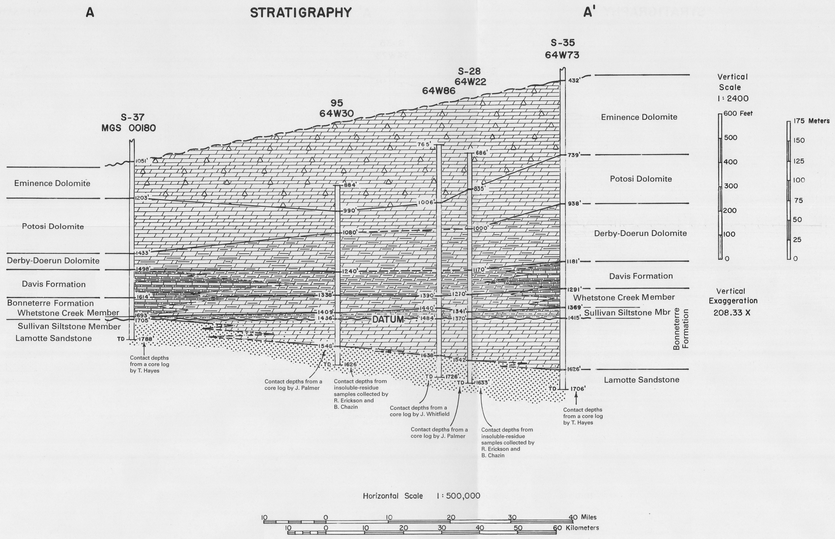
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with the
Missouri Department of Natural Resources, Division of Geology and Land Survey, and the Arkansas Geological Commission

MISCELLANEOUS FIELD STUDIES
MAP MF–1994–E
FOLIO OF THE HARRISON 1° × 2° QUADRANGLE,
MISSOURI AND ARKANSAS
Pamphlet accompanies map

STRATIGRAPHY



EXPLANATION FOR STRATIGRAPHIC CROSS SECTIONS

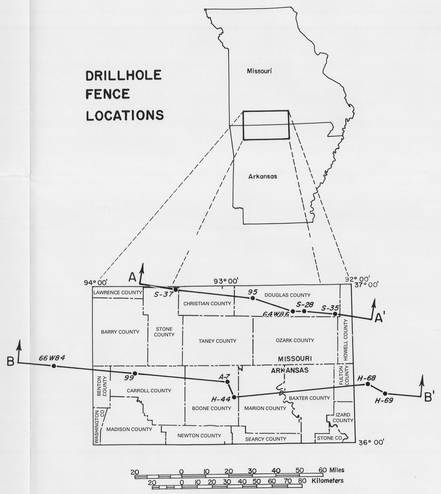
- Correlation line at formation or member boundary—Dashed where correlation is uncertain
- Disconformity
- Unconformity (Section *B–B'* only)

Drill hole — Depth in drill hole, in feet — Total depth of drill hole, in feet

Rock types

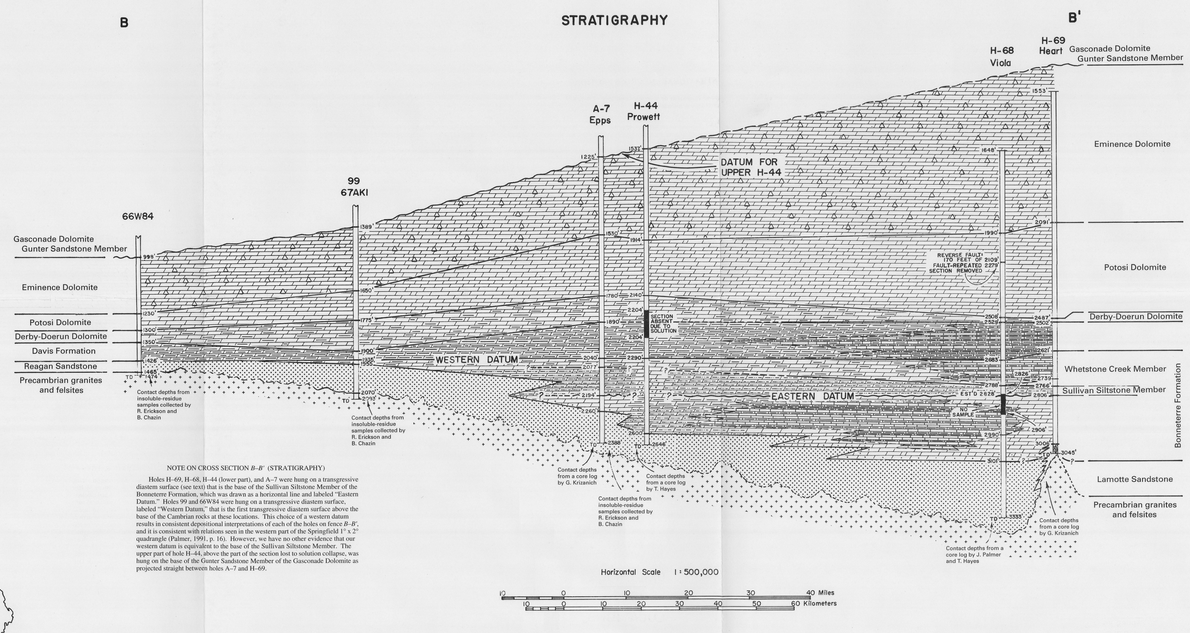
- Dolostone
- Chert-bearing dolostone
- Slightly argillaceous dolostone
- Argillaceous dolostone
- Interbedded calcareous shale and limestone
- Silty dolostone to dolomite-cemented siltstone
- Sandy dolostone
- Sandstone
- Precambrian igneous basement rocks (Section *B–B'* only)

DRILLHOLE FENCE LOCATIONS



INDEX MAP SHOWING LOCATIONS OF DRILL-HOLES AND CROSS SECTIONS IN THE HARRISON 1° x 2° QUADRANGLE, MISSOURI AND ARKANSAS

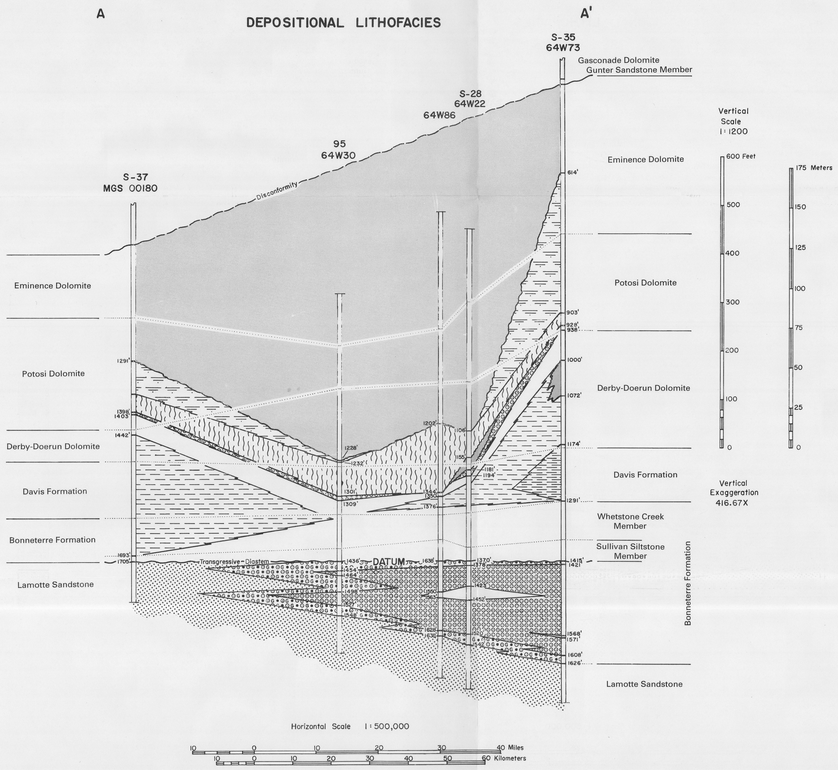
STRATIGRAPHY



NOTE ON CROSS SECTION *B–B'* (STRATIGRAPHY)

Holes H–69, H–68, H–44 (lower part), and A–7 were hung on a transgressive diastem surface (see text) that is the base of the Sullivan Siltstone Member of the Bonneterre Formation, which was drawn as a horizontal line and labeled "Eastern Datum." Holes 99 and 66W84 were hung on a transgressive diastem surface, labeled "Western Datum," that is the first transgressive diastem surface above the base of the Cambrian rocks at these locations. This choice of a western datum results in consistent depositional interpretations of each of the holes on fence *B–B'*, and it is consistent with relations seen in the western part of the Springfield 1° x 2° quadrangle (Palmer, 1991, p. 16). However, we have no other evidence that our western datum is equivalent to the base of the Sullivan Siltstone Member. The upper part of hole H–44, above the part of the section lost to solution collapse, was hung on the base of the Gunter Sandstone Member of the Gasconade Dolomite as projected straight between holes A–7 and H–69.

DEPOSITIONAL LITHOFACIES



EXPLANATION FOR DEPOSITIONAL LITHOFACIES CROSS SECTIONS

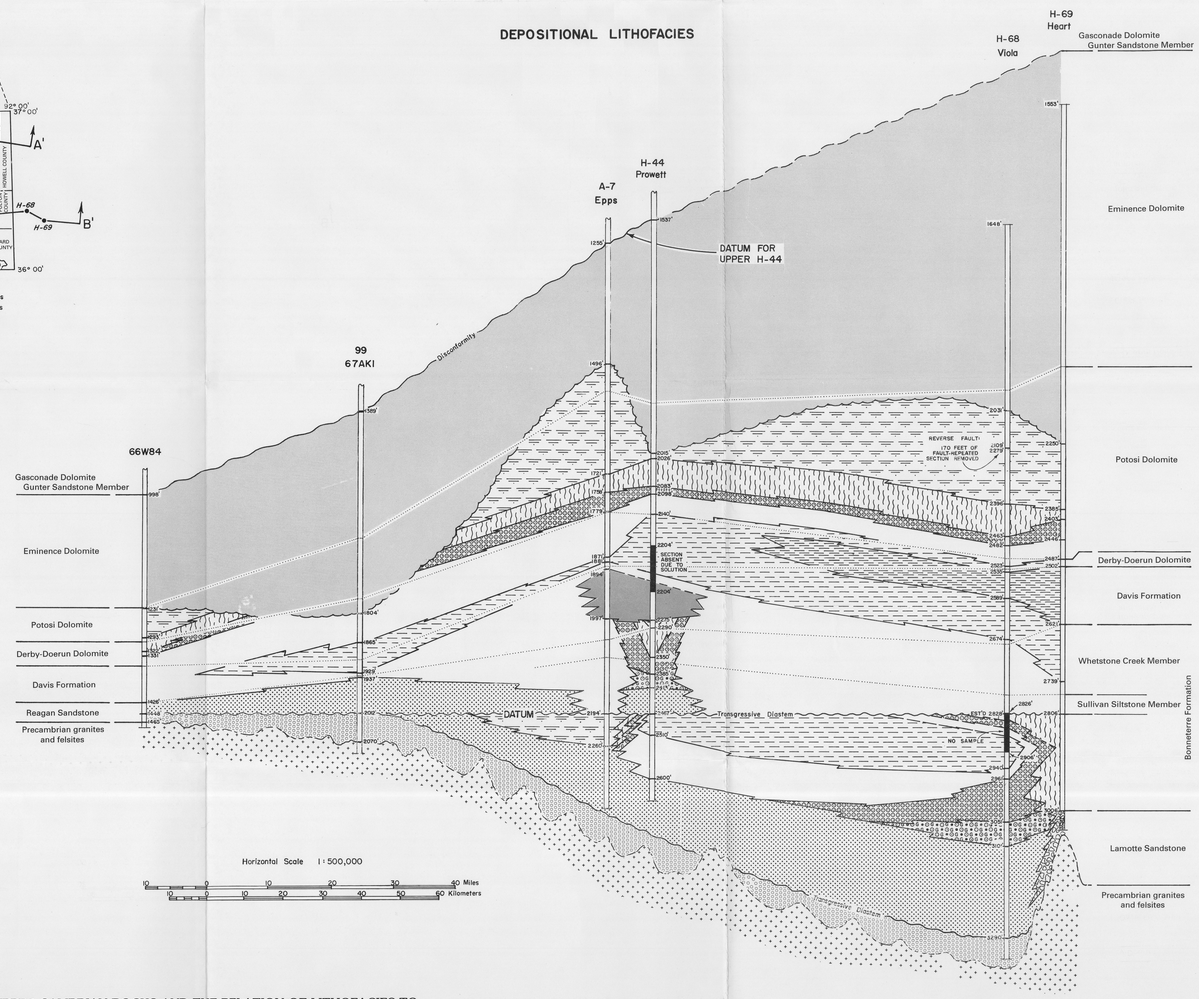
- Contact between lithofacies—Open where contact crosses stratigraphic correlation line
- Correlation line at formation or member boundary
- Disconformity
- Unconformity (Section *B–B'* only)

Drill hole — Depth in drill hole, in feet

DEPOSITIONAL LITHOFACIES ASSOCIATIONS

- Other crystalline carbonate
- Hydrothermal crystalline carbonate
- Regional crystalline carbonate
- Planar stromatolite boundstone and burrowed carbonate mudstone
- Digitate-thrombolite stromatolite boundstone
- Oöid grainstone
- Basinal
- Deep ramp
- Shallow ramp
- Transitional grainstone
- Marine quartz sandstone
- Fluvial sandstone
- Basement-clast sedimentary breccia

DEPOSITIONAL LITHOFACIES



CROSS SECTIONS SHOWING STRATIGRAPHIC AND DEPOSITIONAL LITHOFACIES OF UPPER CAMBRIAN ROCKS AND THE RELATION OF LITHOFACIES TO POTENTIAL FOR MISSISSIPPI VALLEY–TYPE MINERALIZATION IN THE HARRISON 1° × 2° QUADRANGLE, MISSOURI AND ARKANSAS

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