

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

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Owen County, Indiana is located in the west-central part of the state and is entirely 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.

Nearly all of Owen 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 PSM contours to be mapped; mainly in the northern and east-central sections of the county.

Well depths 100 feet or less were a priority in mapping the potentiometric surface in Owen 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 100 unconsolidated located water well records in the county that were utilized towards the mapping of the unconsolidated potentiometric surface; 68 within the priority depth range. Potentiometric surface elevations range from a high of 750 feet mean sea level (msl) in the north-central part of the county, to a low of 530 feet msl in the east-central part of the county along the White River.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. In the northern areal extent of Owen County groundwater flow is mostly towards Mill Creek. In the east-central part, groundwater flow is towards the White River.