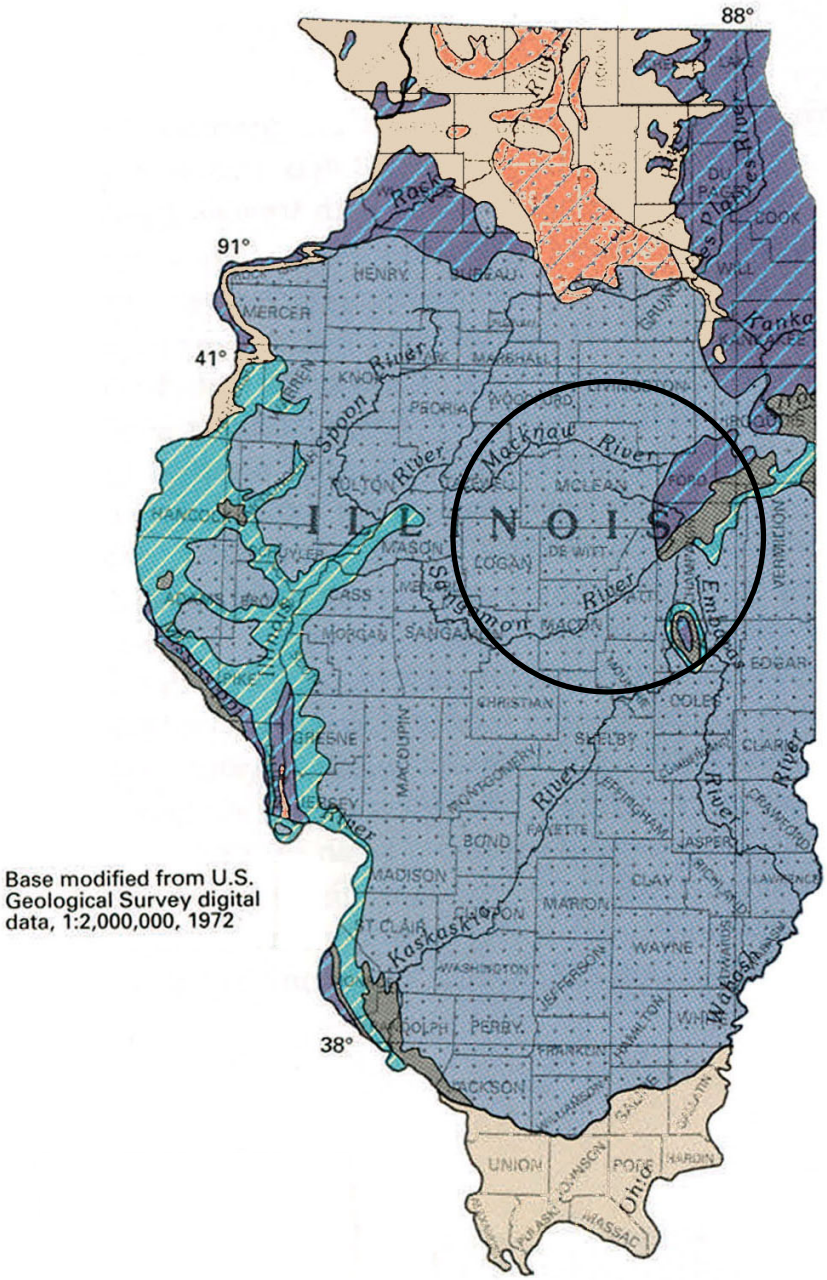
Site Safety Analysis Report for the EGC Early Site Permit

Figure 2.4-16

Aquifers in Consolidated Rocks from Pennsylvanian to Silurian-Devonian 730-K



Legend

- Pennsylvania aquifers - Sandstone and some limestone in rocks of Pennsylvanian age
- Mississippian aquifers - Limestone and sandstone in rocks of Mississippian age
- Silurian-Devonian aquifer - Dolomite and limestone in rocks of Devonian and Silurian ages
- Not a principal aquifer
- Cambrian-Ordovician aquifers - Sandstone and dolomite in rocks of Ordovician and Cambrian ages
- Apprroximate study area (50-mi radius)

Data Source:
USGS, 1995a

N

Not to Scale

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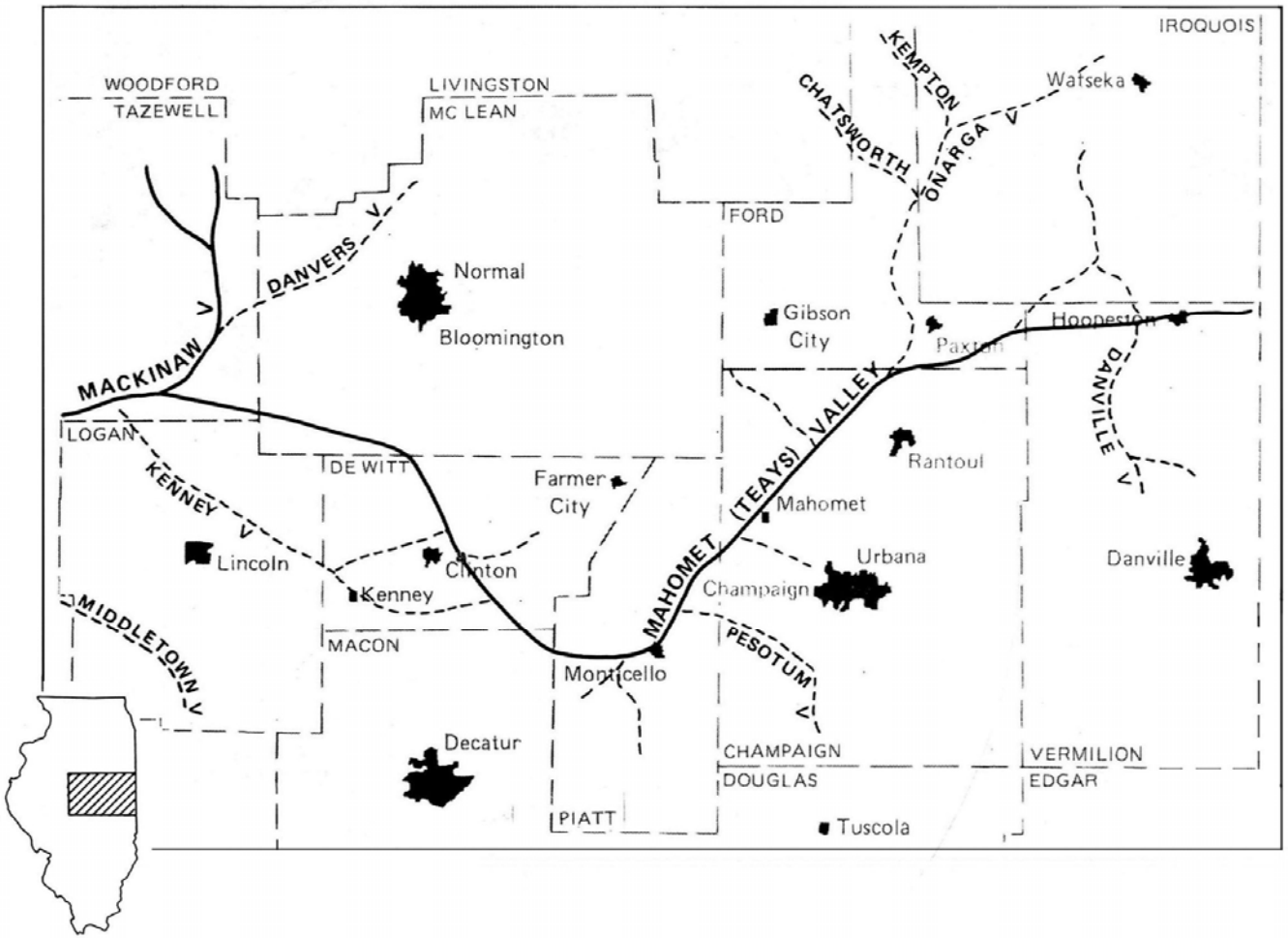
Figure 2.4-17
Axes of Major Bedrock in Central Illinois



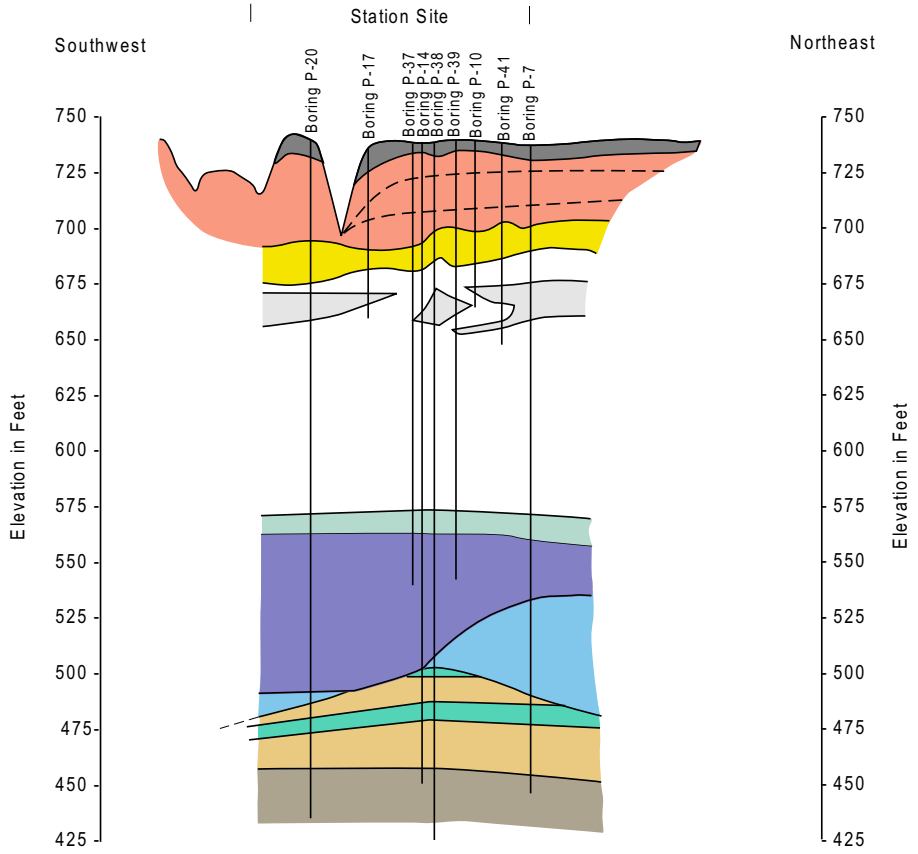
Legend

Approximate Axis of the Bedrock Valley

Data Source:
Kempton et al., 1991

N

Not to Scale



NOTES:

1. Groundwater Levels indicated on the subsurface section were obtained by interpolating between borings with piezometers. Information on actual groundwater levels exist only at boring locations with piezometers. It is possible that groundwater levels between borings with piezometers may vary from those indicated.

2. The depth and thickness of soil and rock strata indicated on the subsurface section were obtained by interpolating between borings. Information on actual soil and rock conditions exist only at boring locations. It is possible that soil and rock conditions may vary from those indicated.

3. The discussion in the text is necessary for proper understanding of the nature of the subsurface materials

4. Elevations refer to the USGS Datum.

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Figure 2.4-18

Near Site Cross Section of Hydrogeologic Units and Piezometric Surfaces

Legend

Quaternary

- Wisconsinan
  - LOESS - Brown to mottled brown and gray clayey silt or silty clay with trace fine sand; Weathered
  - WISCONSINAN GLACIAL TILL - Brownish-gray to gray clayey silt or silty clay with sand and gravel; Contains irregular and discontinuous lenses of sand and silt throughout (glacial outwash and possibly local lacustrine deposits)
- Sangamonian
  - INTERGLACIAL ZONE - Includes dark gray to gray organic clayey silt or silty clay (colluvial soils), greenish to bluish-gray clayey silt with sand and gravel (reworked Illinoian Glacial Till)
- Illinoian
  - ILLINOIAN GLACIAL TILL - Brownish-gray to gray clayey silt with sand and gravel to very sandy silt or silty sand with some clay and gravel
  - Interbedded outwash deposits in upper horizons
- Yar-Mouthian
  - LACUSTRINE DEPOSIT - Brownish-gray to black and gray clayey silt to silt, organic in zones; Includes greenish to bluish-gray clayey silt with sand and gravel (reworked and weathered pre-Illinoian Glacial Till); Assignment to Yarmouthian Glacial Stage is tentative
- Kansan
  - PRE-ILLINOIAN GLACIAL TILL - Grayish-brown to brown silty clay and clayey silt with some sand and gravel; Brown color and relatively high clay content is characteristic; Tentatively assigned to Kansan Glacial Stage on the basis of clay analysis by Illinois State Geological Survey
  - PRE-ILLINOIAN ALLUVIAL & LACUSTRINE DEPOSIT - Consists of grayish-brown, brown, and green clayey silt and silty clay with sand and some gravel (reworked glacial till) and gray to brown clayey silt with organic debris (lacustrine or low energy alluvial deposit); Included as part of the Mahomet bedrock deposit in areas where it is underlain by sandy outwash deposits

Pennsylvanian

- BEDROCK - Interbedded layers of limestone, shale, and siltstone assigned to the McLeansboro Group, Modesto Formation on the basis of spore analysis of the coal encountered in boring B-31
- LIMESTONE - Greenish-gray, gray and brown, fine to coarsely crystalline, silty, thin bedded to massive, numerous shale partings in zones, fossiliferous.
- SHALE - Gray to dark gray shale, carcoraceous to calcareous; clayey in zones, expansive, slickensides; occasional concretion
- SILTSTONE - Light gray siltstone, micaceous, fine sandy, cross-bedded in zones; occasional interbedded layer of silty sandstone

Data Source:
CPS, 2002

Not to Scale

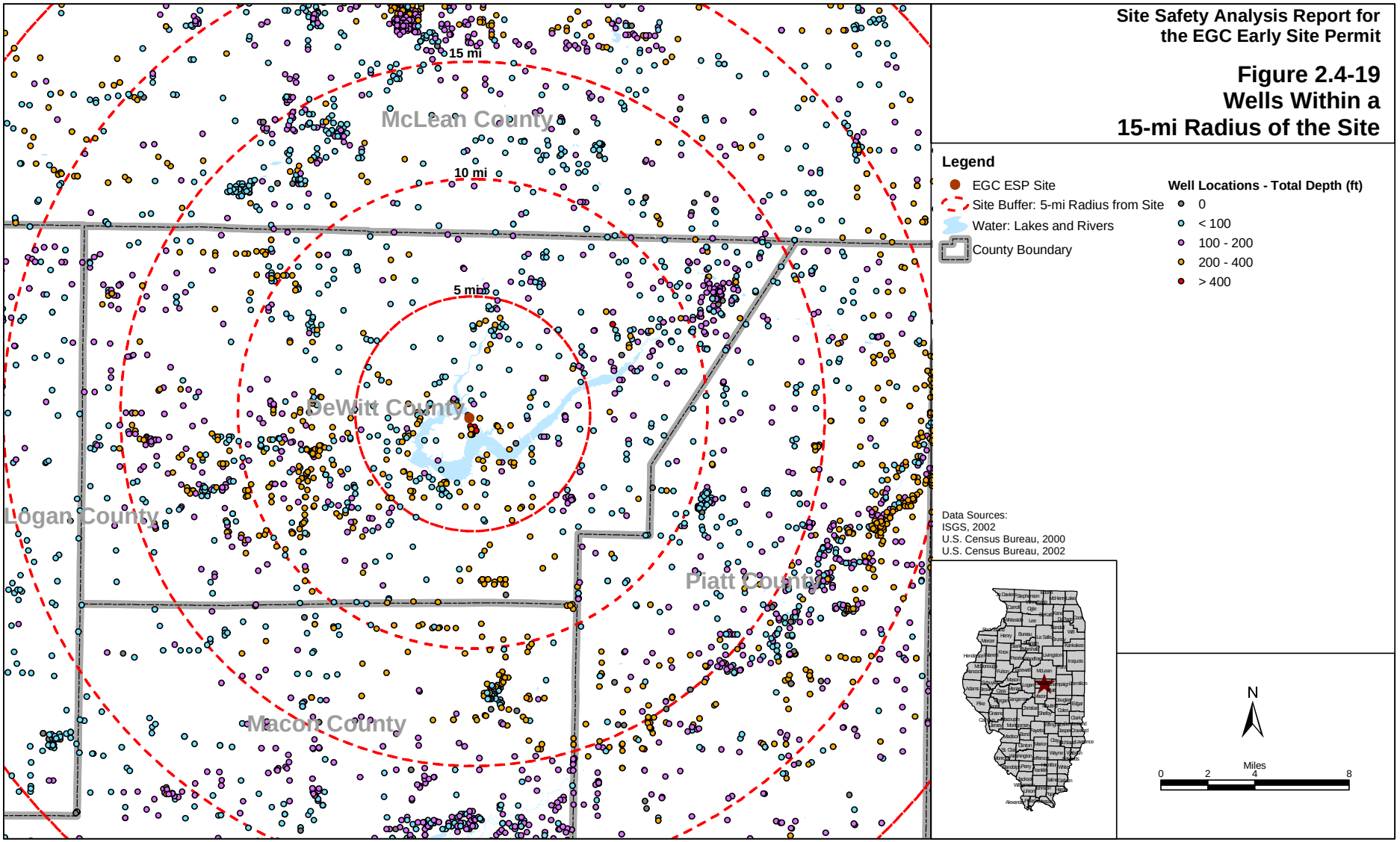

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Figure 2.4-19
Wells Within a 15-mi Radius of the Site

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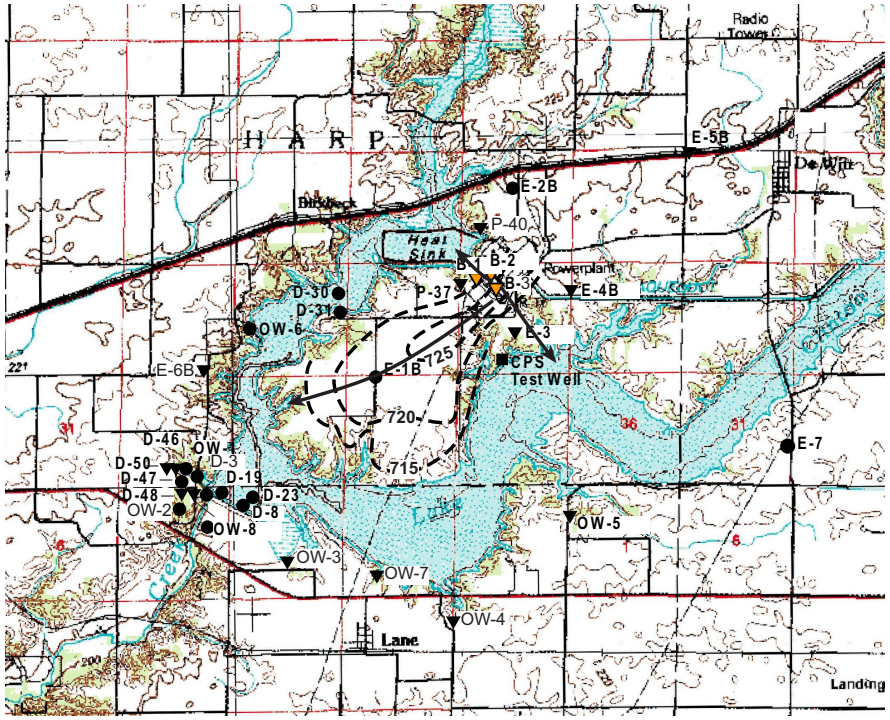
Figure 2.4-20
Location of Piezometers, CPS Test Well, and Water Table in Site Vicinity



Legend

- CPS Test Well
- Functional Piezometer (As of 12 - 77)
- Non-Functional Piezometer (As of 12 - 77)
- Inferred Water Table Contour, Wisconsinan Deposits
- Piezometer Installed in July/August 2002
- Flow Line

NOTES

1. Datum is mean sea level
2. Piezometer installation data are listed in Table 2.3-15
3. Base map modified from USGS, 15' Series topographic map: Maroa, Ill., 1957

Data Source:
CPS, 2002

N

0 1

Scale in Miles