STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY
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SURFICIAL GEOLOGY OF THE COSHOCTON QUADRANGLE, OHIO

by
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Digital Map Series SG-4A
Coshocton
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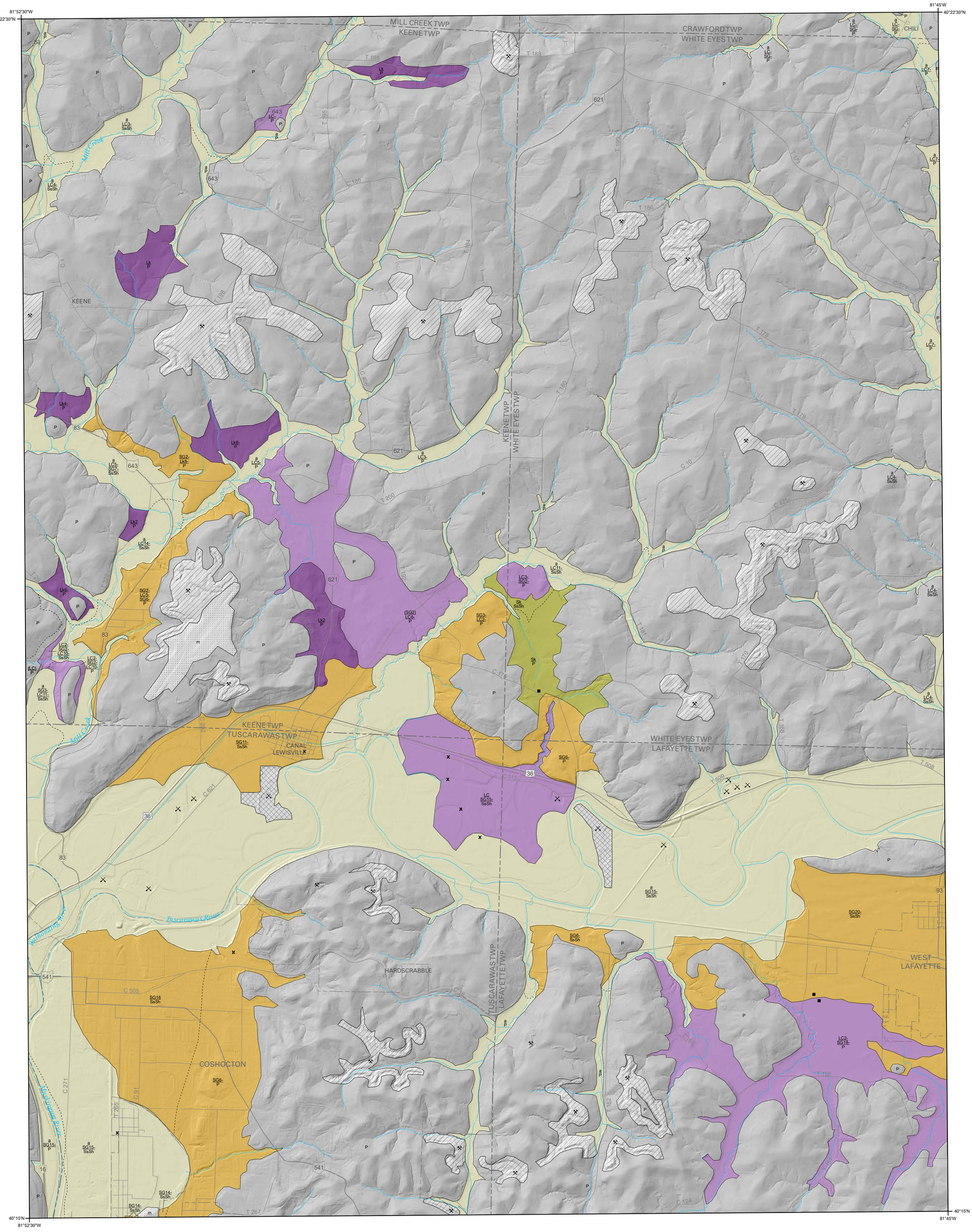

MILES 1 0 1 2
KILOMETERS 1 0 1 2 3

N

5,000 0 5,000 10,000 FEET
1,000 0 1,000 2,000 3,000 METERS

SCALE 1:24,000

MAPPING CONVENTIONS

This map provides a three-dimensional framework of the study area's surficial geology and depicts four important aspects of surficial geology:

1. Geologic deposits, indicated by letters that represent the major lithologies.
2. Thicknesses of the individual deposits, indicated by numbers and modifiers.
3. Lateral extents of the deposits, indicated by map-unit area boundaries (solid and dashed lines).
4. Vertical sequence of deposits, by the stack of symbols within each map-unit area.

Letters represent geologic deposits (lithologic units) and are described in detail below. Lithologic units may be a single lithology, such as sand (S) or clay (C), or a combination of related lithologies that are found in specific depositional environments, such as sand-and-gravel (SG) or ice-contact (IC) deposits. The bottom symbol in each stack indicates the bedrock lithologies that underlie the surficial deposits. The detailed lithologic unit descriptions below summarize:

1. Geologic characteristics, such as range of textures, bedding, and age.
2. Engineering properties or concerns attributed to the unit.
3. Depositional environments.
4. Geomorphology or geomorphic locations.
5. Geographic locations within the map area, if pertinent.

Numbers (without modifiers) that follow the lithology designators represent the average thickness of a lithologic unit in tens of feet (for example, *3* represents 30 feet [ft]). If no number is present, the average thickness is implied as *1* (10 ft). These unmodified numbers correspond to a thickness range centered on the specified value but may vary ±50 percent. For example, *T4* indicates an average thickness of till in a map-unit area is 40 ft, but that thickness may vary from 20 to 60 ft.

Modifiers provide additional thickness and distribution information:

1. Parentheses indicate that a unit has a patchy or discontinuous distribution and is missing in portions of that map-unit area. For example, *(T2)* indicates that till with an average thickness of 20 ft is present in only part of that map-unit area.
2. A negative sign (-) following a number indicates the maximum thickness for that unit in an area such as a buried valley or ridge. Thickness decreases from the specified value, commonly near the center of the map-unit area, to the thickness of the same lithologic unit and vertical position specified in an adjacent map-unit area. For example, a *SG9-* map-unit area adjacent to a *SG3* area indicates a sand-and-gravel unit having a maximum thickness of 90 ft that thins to an average of 30 ft at the edge of the map-unit area. If the material is not present in an adjacent area, it decreases to zero at that boundary.

The small scale of this reconnaissance map generalizes the great local variability within surficial deposits. That variability is explained in the lithologic unit descriptions and by the use of thickness ranges. Some areas and lithologies are too small to delineate at 1:24,000 scale and have been included in adjacent areas. This map should serve only as a regional predictive guide to the area's surficial geology and not as a replacement for subsurface borings and geophysical studies required for site-specific characterizations.

UNIT DESCRIPTIONS*

m — **Made land.** Large areas of cut and fill, such as dams, landfills, and urban areas.

⚒ — **Quarry.** Floored in bedrock; may contain reclaimed areas.

⚒ — **Sand-and-gravel pit.** Pit bottom generally underlain by unconsolidated lithologic units of surrounding polygon(s). May contain reclaimed areas.

a — **Alluvium (Holocene).** Includes a wide variety of textures from silt to clay to boulders. Commonly includes organic material, generally not compact. Found in floodplains of modern streams and mapped only where areal extent and thickness are noteworthy. Also includes alluvial terraces, old floodplain remnants that are positioned tens of feet above modern floodplains.

LC — **Silt and clay with occasional sand-and-gravel interbeds (unspecified age).** Present as deltaic deposits, outwash, deposits in upland depressions, and backwater lake deposits.

Lk — **Silt and clay (Minford silt; Pre-Illinoian).** Present on high terraces or as eroded remnants of lacustrine clays and silts, finely laminated, often covered with loess and/or colluvium, sometimes underlain by sand and gravel.

Sk — **Sand (Pre-Illinoian).** Clayey to pebbly, weathered, and leached. Overlain by loess with sand- to pebble-sized nodules of iron oxide and manganese oxide concentrated near loess/sand contact. Sand mostly quartz and other resistant lithologies. Erodes easily when vegetation removed. Unit fluvial (deposited in high-level "Teays-age" paleovalleys) and aeolian (loess and sheet sands in uplands).

SG — **Sand and gravel (Wisconsinan).** Intermixed and interbedded sand and gravel commonly containing thin, discontinuous layers of silt, clay, and till. Grains well to moderately sorted, moderately to well rounded, finely stratified to massive, may be cross bedded, and locally may contain organic material. Widespread fluvial deposits in terraces and buried valleys. May be older in deeper buried valleys.

P — **Sandstone, siltstone, shale, clay, limestone, and coal (Pennsylvanian).** Sandstone thinly bedded to massive, medium to coarse grained with abundant rounded quartz pebbles; quartz-pebble conglomerate present. Interbeds of shale, sandstone, siltstone, clay, coal, and limestone common in upper portions of unit. Common horizontal and vertical changes in rock type. Stratigraphic names: Allegheny, Pottsville, and Conemaugh Groups undivided.

SsSh — **Sandstone and shale (Mississippian).** Interbedded shale, siltstone, and sandstone with common vertical and horizontal changes. Associated colluvium. Stratigraphic names: Maxville Limestone, Logan Formation, and Cuyahoga Formation undivided. Present only in subsurface.

■ — Soil boring data collection locality.

× — Geophysical data collection locality. Depth to bedrock determined using passive seismic methods.

——— Boundary between map-unit areas having **different** uppermost, continuous lithologies or significant bedrock lithology change; underlying lithologies may or may not differ.

- - - - - Boundary between map-unit areas having the **same** uppermost, continuous lithology but different thicknesses or different underlying lithologies.

Note: Boundary types reflect the relationships among uppermost continuous lithologies only, not patchy, discontinuous lithologies (in parentheses).

*The colors on the map correspond to the uppermost continuous map units and serve to assist in visualizing the geology of the area. Discontinuous units (in parentheses) and subsurface-only units are not assigned colors.

Location of Coshocton 1:24,000 quadrangle in Ohio.

Basemap derived from various State of Ohio datasets
Projection is Ohio coordinate system, south zone
North American Datum 1983

www.OhioGeology.com

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