

POTENTIOMETRIC SURFACE MAP OF THE UNCONSOLIDATED AQUIFERS OF STARKE COUNTY, INDIANA

Starke County, Indiana is located in the northwest section of the state. The southwestern and southeastern portions of the county are situated within the Upper Wabash River Basin with the remaining parts located in the Kankakee River Basin.

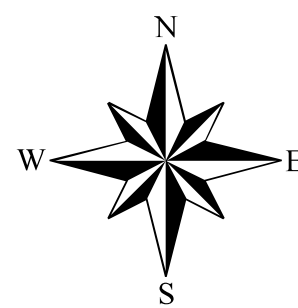
The Potentiometric Surface Map (PSM) of the unconsolidated aquifers of Starke County was mapped by contouring the elevations of approximately 870 static water-levels reported on well records received primarily over a 50 year period. These wells are completed in aquifers at various depths, and typically, under confined conditions (bounded by impermeable layers above and below the water bearing formation). However, some wells were completed under unconfined (not bounded by impermeable layers) settings. The potentiometric surface is a measure of the pressure on water in a water bearing formation. Water in an unconfined aquifer is at atmospheric pressure and will not rise in a well above the top of the water bearing formation, in contrast to water in a confined aquifer which is under hydrostatic pressure and will rise in a well above the top of the water bearing formation.

Static water-level measurements in individual wells used to construct county PSM's are indicative of the water-level at the time of well completion. The groundwater level within an aquifer constantly fluctuates in response to rainfall, evapotranspiration, groundwater movement, and groundwater pumping. Therefore, measured static water-levels in an area may differ due to local or seasonal variations. Because fluctuations in groundwater are typically small, static water-levels can be used to construct a generalized PSM. Groundwater flow is naturally from areas of recharge toward areas of discharge. As a general rule, but certainly not always, groundwater flow approximates the overlying topography and intersects the land surface at major streams.

Universal Transverse Mercator (UTM) coordinates for the water wells were either physically obtained in the field, determined through address geocoding, or reported on water well records; however, the location of the majority of the water well records used to make the PSM were not field verified. Elevation data were either obtained from topographic maps or a digital elevation model. Quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

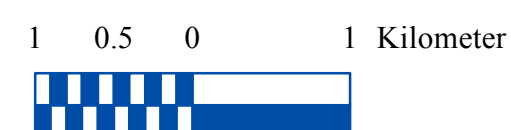
Unconsolidated static water levels in Starke County range from a high of 738 feet mean sea level (msl) in the northeastern section of the county, to a low of 652 feet msl in the southwestern portion. Groundwater flow direction in the Kankakee River Basin is to the West toward the Kankakee River, and generally to the south toward the Tippecanoe River within the Upper Wabash River Basin.

The county PSM can be used to define the regional groundwater flow path and to identify significant areas of groundwater recharge and discharge. County PSM's represent overall regional characteristics and are not intended to be a substitute for site-specific studies.

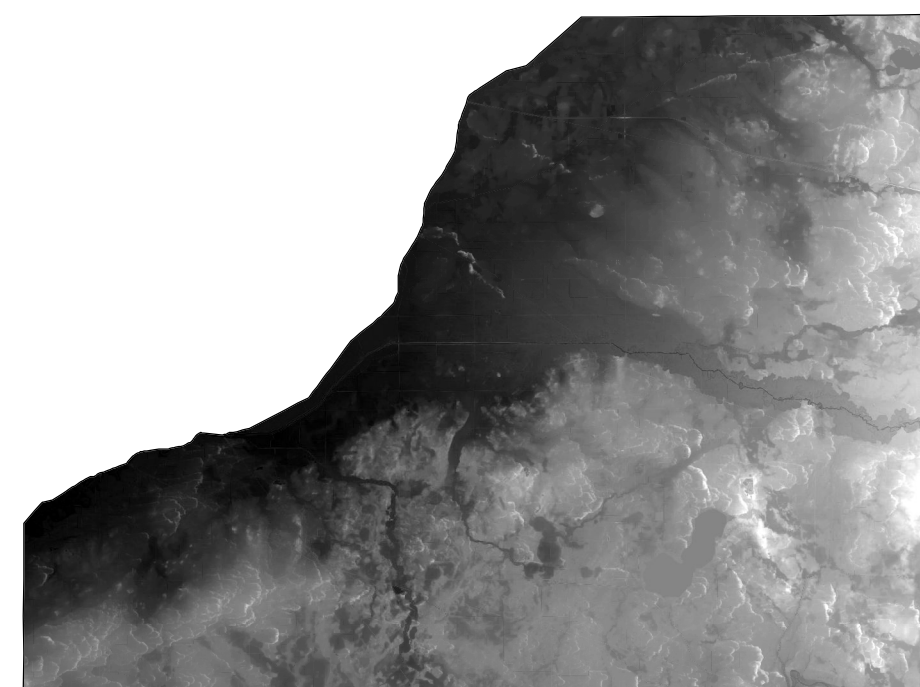


EXPLANATION

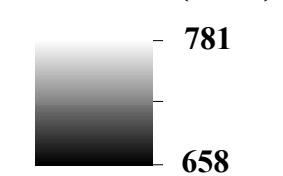
- Line of equal elevation, in feet above mean sea level
- Potentiometric Contour interval 10 feet
- Basin Boundary
- Stream
- County Road
- State Road
- US Highway
- Municipal Boundary
- State Managed Property
- Lake & River



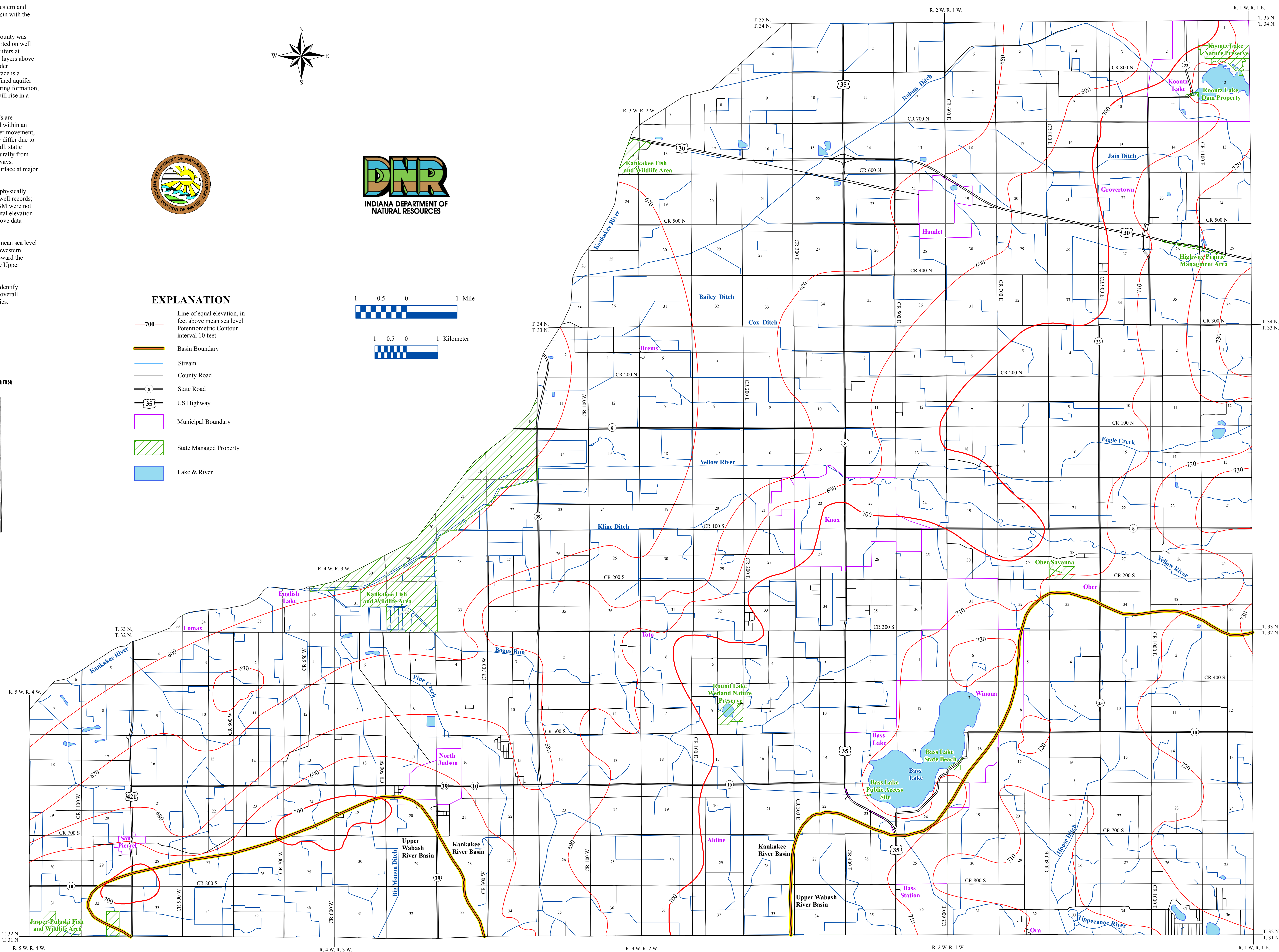
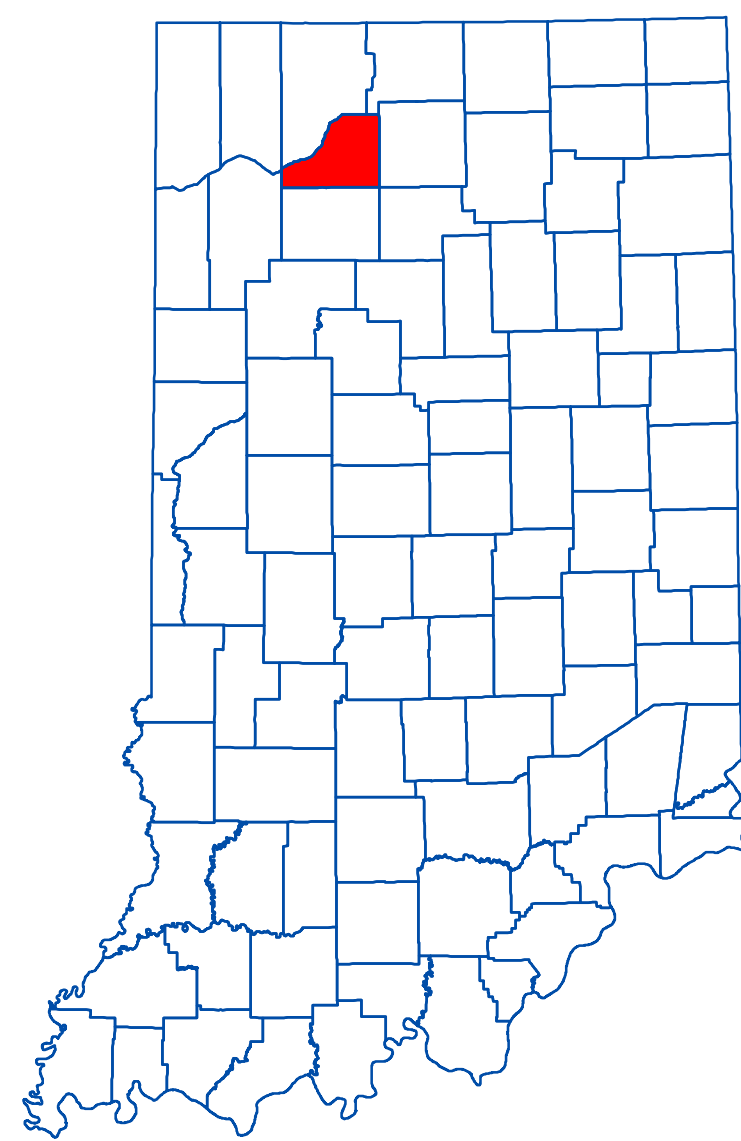
Digital Elevation Model of Starke County, Indiana



Elevation (feet)



Location Map



Map Use and Disclaimer Statement

We request that the following agency be acknowledged in products derived from this map: Indiana Department of Natural Resources, Division of Water.

This map was compiled by staff of the Indiana Department of Natural Resources, Division of Water using data believed to be reasonably accurate. However, a degree of error is inherent in all maps. This product is distributed "as is" without warranties of any kind, either expressed or implied. This map is intended for use only at the published scale.

Map generated by Robert K. Schmidt and Joel D. Sanderson
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This map was created from several existing shapefiles. Township and Range Lines of Indiana (line shapefile, 20020621), Land Survey Lines of Indiana (polygon shapefile, 20020621), and County Boundaries of Indiana (polygon shapefile, 20020621), were all from the Indiana Geological Survey and based on a 1:24,000 scale. Draft road shapefiles, System1 and System2 (line shapefiles, 2003), were from the Indiana Department of Transportation and based on a 1:24,000 scale. Populated Areas in Indiana 2000 (polygon shapefile, 20021000) was from the U.S. Census Bureau and based on a 1:100,000 scale. Hydrography, Streams (NHD) (line shapefile, 20081218), Rivers (NHD) (polygon shapefile, 20081218), Lakes (NHD) (polygon shapefile, 20081218) was from the U.S. Geological Survey and the U.S. Environmental Protection Agency, and based on a 1:24,000 scale. Managed Lands IDNR IN (polygon shapefile, 20100920) was from the Indiana Department of Natural Resources and based on a 1:24,000 scale. Digital Elevation Model image is derived from the Indiana OrthoLiDAR Statewide Collection Program (2011). Potentiometric Surface Map of the Unconsolidated Aquifers of Starke County, Indiana (line shapefiles, Schmidt, 2013) was based on a 1:24,000 scale.

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

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