

INTRODUCTION
The U.S. Geological Survey and the U.S. Bureau of Mines conducted field investigations to evaluate the mineral resources of the Manzano Wilderness, Torrance and Valencia Counties, N. Mex., during 1980 and 1982. This map complements the mineral resource appraisal of the Manzano Wilderness (Maxwell and others, 1983). Field studies by the Bureau of Mines included a reconnaissance of mines, prospects, and mineralized areas. From workings within and near the wilderness, 107 samples were taken and analyzed.
The wilderness, 20-35 mi southeast of Albuquerque, N. Mex., consists of 37,000 acres in the Cibola National Forest (see index map). Most of the wilderness is the steep west-facing slope of the Manzano Mountains from Mica Peak to the north to Hanson Peak on the south. Notices of the mining claim locations were examined in the Torrance County Courthouse in Batavia, N. Mex., and in the Valencia County Courthouse in Los Lunas, N. Mex. All claims which could be accurately plotted in and around the Manzano Wilderness are shown on this map. Many additional claims in the vicinity could not be plotted because of vague descriptions of location. Surface and underground workings in and around the Manzano Wilderness were examined and described. These workings are listed in table 1. A total of 107 samples taken, including pit, grab, select, outcrop, stream-sediment, and stream panned-concentrate samples. Table 2 shows assay results for samples containing more than 0.005 oz gold per ton, 0.1 oz silver per ton, or 0.10 percent copper, lead, or zinc. Detailed sample descriptions and assay data for samples not listed in table 2 are available from the U.S. Bureau of Mines, Intermountain Field Operations Center, Denver, CO 80225.

The periphery of the Manzano Wilderness contains small deposits of gold, silver, and copper. Several properties in and around the southern half of the wilderness have been prospecting approximately a century. Prices have fluctuated. From 1915 to 1919, about 8,500 tons of silver were produced from the area. In 1920, 6,700 oz of silver was mined from the Fernán Abo Formation south of the wilderness near Scholle, N. Mex. (Lasker, 1932). Workings in and around the wilderness occur in the Bartolo Canyon area, the Cañon de Salas area, the Cañon Monte de Abajo area, and the Priest Canyon area.

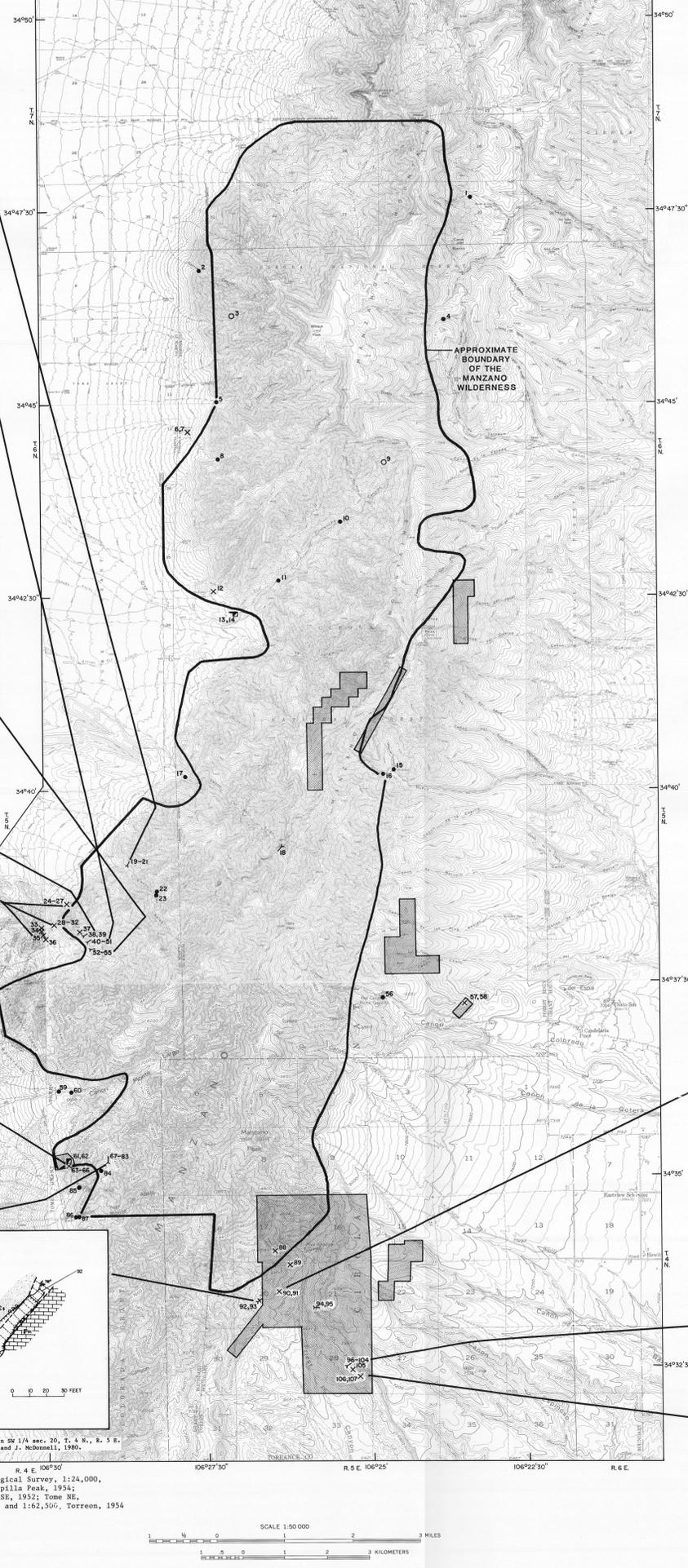
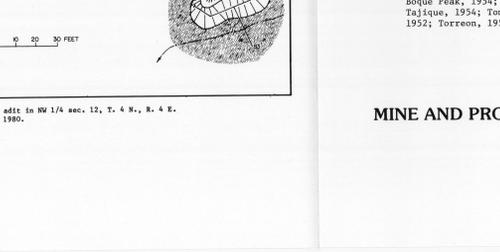
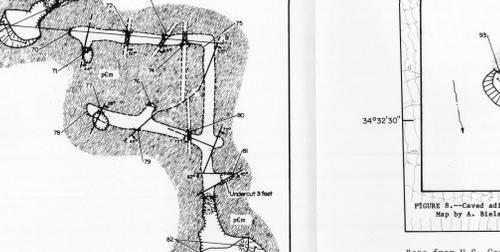
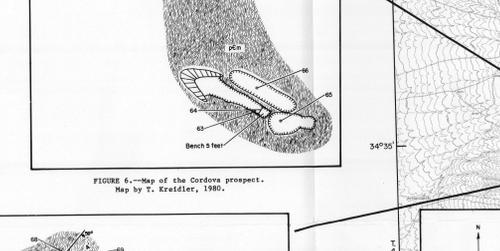
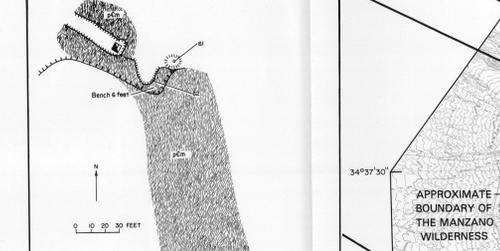
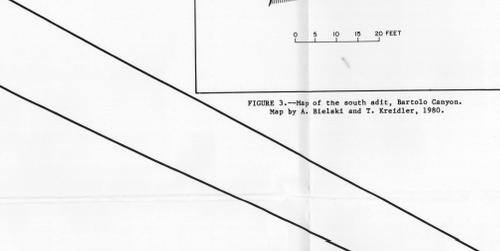
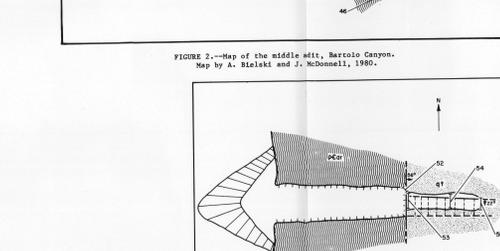
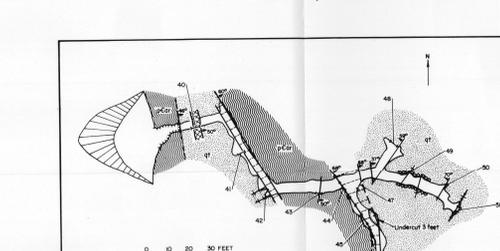
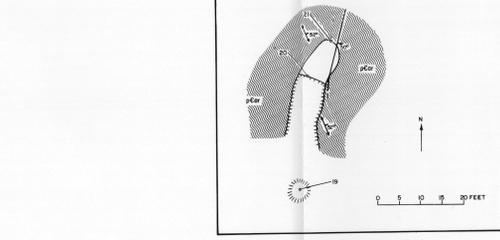
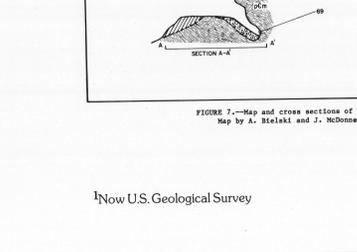
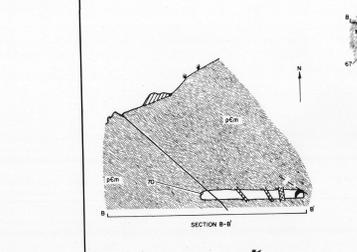
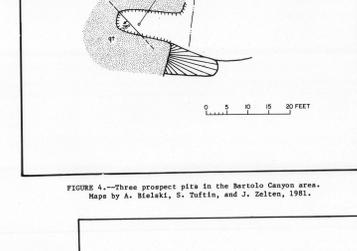
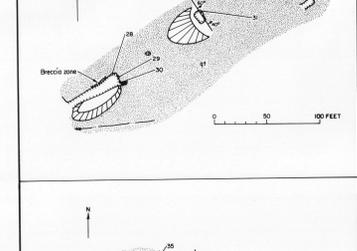
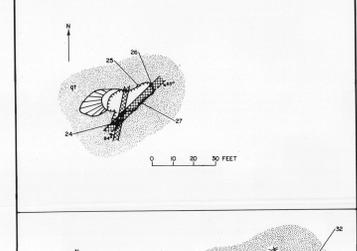
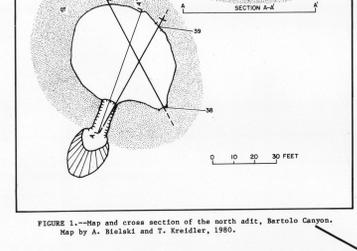
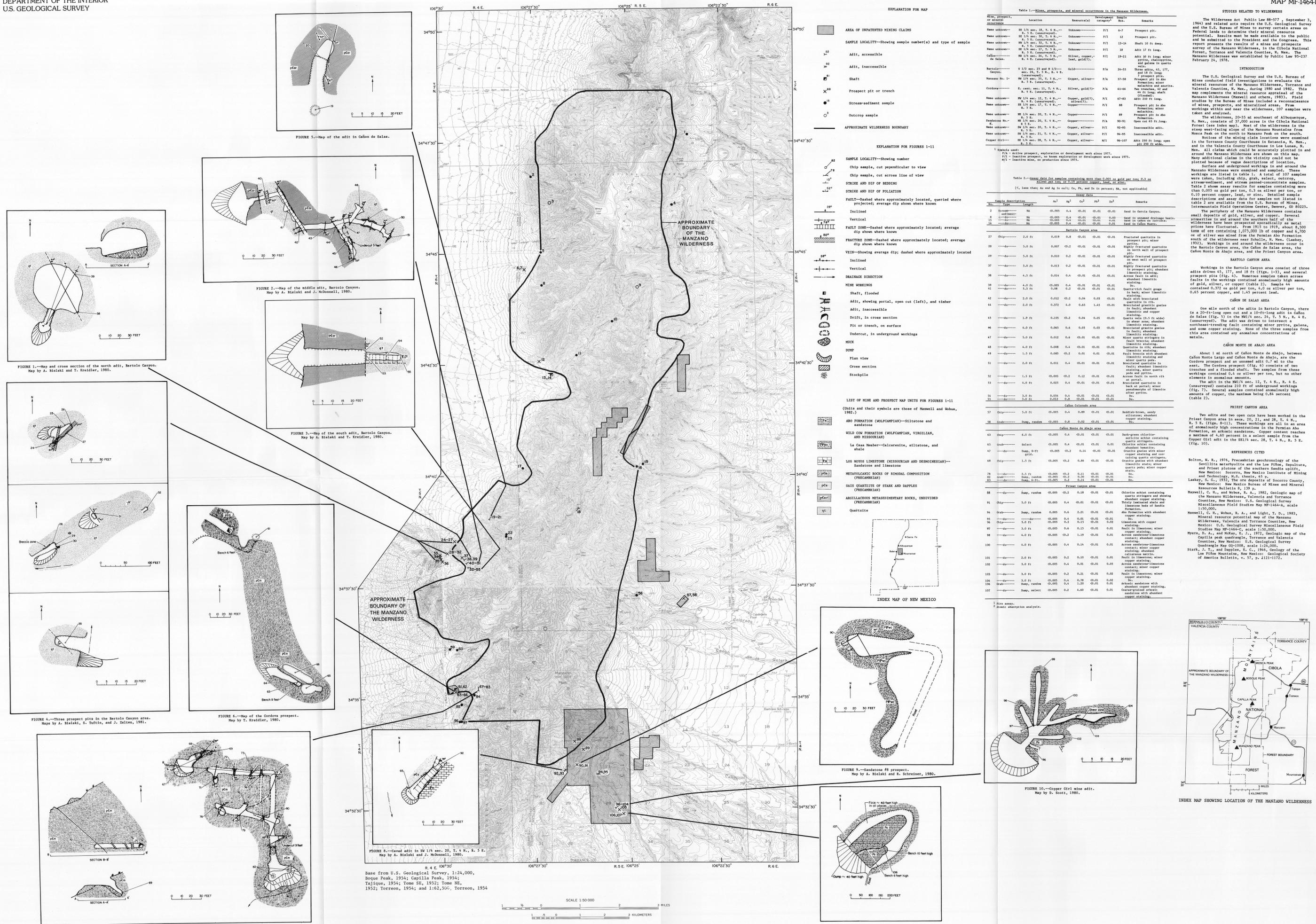
BARTOLO CANYON AREA
Workings in the Bartolo Canyon area consist of three adits driven 45, 177, and 18 ft (figs. 1-3), and several prospect pits (fig. 4). Numerous samples taken across the fault in the workings contained anomalously high amounts of gold, silver, or copper (table 2). Samples from this area contained 0.372 oz gold per ton, 4.0 oz silver per ton, 0.65 percent copper, and 1.45 percent lead.

CAÑON DE SALAS AREA
One mile north of the adits in Bartolo Canyon, there is a 10-ft-long open cut and a 10-ft-long adit in Cañon de Salas (fig. 5) in the NW 1/4 sec. 24, T. 5 N., R. 4 E. (unsurveyed). The adit was driven to test a northeast-trending fault containing minor pyrite, galena, and some copper staining. None of the three samples from this area contained any anomalous concentrations of metals.

CAÑON MONTE DE ABAJO AREA
About 1 mi north of Cañon Monte de Abajo, between Cañon Monte Largo and Cañon Monte de Abajo, are the Cordova prospect and an unnamed adit 0.7 mi to the east. The Cordova prospect (fig. 6) consists of two trenches and a flooded shaft. Two samples from these workings contained 0.4 oz silver per ton, but no other elements in anomalous amounts.

PIRIST CANYON AREA
Two adits and two open cuts have been worked in the Priest Canyon area (see figs. 7, 8, and 9). These workings are all in an area of anomalously high concentrations of silver, copper, and lead. The maximum silver concentration in the area is 0.45 percent in a sample from the Copper Girl adit in the SW 1/4 sec. 28, T. 4 N., R. 5 E. (fig. 10).

REFERENCES CITED
Bolton, W. R., 1978, Precambrian geochronology of the San Juan Mountains and the Los Peñasquitos, Torrance and Valencia Counties, New Mexico. U.S. Geological Survey Miscellaneous Field Studies Map MF-1464-A, scale 1:50,000.
Maxwell, C. H., and Wobus, R. A., 1982, Geologic map of the Manzano Wilderness, Valencia and Torrance Counties, New Mexico. U.S. Geological Survey Miscellaneous Field Studies Map MF-1464-A, scale 1:50,000.
Maxwell, C. H., Wobus, R. A., and Light, T. D., 1983, Mineral resource potential map of the Manzano Wilderness, Valencia and Torrance Counties, New Mexico. U.S. Geological Survey Miscellaneous Field Studies Map MF-1464-C, scale 1:50,000.
Myers, D. A., and McKelvey, E. J., 1977, Geologic map of the Capilla Peak quadrangle, Torrance and Valencia Counties, New Mexico. U.S. Geological Survey Quadrangle Map 00-1008, scale 1:24,000.
Stark, J. T., and Doolittle, R. C., 1946, Geology of the Los Peñasquitos, New Mexico. Geological Society of America Bulletin, v. 57, p. 1211-1272.



EXPLANATION FOR MAP

- AREA OF UNPATENTED MINING CLAIMS
- SAMPLE LOCALITY—Showing sample number(s) and type of sample
- Adit, accessible
- Adit, inaccessible
- Shaft
- Prospect pit or trench
- Stream-sediment sample
- Outcrop sample
- APPROXIMATE WILDERNESS BOUNDARY

EXPLANATION FOR FIGURES 1-11

- SAMPLE LOCALITY—Showing number
- Chip sample, cut perpendicular to view
- Chip sample, cut across line of view
- STRIKE AND DIP OF BEDDING
- STRIKE AND DIP OF FOLIATION
- FAULT—Dashed where approximately located, queried where projected; average dip shown where known
- FAULT ZONE—Dashed where approximately located; average dip shown where known
- FRACTURE ZONE—Dashed where approximately located; average dip shown where known
- VEIN—Showing average dip; dashed where approximately located
- DRAINAGE DIRECTION
- MINING WORKINGS
- Shaft, flooded
- Adit, showing portal, open cut (left), and timber
- Adit, inaccessible
- Drift, in cross section
- Pit or trench, on surface
- Undercut, in underground workings
- MOCK
- DUMP
- Plan view
- Cross section
- Stockpile

LIST OF MINE AND PROSPECT MAP UNITS FOR FIGURES 1-11
(Data and their symbols are those of Maxwell and Wobus, 1982.)

ABO FORMATION (MOLPUCAMPAN)—Siltstone and sandstone

WILD COW FORMATION (MOLPUCAMPAN, VIRGILIAN, AND MISSOURIAN)

La Casa Member—Calcareous siltstone, and shale

LOS NOYOS LIMESTONE (MISSOURIAN AND DESMOINESIAN)—Sandstone and limestone

METAMORPHIC ROCKS OF UNKNOWN COMPOSITION (PRECAMBRIAN)

SALS (QUARTZITE OF STARK AND DARPLES (PRECAMBRIAN))

ARGILLACEOUS METASEDIMENTARY ROCKS, UNDIVIDED (PRECAMBRIAN)

Quartzite

Table 1.—Mines, prospects, and mineral occurrences in the Manzano Wilderness.

Mine, prospect, or occurrence	Location	Resource(s)	Category	Sample No.	Remarks
None known	SE 1/4 sec. 18, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	6-7	Prospect pit.
None known	SE 1/4 sec. 20, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	12	Prospect pit.
None known	SE 1/4 sec. 21, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	13-14	Prospect pit.
None known	SE 1/4 sec. 22, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	15	Prospect pit.
None known	SE 1/4 sec. 23, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	16	Prospect pit.
None known	SE 1/4 sec. 24, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	17	Prospect pit.
None known	SE 1/4 sec. 25, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	18	Prospect pit.
None known	SE 1/4 sec. 26, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	19	Prospect pit.
None known	SE 1/4 sec. 27, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	20	Prospect pit.
None known	SE 1/4 sec. 28, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	21	Prospect pit.
None known	SE 1/4 sec. 29, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	22	Prospect pit.
None known	SE 1/4 sec. 30, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	23	Prospect pit.
None known	SE 1/4 sec. 31, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	24	Prospect pit.
None known	SE 1/4 sec. 32, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	25	Prospect pit.
None known	SE 1/4 sec. 33, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	26	Prospect pit.
None known	SE 1/4 sec. 34, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	27	Prospect pit.
None known	SE 1/4 sec. 35, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	28	Prospect pit.
None known	SE 1/4 sec. 36, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	29	Prospect pit.
None known	SE 1/4 sec. 37, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	30	Prospect pit.
None known	SE 1/4 sec. 38, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	31	Prospect pit.
None known	SE 1/4 sec. 39, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	32	Prospect pit.
None known	SE 1/4 sec. 40, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	33	Prospect pit.
None known	SE 1/4 sec. 41, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	34	Prospect pit.
None known	SE 1/4 sec. 42, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	35	Prospect pit.
None known	SE 1/4 sec. 43, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	36	Prospect pit.
None known	SE 1/4 sec. 44, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	37	Prospect pit.
None known	SE 1/4 sec. 45, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	38	Prospect pit.
None known	SE 1/4 sec. 46, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	39	Prospect pit.
None known	SE 1/4 sec. 47, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	40	Prospect pit.
None known	SE 1/4 sec. 48, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	41	Prospect pit.
None known	SE 1/4 sec. 49, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	42	Prospect pit.
None known	SE 1/4 sec. 50, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	43	Prospect pit.
None known	SE 1/4 sec. 51, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	44	Prospect pit.
None known	SE 1/4 sec. 52, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	45	Prospect pit.
None known	SE 1/4 sec. 53, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	46	Prospect pit.
None known	SE 1/4 sec. 54, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	47	Prospect pit.
None known	SE 1/4 sec. 55, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	48	Prospect pit.
None known	SE 1/4 sec. 56, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	49	Prospect pit.
None known	SE 1/4 sec. 57, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	50	Prospect pit.
None known	SE 1/4 sec. 58, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	51	Prospect pit.
None known	SE 1/4 sec. 59, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	52	Prospect pit.
None known	SE 1/4 sec. 60, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	53	Prospect pit.
None known	SE 1/4 sec. 61, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	54	Prospect pit.
None known	SE 1/4 sec. 62, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	55	Prospect pit.
None known	SE 1/4 sec. 63, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	56	Prospect pit.
None known	SE 1/4 sec. 64, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	57	Prospect pit.
None known	SE 1/4 sec. 65, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	58	Prospect pit.
None known	SE 1/4 sec. 66, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	59	Prospect pit.
None known	SE 1/4 sec. 67, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	60	Prospect pit.
None known	SE 1/4 sec. 68, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	61	Prospect pit.
None known	SE 1/4 sec. 69, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	62	Prospect pit.
None known	SE 1/4 sec. 70, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	63	Prospect pit.
None known	SE 1/4 sec. 71, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	64	Prospect pit.
None known	SE 1/4 sec. 72, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	65	Prospect pit.
None known	SE 1/4 sec. 73, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	66	Prospect pit.
None known	SE 1/4 sec. 74, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	67	Prospect pit.
None known	SE 1/4 sec. 75, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	68	Prospect pit.
None known	SE 1/4 sec. 76, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	69	Prospect pit.
None known	SE 1/4 sec. 77, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	70	Prospect pit.
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None known	SE 1/4 sec. 83, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	76	Prospect pit.
None known	SE 1/4 sec. 84, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	77	Prospect pit.
None known	SE 1/4 sec. 85, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	78	Prospect pit.
None known	SE 1/4 sec. 86, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	79	Prospect pit.
None known	SE 1/4 sec. 87, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	80	Prospect pit.
None known	SE 1/4 sec. 88, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	81	Prospect pit.
None known	SE 1/4 sec. 89, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	82	Prospect pit.
None known	SE 1/4 sec. 90, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	83	Prospect pit.
None known	SE 1/4 sec. 91, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	84	Prospect pit.
None known	SE 1/4 sec. 92, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	85	Prospect pit.
None known	SE 1/4 sec. 93, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	86	Prospect pit.
None known	SE 1/4 sec. 94, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	87	Prospect pit.
None known	SE 1/4 sec. 95, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	88	Prospect pit.
None known	SE 1/4 sec. 96, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	89	Prospect pit.
None known	SE 1/4 sec. 97, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	90	Prospect pit.
None known	SE 1/4 sec. 98, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	91	Prospect pit.
None known	SE 1/4 sec. 99, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	92	Prospect pit.
None known	SE 1/4 sec. 100, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	93	Prospect pit.
None known	SE 1/4 sec. 101, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	94	Prospect pit.
None known	SE 1/4 sec. 102, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	95	Prospect pit.
None known	SE 1/4 sec. 103, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	96	Prospect pit.
None known	SE 1/4 sec. 104, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	97	Prospect pit.
None known	SE 1/4 sec. 105, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	98	Prospect pit.
None known	SE 1/4 sec. 106, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	99	Prospect pit.
None known	SE 1/4 sec. 107, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	100	Prospect pit.
None known	SE 1/4 sec. 108, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	101	Prospect pit.
None known	SE 1/4 sec. 109, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	102	Prospect pit.
None known	SE 1/4 sec. 110, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	103	Prospect pit.
None known	SE 1/4 sec. 111, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	104	Prospect pit.
None known	SE 1/4 sec. 112, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	105	Prospect pit.
None known	SE 1/4 sec. 113, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	106	Prospect pit.
None known	SE 1/4 sec. 114, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	107	Prospect pit.
None known	SE 1/4 sec. 115, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	108	Prospect pit.
None known	SE 1/4 sec. 116, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	109	Prospect pit.
None known	SE 1/4 sec. 117, T. 4 N., R. 3 E. (unsurveyed)	Unknown	F/1	110	Prospect pit.
None known	SE 1/4 sec. 118, T. 4 N., R. 3 E. (