

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

By
Randal D. Maier
Division of Water, Resource Assessment Section
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Wells County, Indiana is located in the northeast portion of the state and is situated within two major drainage basins. Most of the county is within the Upper Wabash River Basin, but the east-central edge and northeast corner is within the Maumee River Basin.

The generalized bedrock potentiometric surface map contour elevations represent lines of equal elevation to which groundwater levels will rise in wells. 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 either obtained from topographic maps or 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 Wells County there are approximately 1,793 water well records. Nearly all wells are completed in bedrock of which about 969 (54%) are located. These wells are finished in limestone and dolomite materials of the Silurian and Devonian Carbonates Aquifer System. Total well depths for located wells range from 37 to 450 feet with static water levels that are between 4 to 125 feet below surface.

Potentiometric surface elevations range from a high of 860 feet mean sea level (msl) in the south-central region of the county, to a low of 770 feet msl in the northwest and northeast areas of the county. Generalized groundwater flow direction for most of Wells County is towards major drainage relevant to the basin. Therefore, groundwater flow is towards the Wabash River. However, the northeast and east-central edge of the county is within the Maumee River Basin and general groundwater flow is northeast out of the county towards the St. Mary's River.

Much of the Wells County bedrock surface is overlain by unconsolidated deposits that range from less than one foot, to 170 feet in thickness (Unterreiner, 2007). Where bedrock is shallow, the potentiometric surface is generally under unconfined or semi-confined conditions. However, most of Wells County is covered by thicker sediments overlying bedrock. Therefore, the potentiometric surface for most of the county is considered under confined conditions.