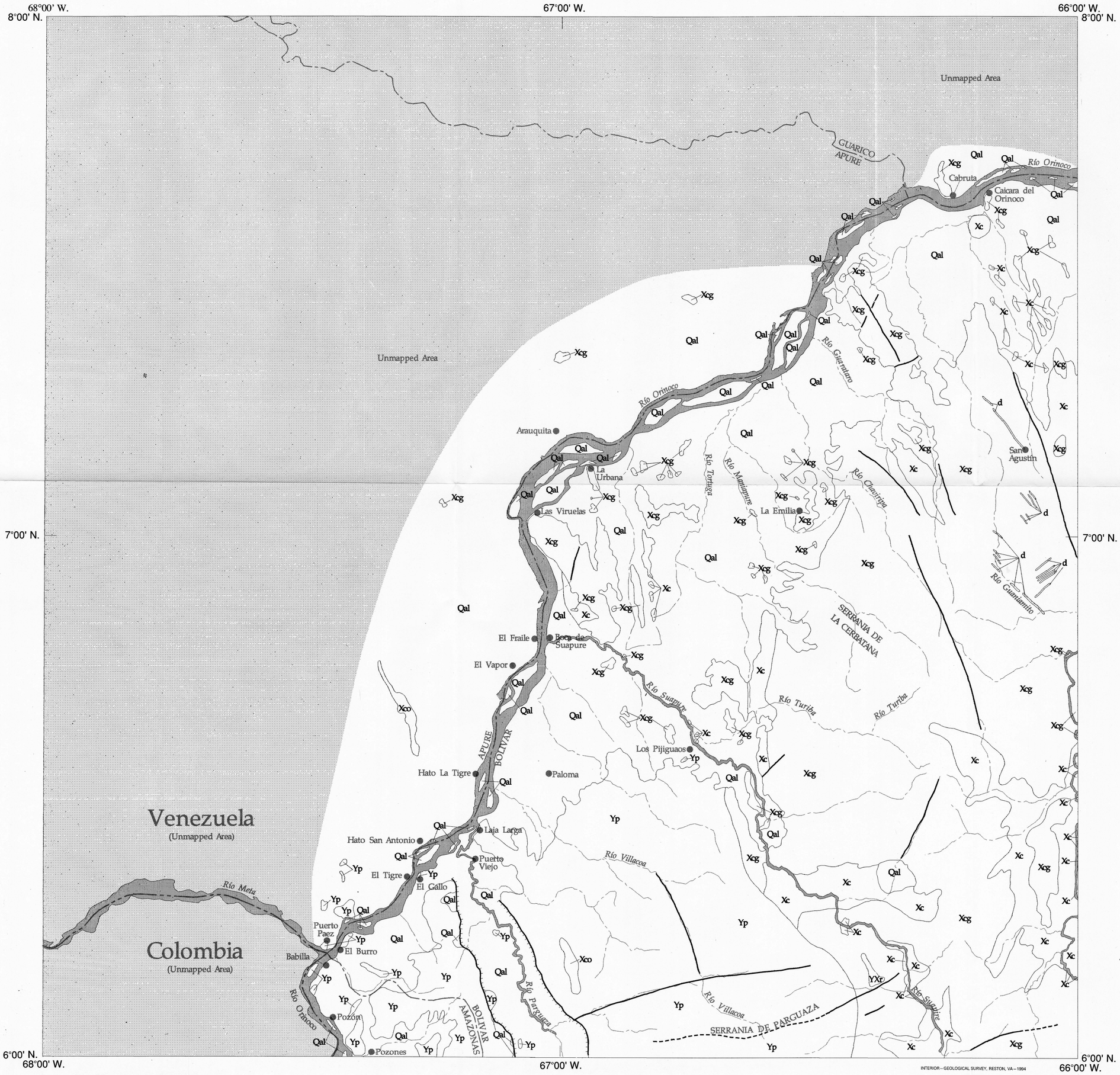
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with the
CORPORACIÓN VENEZOLANA DE GUAYANA, TÉCNICA MINERA, C.A.

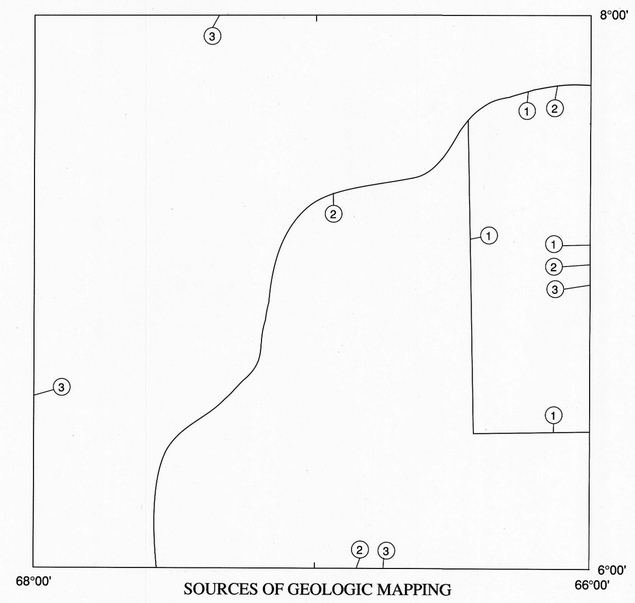
MISCELLANEOUS FIELD STUDIES
MAP MF–2247



Base from C.V.G., Técnica Minera, C.A., Map no. NB 20–1, 1990
Equidistant Conic Projection based on standard parallels 4° N. and 9° N. and central meridian 66° W.

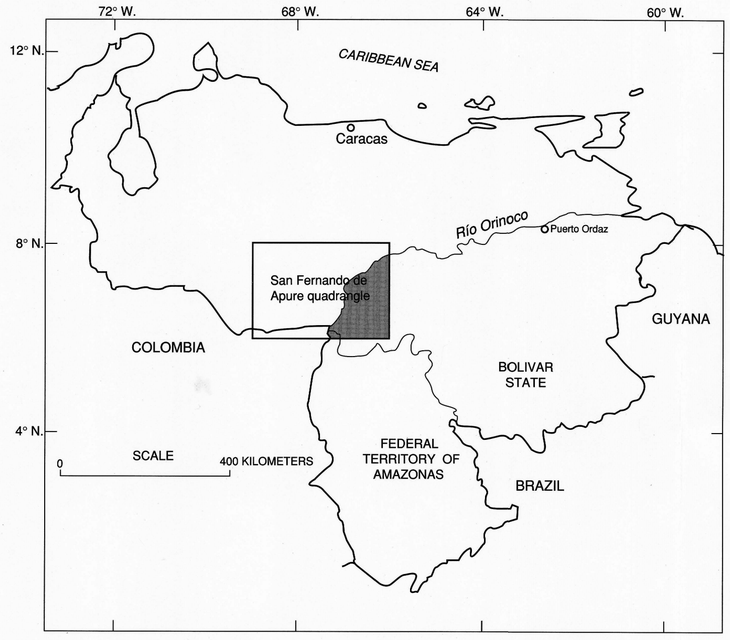
SCALE 1:500 000

10 0 10 20 30 40 50 MILES
10 0 10 20 30 40 50 60 70 KILOMETERS



SOURCES OF GEOLOGIC MAPPING

1 Rios (1972)
2 McCandless (1965)
3 Bellizzia and others (1976)



Index map showing location of study area. Shaded area is area shown on geologic map

CORRELATION OF MAP UNITS

Qal	Quaternary		Cenozoic
Unconformity			
YXr	Granitic rocks	Yp	Mesozoic
Unnamed orogeny	d*		Middle Proterozoic
Xc		Xcg	Early Proterozoic
Xco			

* See description of map units for exact age

DESCRIPTION OF MAP UNITS

Qal **Alluvial deposits (Quaternary)**--Sand, silt, clay, and gravel

d **Diabase (Mesozoic or Early Proterozoic)**--Dark-gray to greenish-gray, fine- to coarse-grained, tholeiitic, some disseminated pyrite. Occurs as dikes, sills, and laccoliths. On the basis of isotopic dating throughout the Guayana Shield, includes diabase of about 1,650 Ma, and possibly as old as 1,850 Ma, as well as diabase about 210 to 200 Ma (Sidder and Mendoza, 1991)

YXr **Roraima Group (Middle and Early Proterozoic)**--Quartz arenite, arkose, silty arenite, conglomeratic arenite, conglomerate, siltstone, and shale; cross-stratified, laminated, or massive. Forms small outcrop in southwestern part of quadrangle. On the basis of isotopic dating in the Guayana Shield, some strata are at least 1,650 Ma, but the possible age of the entire group ranges from 1,900 to 1,545 Ma (Sidder and Mendoza)

Xc **Volcanic rocks of the Cuchivero Group (Caicara Formation) (Early Proterozoic)**--Rhyodacitic to rhyolitic tuff, some crystal- and lithic-rich parts; rhyodacite porphyry; andesite and basalt lava flows, commonly hydrothermally altered; rhyodacite granophyre; local mylonite. Only slightly metamorphosed. About 1,980 to 1,790 Ma (Sidder and Mendoza, 1991)

Xco **Cinaruco Formation (Early Proterozoic)**--Quartzite and sericitic quartzite and minor amounts of sericite-quartz schist and phyllite, ferruginous quartzite, and one or more intra-formational quartzite conglomerate (McCandless, 1962)

GRANITIC ROCKS

Yp **Parguaza Granite (Middle Proterozoic)**--Massive, coarsely crystalline, porphyritic granite and biotite granite commonly with rapakivi texture (about 1,545 Ma, Gaudette and others, 1978). The Parguaza Granite is reported by Mendoza and others (1977) and Ghosh (1985) to be unconformably overlain by the Roraima Group, although isotopic dates on the Parguaza Granite (about 1,545 Ma) are within the possible age span of the Roraima Group (1,900 to 1,545 Ma) (Ghosh, 1985; Sidder and Mendoza, 1991). These age relations can be explained if the Roraima Group varies significantly in age within the Guayana Shield; that is, the Roraima Group may be relatively young (<1,545 Ma) where it reportedly (Mendoza and others, 1977; Ghosh, 1985) rests on the Parguaza Granite but may be older than this in eastern parts of the Guayana Shield

Xcg **Granitic rocks of the Cuchivero Group (Early Proterozoic)**--Hypabyssal biotite granite, quartz monzonite, and granodiorite, equigranular to porphyritic, and medium- to coarse-grained. About 1,980 to 1,790 Ma (Sidder and Mendoza, 1991; Brooks and others, in press)

EXPLANATION OF MAP SYMBOLS

Contact

Fault--Dashed where inferred. Includes lineaments recognized on Side-Looking Airborne Radar

Graben-bounding fault, probably everywhere covered by Quaternary alluvium--Ticks on downthrown side

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INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1994

Manuscript approved for publication October 13, 1994

GEOLOGIC MAP OF PART OF THE SAN FERNANDO DE APURE 2°×3° QUADRANGLE, VENEZUELA

By

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1994

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