface Map of the Unconsolidated Aquifers of Johnson County, Indiana

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Johnson County, Indiana is located in the central portion of the state and is situated within two major drainage basins; the White and West Fork White River Basin to the west and the East Fork White River Basin to the east.

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.

In Johnson County well depths 100 feet or less were a priority in mapping the unconsolidated potentiometric surface. There are 930 located water well records in the county within the priority depth range. However, portions of western and southern Johnson County are lacking in data and/or are covered by deposits that have limited to non-existent aquifer potential. Therefore, potentiometric surface elevations contours have not been extended through these areas.

Potentiometric surface elevations range from a high of 830 feet mean sea level (msl) in the southwest part of the county near the basin divide, to a low of 640 feet msl in the northwest along the White River.

Generalized groundwater flow direction for Johnson County is towards major drainage relevant to the basin. Therefore, in the White and West Fork White River Basin, groundwater flow is west towards the White River, and to the east-southeast towards Sugar Creek and the Big Blue River for the East Fork White River Basin.