

STRUCTURE AND CORRELATION SECTIONS
EASTERN MOGOLLON SLOPE REGION

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INTRODUCTION

This publication, consisting of four structure and correlation sections across portions of the eastern Mogollon Slope region in east-central Arizona, serves as a companion piece to the Arizona Oil and Gas Conservation Commission subsurface structure maps G-6 (G-6a), G-7, and G-8. It represents an attempt to present graphically structural and stratigraphic information designed to facilitate future investigations of the petroleum potential by industry.

PURPOSE AND SCOPE

The principal purpose in publishing the sections is to provide petroleum exploration geologists a graphic presentation of the subsurface stratigraphy and structure revealed by most of the wells penetrating basement rocks in the study area. Because of the widely diverse "picks" of the top of the Pennsylvanian Naco Formation, as reported in published literature and in well completion reports submitted to the Oil and Gas Conservation Commission, emphasis in presenting stratigraphic data on the sections has been placed on the interval from the base of the Fort Apache Member of the Permian Supai Formation to the top of pre-Pennsylvanian rocks. The petroleum potential of the marine carbonates in this interval, in addition to those of the Fort Apache Member of the Permian and pre-Pennsylvanian sections, has not been evaluated adequately in this frontier area.

A discussion of the structural and stratigraphic relationships revealed by the sections is beyond the scope of this publication. The reader is referred to the excellent work of Peirce et al. (1976) for detailed discussions of the geologic framework of the area, nomenclature and correlation aspects of the Naco Formation-Lower Supai Formation interval, Mogollon Rim surface and Mogollon Slope subsurface, and other pertinent information.

ACKNOWLEDGMENTS

The author is deeply indebted to the American Stratigraphic Company for extending permission to use their excellent logs as the principal source of lithologic information.

REFERENCES CITED

- Huddle, J.W., and Dobrovolsky, E., 1945, Late Paleozoic stratigraphy of central and northeastern Arizona: U.S. Geol. Survey Oil and Gas Inv. Prelim. Chart 10.
Peirce, H. Wesley, and others, 1976, A survey of the uranium favorability of Paleozoic rocks in the Mogollon Rim and Slope region — east-central Arizona: Ariz. Bur. Mines report prepared for U.S. Geol. Survey under Grant No. 14-08-0001-G-147.
Winters, S.S., 1963, Supai Formation (Permian) of eastern Arizona: Geol. Soc. America Mem. 89.

EXPLANATION

SYMBOLS FOR STRATIGRAPHIC UNITS

- P_s Permian Supai Formation (Winters 1963)
P_{aw} Amos Wash Member
P_{fa} Fort Apache Member
P_{sm} Middle Member Huddle and Dobrovolsky (1945)
P_{sl} Lower Member
IP Pennsylvanian System
IP_n Naco Formation
IP_m Molas Fm.
Mrw Mississippian Redwall Formation
Dm Devonian Martin Formation
C Cambrian
PC Precambrian

LITHOLOGY

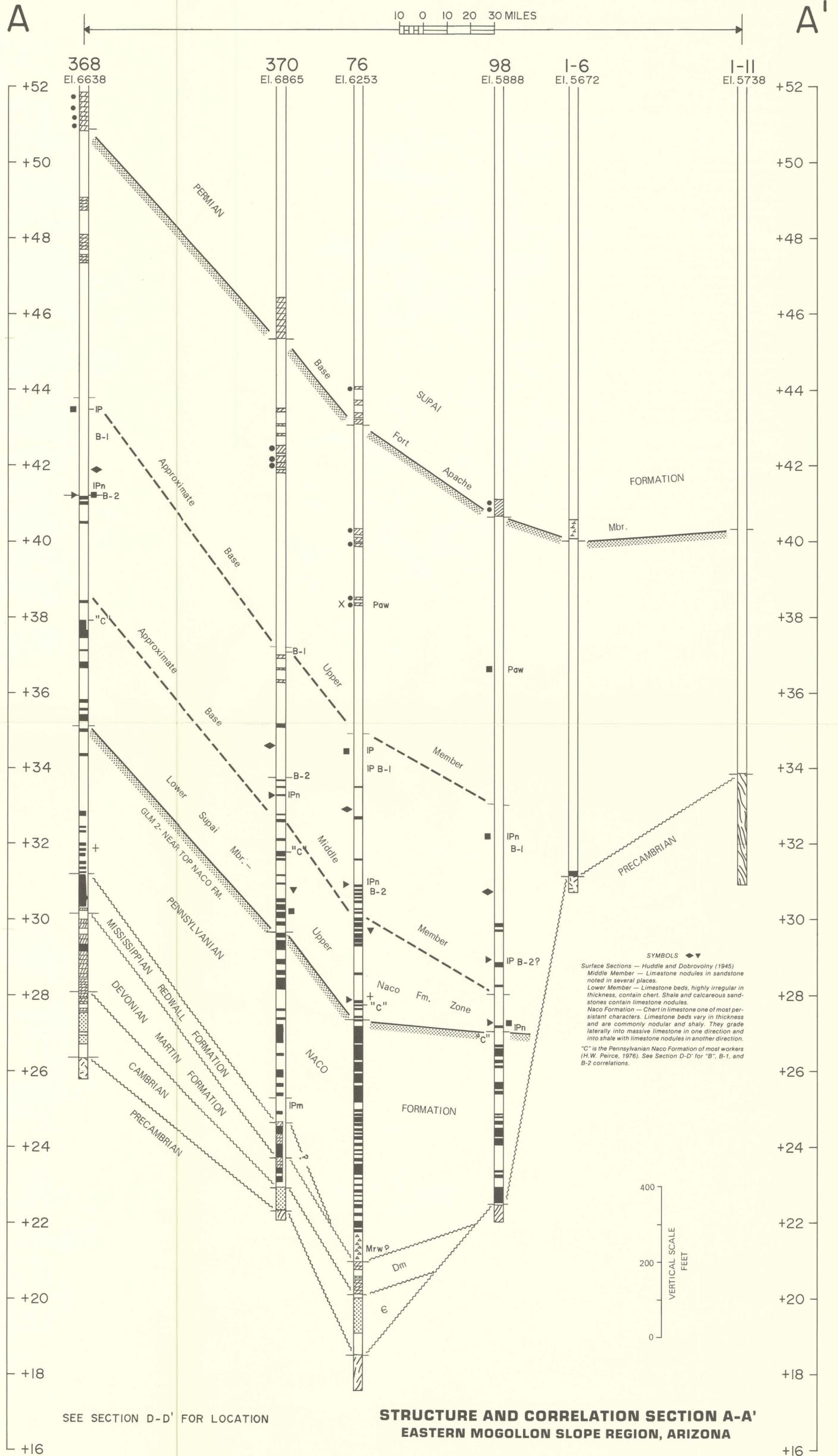
- Limestone or predominantly limestone
- Dolomite
- Clastics or predominantly clastics
- Limestone, dolomite, and clastics
- Limestone and clastics
- Dolomite and siltstone
- Dolomitic clastics
- Sandstone (pre-Penn)
- "Granite wash" or arkose
- Granitic basement rock - Precambrian
- Metamorphic basement rock - Precambrian

MISCELLANEOUS

- Limestone nodules; highest occurrence noted
- Chert in limestone nodules; highest occurrence noted
- Oil show; stain, variable quality
- Oil show; cored
- Virgilian fusulinids
- Desmoinesian fusulinids

STRATIGRAPHIC DATA - SOURCE

- Operator
- American Stratigraphic Co.
- H. W. PEIRCE (1972)
- H. W. PEIRCE (1976)
- J. N. Conley; tentative correlations based primarily on geophysical log data



SYMBOLS
Surface Sections — Huddle and Dobrovolsky (1945)
Middle Member — Limestone nodules in sandstone noted in several places.
Lower Member — Limestone beds, highly irregular in thickness, contain chert. Shale and calcareous sandstones contain limestone nodules.
Naco Formation — Chert in limestone one of most persistent characters. Limestone beds vary in thickness and are commonly nodular and shaly. They grade laterally into massive limestone in one direction and into shale with limestone nodules in another direction.
"C" is the Pennsylvanian Naco Formation of most workers (H.W. Peirce, 1976). See Section D-D' for "B", B-1, and B-2 correlations.

400
200
0
VERTICAL SCALE
FEET