

EXPLANATION

CORRELATION OF MAP UNITS

Qal	Holocene to Pleistocene	QUATERNARY	
UNCONFORMITY			
QTg	Pleistocene to Miocene	QUATERNARY AND TERTIARY	
UNCONFORMITY			
Tfb			
Tir			
Tpc ²			
Tpc ¹			
Trdc-a			
Taw			
Taw-a			
Talp ⁴			
Talp-a			
Talp-3A			
Talp ²			
Talp ¹			
Thm ²			
Thm ¹			
Tsp-a ²			
Tsp-a ¹			
Tsp-a ⁰			
UNCONFORMITY			
Tb			
UNCONFORMITY			
M			
UNCONFORMITY			
P			
UNCONFORMITY			
pC			

DESCRIPTION OF MAP UNITS

Qal	ALLUVIUM (Quaternary). Chiefly unconsolidated gravel, sand, and soil
QTg	GRAVELS (Quaternary, Tertiary) undivided. Includes Santa Fe Group, fanglomerates, pediment, and terrace gravels
Tfb	FAULT BRECCIA (late Tertiary). Angular fragments of Precambrian quartzite cemented by a hematite matrix
Tir	INTRUSIVE RHYOLITE (late Tertiary). Light-purple, white, and pink rhyolites. Locally flow-banded
Tpc ²	FORMATION OF POTATO CANYON (Oligocene)
Tpc ¹	Upper member. Rhyolite ash-flow tuff, light-gray, moderately welded, crystal-poor at base grading to crystal-rich. Contains sandstone and quartz
Tpc ¹	Lower member. Rhyolite ash-flow tuff, light-purple, densely welded, crystal-poor
Trdc-a	BASALTIC ANDESITE OF ROSA DE CASTILLO (Oligocene). Medium-gray, aphanitic; contains iddingsite. Auto-brecciated zones at base and top
Taw	TUFF OF ALLEN WELL (Oligocene). Rhyolite ash-flow tuff, pink, densely welded. Contains sandstone, plagioclase, and quartz; crystal rich
Taw-a	BASALTIC ANDESITE (Oligocene). Medium-gray, aphanitic; contains iddingsite
Talp ⁴	FORMATION OF A-L PEAK (Oligocene)
Talp ⁴	Member 4. Rhyolite ash-flow tuff, bluish-gray, moderately welded, crystal-poor
Talp-a	Basaltic andesite member. Light-gray, aphanitic. Contains pyroxene and iddingsite. Auto-brecciated zones at base and top
Talp-a ¹	Air-fall tuff member. Beige, slightly welded, laminated, pumiceous
Talp ³	Member 3. Rhyolite ash-flow tuff, brownish-gray, moderately welded, crystal-poor. Contains stretched pumice
Talp-3A	Member 3A. Rhyolite ash-flow tuff, light purple, densely welded, crystal-poor. Contains laminar flow structure
Talp ²	Member 2. Rhyolite ash-flow tuff, light-gray, moderately welded, crystal-poor
Talp ¹	Member 1. Rhyolite ash-flow tuff, light-salmon-pink, moderately welded, crystal-poor, lithic
Thm ²	BASALTIC ANDESITE (Oligocene). Medium-gray, aphanitic; contains iddingsite. Local exposure
Thm ²	HELLS MESA FORMATION (Oligocene)
Thm ¹	Upper member. Rhyolite ash-flow tuff, light-gray, densely welded, crystal-rich. Contains quartz, sandstone, and plagioclase
Thm ¹	Lower member. Rhyolite ash-flow tuff, brownish-pink, densely welded, crystal-rich. Contains sandstone, plagioclase, and quartz
Tsp-a ²	SPEARS FORMATION (Oligocene to Eocene?)
Tsp-a ¹	Upper member
Tsp-a ⁰	Intrusive dikes. Aphanitic andesite, light-green. Average width 12 feet.
Tsp-a ⁰	Conglomerate unit. Cobble to boulder, of andesitic composition. Cemented by a red hematitic clay matrix
Tsp-a ⁰	Upper basaltic andesite unit. Medium-gray, aphanitic; contains iddingsite. Broad exposure
Tsp-a ⁰	Upper tuff unit. Latite ash-flow tuff, pink, moderately welded, moderately crystal rich, lithic
Tsp-a ⁰	Lower member
Tsp-a ⁰	Lower basaltic andesite unit. Medium-gray, porphyritic; contains pyroxene and plagioclase
Tsp-a ⁰	Lower tuff unit. Latite ash-flow tuff, light-brown, moderately welded, moderately crystal rich. Contains hornblende laths
Tsp-a ⁰	Volcaniclastic unit. Approximately 2100 feet of water-laid volcaniclastic sediments, mudflow breccias, and lithic breccias
Tb	BACA FORMATION (Eocene). Light-red coarse sand to conglomerate arkose, poorly sorted
M	SEDIMENTARY ROCKS UNDIVIDED (Mesozoic). Includes Dakota, Mancos, and Mesaverde Formations (Cretaceous)
P	SEDIMENTARY ROCKS UNDIVIDED (Paleozoic). Includes Magdalena Group (Pennsylvanian), Abo, Yeso, Glorieta, and San Andres Formations (Permian)
pC	PRECAMBRIAN ROCKS UNDIVIDED

SYMBOLS

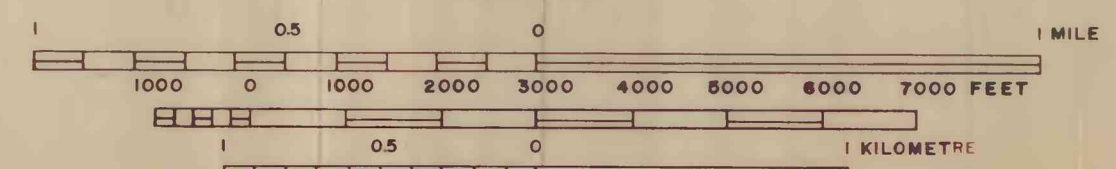
	Contact. Dashed where inferred
	Fault. Dashed where inferred or covered; bar and ball on downthrown side; arrow indicates direction of dip
	Structural zone. Area of folded and distorted rocks
	Strike and dip of bedding
	Strike and dip of foliation
	Trend of amygdale and pumice lineations

GEOLOGIC MAP AND SECTIONS OF THE

JOYITA HILLS AREA, SOCORRO COUNTY, NEW MEXICO
(WITH EMPHASIS ON TERTIARY VOLCANIC ROCKS)

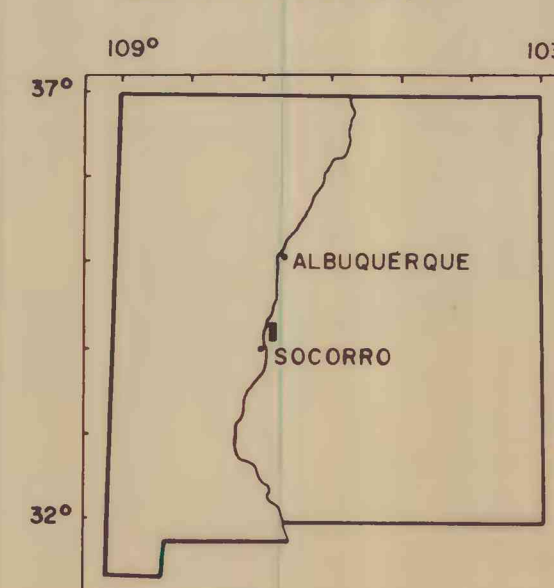
BY ERNEST J. SPRADLIN, 1975

SCALE
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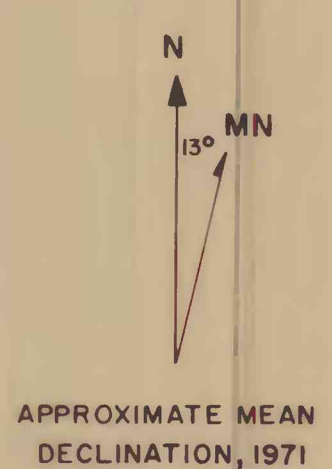


CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

LOCATION MAP



U.S. Geological Survey
OPEN FILE REPORT
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.



APPROXIMATE MEAN DECLINATION, 1971

Identification of Mesozoic and Paleozoic rocks from Wilgoff and others (1946, 1951)

