SURFICIAL GEOLOGY OF NAPERVILLE QUADRANGLE
DU PAGE COUNTY, ILLINOIS

Prairie Research Institute
ILLINOIS STATE GEOLOGICAL SURVEY

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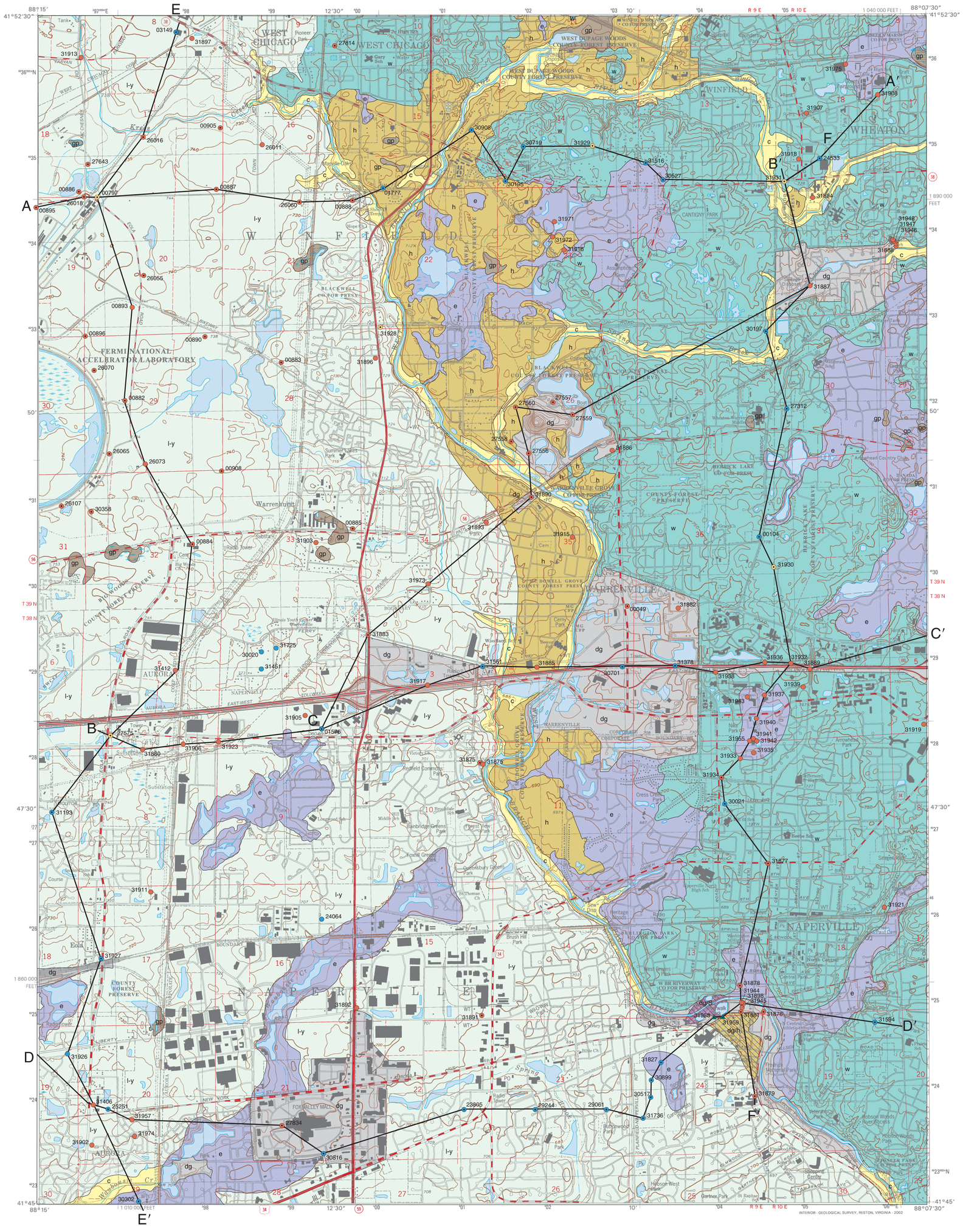
2013

Illinois Geologic Quadrangle Map
IGQ Naperville-SG



QUATERNARY DEPOSITS

Description	Unit	Interpretation
HUDSON EPISODE (~14,600 years before present [B.P.] to today)[1]		
Fill (disturbed earth material); primarily material reworked from underlying deposits; includes landfill refuse and earthen liners	Disturbed ground: dg	**Disturbed land;** embankments and mounds (gray); pits and quarries; landfills (diagonal lines over underlying unit)
Peat and muck; black and brown; interbedded sand and silty clay (gray) and marl (white to light olive gray); less than 15 feet thick in most places	Grayslake Peat: gp	**Decomposed wetland vegetation and sediment** in depressions and some toe slopes
Sand and gravel; well-sorted sand, lenses of peat, grading laterally to organic-rich silt and clay; less than 10 feet thick in most places	Cahokia Formation: c	**Floodplain alluvium along rivers and streams**
HUDSON EPISODE (14,600 cal yr BP to present) and WISCONSIN EPISODE (29,000–14,600 cal yr BP)[1]		
Silt, clay, and fine sand; stratified, laminated, and uniform; gray to brown, fossiliferous in many places; no more than 15 feet thick in most places	Equality Formation: e	**Lake deposits** in areas of ice collapse (kettles) and in valleys as slackwater deposits
WISCONSIN EPISODE: Michigan Subepisode (~29,000–14,600 years B.P.)[1]		
Sand and gravel or sand, lenses of silt and clay or diamicton; as much as 50 feet thick	Henry Formation: h	**Proglacial outwash;** along the West Branch Du Page River, the deposits are channelized
Diamicton interbedded with sand and gravel; may include discontinuous patches of surficial silt, clay, and sand (Equality Formation); the diamicton matrix is gray and generally clayey and silty; as much as 30 feet thick	Wadsworth Formation: w	**Mostly debris flows and deposits of alluvium** deposited in proglacial fans
Diamicton; sandy loam to silt loam; bouldery; rich in dolomite clasts; abundant interbeds of sand and gravel; as much as 50 feet thick	Haeger Member, Lemont Formation: l-h	**Till and debris flow deposits**
Sand and gravel below the Haeger Member; fines upward; in some places comprises very large boulders at the base (>20 × 20 × 10 feet); fines upward; as much as 20 feet thick	Beverly Tongue, Henry Formation (cross sections only): h-b	**Proglacial outwash;** the basal boulders may be lag deposits from earlier glacial deposits
Diamicton; variably textured, interbedded with lenses of sand and gravel and less silt loam; may include discontinuous patches of surficial silt, clay, and sand (Equality Formation); three facies are identified based on mean values of texture, moisture content, and Atterberg limits	Yorkville Member, Lemont Formation: l-y	**Till and debris flow deposits**
Diamicton, silty clay loam matrix; few interbeds of sorted sediment; upper part with vague layering in places; as much as 40 feet thick	(cross sections only): l-y(a)	**Till and debris flow deposits**
Diamicton, loam matrix; common interbeds of sorted sediment; as much as 60 feet thick	l-y(b)	**Mostly till**
Diamicton, clay matrix; laminated in places, common basal layer of silt or sand and gravel, especially in buried bedrock valleys; as much as 60 feet thick	l-y(c)	**Till formed of deformed lacustrine sediment**
Diamicton, loam to sandy loam matrix; associated with abundant interbeds of sand and gravel; commonly occurs above bedrock; as much as 70 feet thick	Batestown Member, Lemont Formation (cross sections only): l-b	**Till, debris flow deposits, and alluvium**
Diamicton, silty clay loam matrix; thin, associated with sand and gravel; as much as 80 feet thick	Lemont Formation, undifferentiated (cross sections only): l(u)	**Till and debris flow deposits; lacustrine sediment; sand and gravel outwash**

PRE-QUATERNARY DEPOSITS

Description	Unit	Interpretation
SILURIAN SYSTEM (440–410 million years B.P.)		
Dolomite; microcrystalline; white, light gray, and light greenish gray; cherty in places; thin beds of green shale (Kankakee and Joliet Formations) about 60 feet thick; dolomite crops out in abandoned quarries, where it is covered by gravelly fill generally less than 10 feet thick	Wilhelmi, Elwood, Kankakee, and Joliet Formations: S	**Dolomitized carbonate bank deposits**

[1]The time periods for the Wisconsin Episode and the Hudson Episode are reported as calibrated radiocarbon years and can be directly compared with calendar years before 1950 (Stuiver et al. 2005).

Data Type

- Outcrop
- Stratigraphic boring
- Water-well boring
- Engineering boring

26211 — Boring labels indicate the county number. Dot indicates boring is to bedrock.

Contact

A — A′ Line of cross section

Note: The county number is a portion of the 12-digit API number on file at the ISGS Geological Records Unit. Most well and boring records are available online from the ISGS website.

Base map compiled by Illinois State Geological Survey from digital data (500 dpi Digital Raster Graphic) provided by the United States Geological Survey. Topography compiled 1988. Planimetry derived from imagery taken 1998 and other sources. Public Land Survey System and survey control current as of 1991. Boundaries current as of 2002.

North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator
10,000-foot ticks: Illinois State Plane Coordinate system, east zone (Transverse Mercator)
1,000-meter ticks: Universal Transverse Mercator grid system, zone 16

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SCALE 1:24,000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

BASE MAP CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology based on field work by B. Brandon Curry and Henry D. Fineberg, 2010.

Digital cartography by Jennifer E. Carrell and Jane E.J. Domier, Illinois State Geological Survey.

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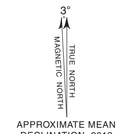
1	2	3
4		5
6	7	8

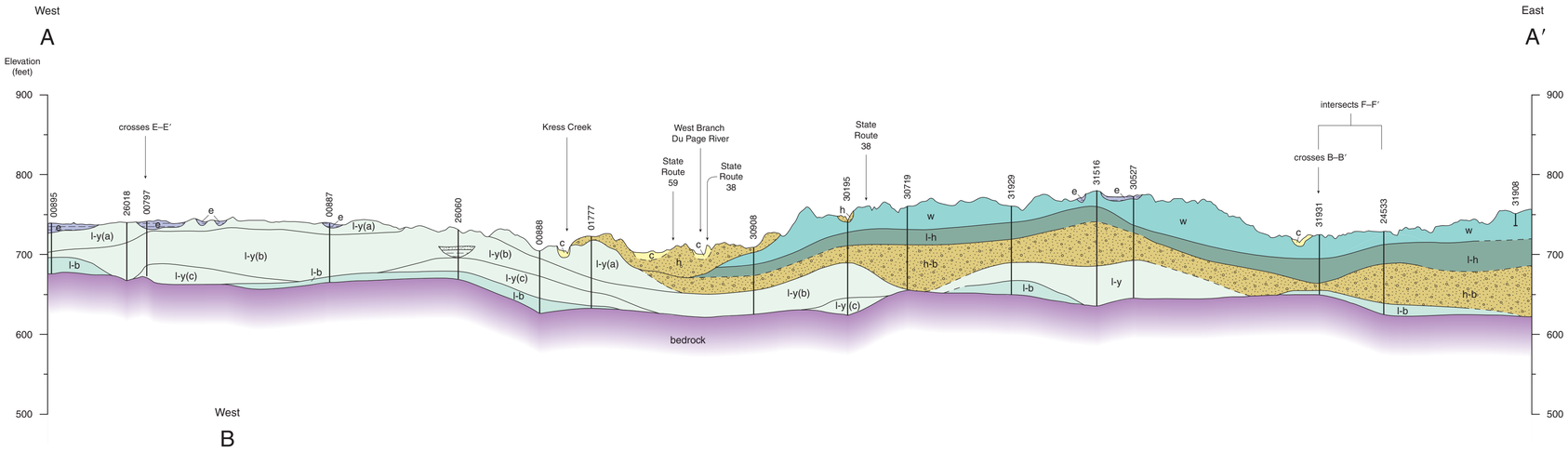
ADJOINING QUADRANGLES
1 Geneva
2 West Chicago
3 Lombard
4 Aurora North
5 Wheaton
6 Aurora South
7 Normantown
8 Romeoville

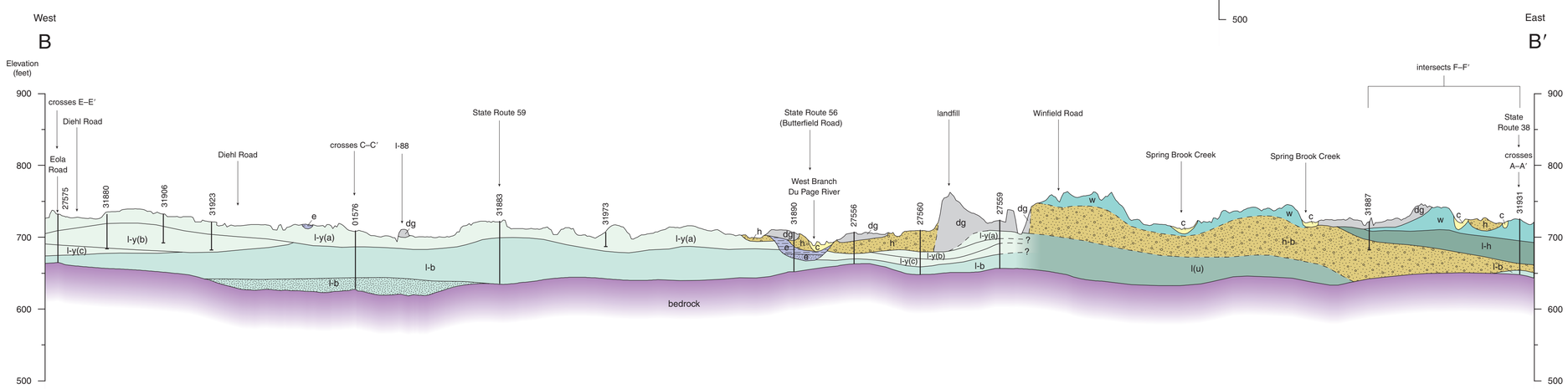


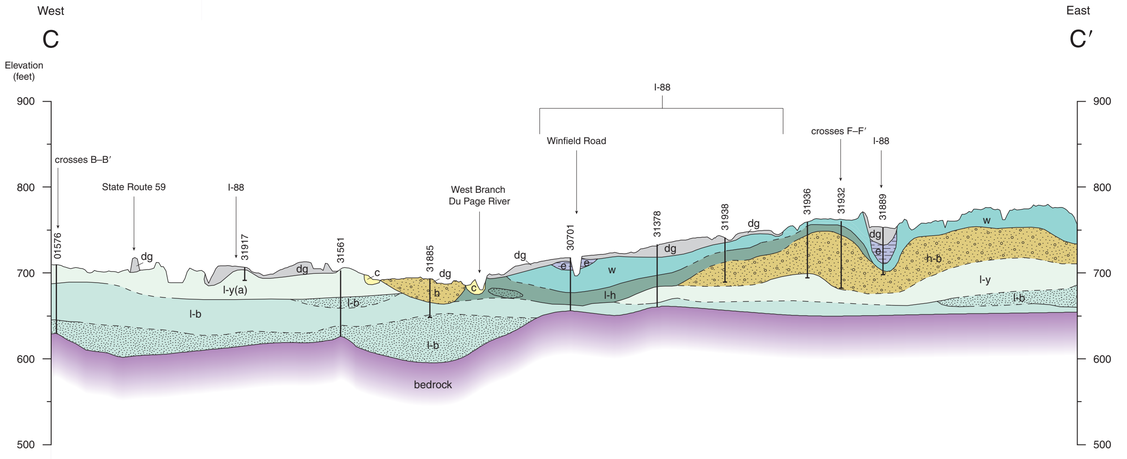
APPROXIMATE MEAN DECLINATION, 2013

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U.S. Route
State Route







Cross Sections

- Sand and gravel
- Sand
- Laminated silt and clay
- Diamicton (above bedrock)
- Contact
- Inferred contact

Horizontal scale: 1 inch = 2,000 feet
Vertical scale: 1 inch = 100 feet
Vertical exaggeration: 20×

The extent of surficial clay, silt, and fine sand of the Equality Formation is shown schematically on these cross sections. The patches are likely smaller than shown in most areas.

- dg — Disturbed ground
- c — Cahokia Formation
- e — Equality Formation
- h — Henry Formation
- w — Wadsworth Formation
- l-h — Haeger Member, Lemont Formation
- h-b — Beverly Tongue, Henry Formation
- l-y — Yorkville Member, Lemont Formation, undifferentiated
- l-y(a) — Yorkville Member, Lemont Formation, silty clay loam facies
- l-y(b) — Yorkville Member, Lemont Formation, loam facies
- l-y(c) — Yorkville Member, Lemont Formation, clay facies
- l-b — Batestown Member, Lemont Formation
- l(u) — Lemont Formation, undifferentiated
- Bedrock (Silurian dolostone)