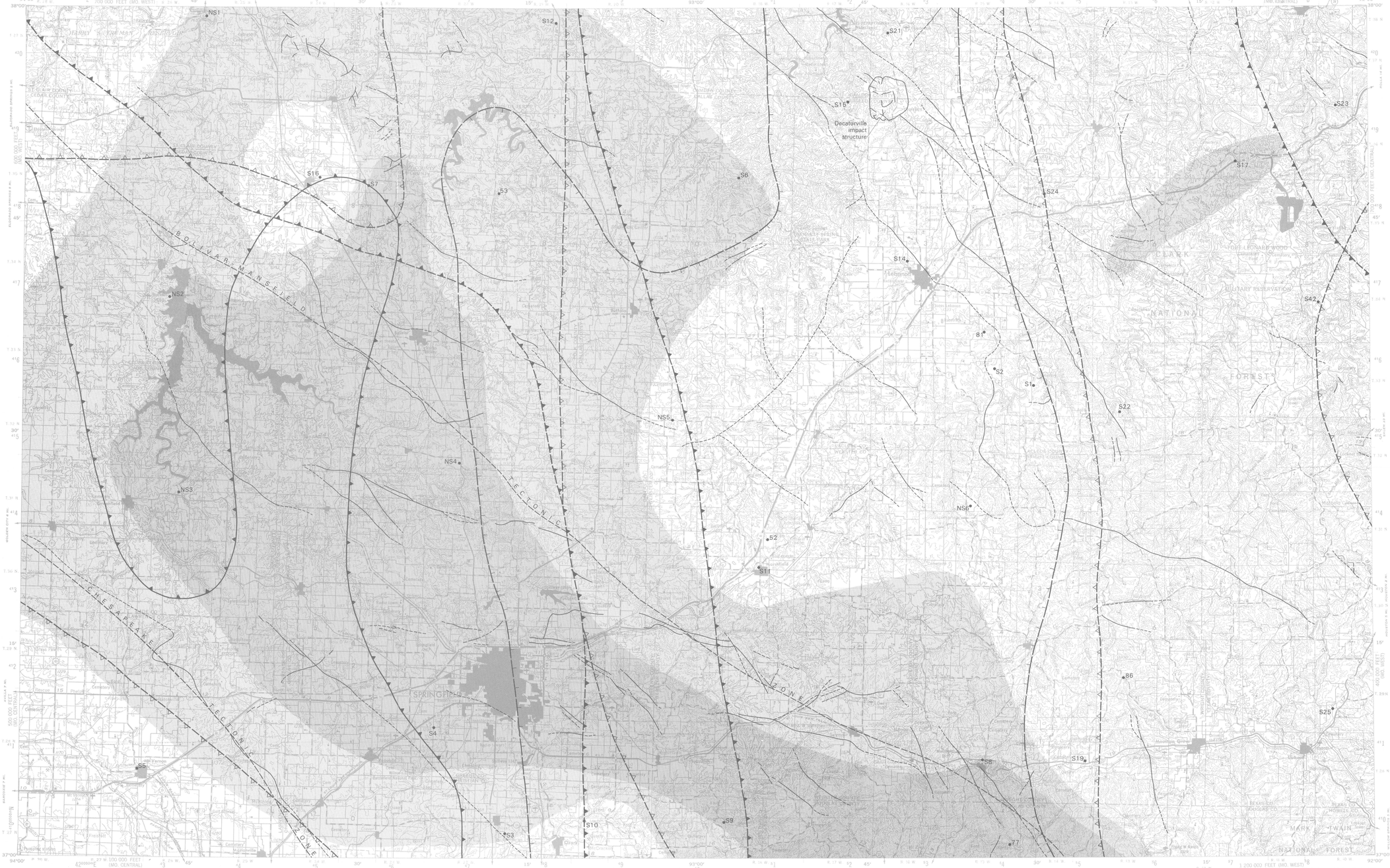
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

BULLETIN 1942
PLATE 1



EXPLANATION

Areas of dolomite lithofacies in subsurface Cambrian rocks

Note: The upper 50 percent of the post-Bonneterre Cambrian section and the Ordovician section is chiefly dolomite throughout the quadrangle. Mississippian rocks, present only in the southwestern part of the quadrangle, are chiefly cherty limestone

Dolomite lithofacies at different stratigraphic levels in post-Bonneterre Cambrian rocks (see Palmer, 1985)

60-percent level (a 10-ft interval at 60 percent of the distance from the top of the post-Bonneterre Cambrian to the base)—Single facies boundary in western part of quadrangle is interface between dolomitic rocks and mudstone with thin brown shale of the ramp facies. Teeth on dolomite side

70-percent level—Single facies boundary through center of quadrangle is interface between deep ramp rocks to the west and shallow-water dolomitized carbonate rocks to the east. Teeth on dolomite side. Eastern half of the quadrangle is dolomite at this level

80-percent level—All facies boundaries are interfaces between shallow-water dolomite and deep ramp and basin facies (shale and quartz siltstone with thin limy or dolomitic mudstone interbeds). Teeth on dolomite side. Approximately two-thirds of the quadrangle is dolomite at this level

90-percent level—All facies boundaries are limestone-dolomite interfaces. Open teeth on dolomite side. Note broad north-south belt of dolomite through middle of quadrangle, almost coincident with dolomite of the Bonneterre. Small areas of dolomite in northwestern, southwestern, and extreme eastern parts of quadrangle

Bonneterre Formation—Tick marks on dolomite side. Eastern boundary is limestone-dolomite interface. Western boundary is dolomite interface with basin facies (shale, siltstone, sandstone). Dolomite is present throughout most of the central third of the quadrangle

Major Precambrian tectonic zones—From Kisvarsanyi (1982)

Fault—Dashed where inferred. From Middendorf (1985)

S9 **Drill hole**

Geochemically anomalous areas—Insoluble-residue samples from each drill hole in dark-shaded areas contain greater than 5,000 anomalous metal feet (AMF); in light-shaded areas, 3,000–5,000 AMF

REFERENCES CITED

Kisvarsanyi, E.B., 1982, Structural contour map of the Precambrian surface, Springfield 2° quadrangle, Missouri: Missouri Geological Survey Open-File Map OFM–82–98–GI, scale 1:250,000.

Middendorf, M.A., 1985, Structural features of the Springfield 1° × 2° quadrangle, Missouri: Missouri Geological Survey Open-File Map OFM–85–227–MR, scale 1:250,000.

Palmer, J.R., 1985, Lithofacies maps of the Cambrian carbonates of the Springfield 1° × 2° quadrangle, Missouri: Missouri Geological Survey Open-File Map OFM–85–230–GI, 2 sheets, scale 1:500,000.

Base from U.S. Geological Survey, 1954–69

Compiled by R.L. Erickson and Barbara Chazin, 1985

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 100 FEET
WITH SUPPLEMENTARY CONTOURS AT 50 FOOT INTERVALS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
1990 MAGNETIC DECLINATION AT SOUTH EDGE OF SHEET VARIES FROM 2° TO 2°30' EAST

QUADRANGLE LOCATION

MAP SHOWING RECOGNITION CRITERIA FOR MISSISSIPPI VALLEY-TYPE DEPOSITS IN THE SPRINGFIELD 1° × 2° QUADRANGLE, MISSOURI