THE UNIVERSITY OF UTAH

SALT LAKE CITY 84112

UTAH GEOLOGICAL
AND MINERALOGICAL SURVEY
103 UTAH GEOLOGICAL SURVEY BUILDING

January 30, 1973

TO: Dr. W. P. Hewitt, Director
Utah Geol. & Mineralog. Survey

REPORT OF INVESTIGATION

AMATRICE HILL VARISCITE DEPOSIT
Tooele Co., Utah

The arrangements for this visit were made in September, 1972 when Dale James, 204 West 1st North, Tooele, Utah came in to inquire about studies pertaining to variscite. Mr. James is an owner of the Amatrice Hill deposit and was requesting information on development and marketability of his product. I suggested that at a convenient occasion, that I might visit the area and this was arranged for November 16, 1972. The visit was brief, for only two hours, and only a cursory examination of the property was possible, but this was time enough to make some definite observations.

The deposit is located in section 22, T. 4 S., R. 6 W. in Tooele County along the east side of the Stansbury Mountains. Amatrice Hill is an isolated knoll with a diameter of about 1500 feet. The elevation is about 6000 feet and access is provided by a farm road which becomes quite muddy when wet. This road commences two miles to the northeast along a secondary but paved road extending south from Grantsville. Access can also be gained by travelling west from Stockton along a good gravel road to the Grantsville secondary and then using the farm road. Figures 1 and 2 indicate the location.

The rocks are a part of the Oquirrh Formation, in this locality probably of Pennsylvanian age. The hills to the west are also Oquirrh but the small knolls to the east are Mississippian. Generally blue-gray cherty limestones are exposed. The strike is roughly north by northeast and the dip is moderate to steep (20-60°).

The direction of dip is northwest or west.

There are four or five mineralized zones observable, and more may exist. The fractures and bedding planes are limonitized and some beds are argillitized. In some places the limestone is bleached and marbleized. The variscite occurs as replacements of chert which in most places is in nodules or thin beds. Other phosphate minerals are present as well. Smaller nodules are more effectively replaced than larger ones, the greenest variscite being found at the shell of the nodule. There are also siliceous beds that have partly been replaced by variscite, presumably former quartzite beds. Some of the siliceous rocks have not been replaced by the green mineral, but nevertheless provide excellent polishing material, stained to shades of yellow, brown, white, blue, lavender, and gray in interesting and unique mottlings and patterns. In hardness this latter material is superior to the variscite.

The workings consist of several small pits, an area where the soil has been removed to bare the bedrock, and at least two adits. The best shows are on the south end of the hill. Little work has been done to determine the lengths of the mineralized zones, but many hundreds of tons of nodules are in sight and should provide many years of polishing and specimen variscite.

Mr. James provided me with a few specimens, one of which is now in the Utah Survey mineral case in the front office. The deposit yields specimens similar to those formerly found at the Clay Canyon deposit (now mined out). Associated minerals include pseudowavellite, wardite, millisite, and perhaps dennisonite.

Afterwards Mr. James and his colleagues showed me cabachons and book-ends made from the variscite nodules and from the silicified (jaspers?) material found in the vicinity proving that the material polishes to first class semi-precious stones.

H. H. Doelling
Economic Geologist

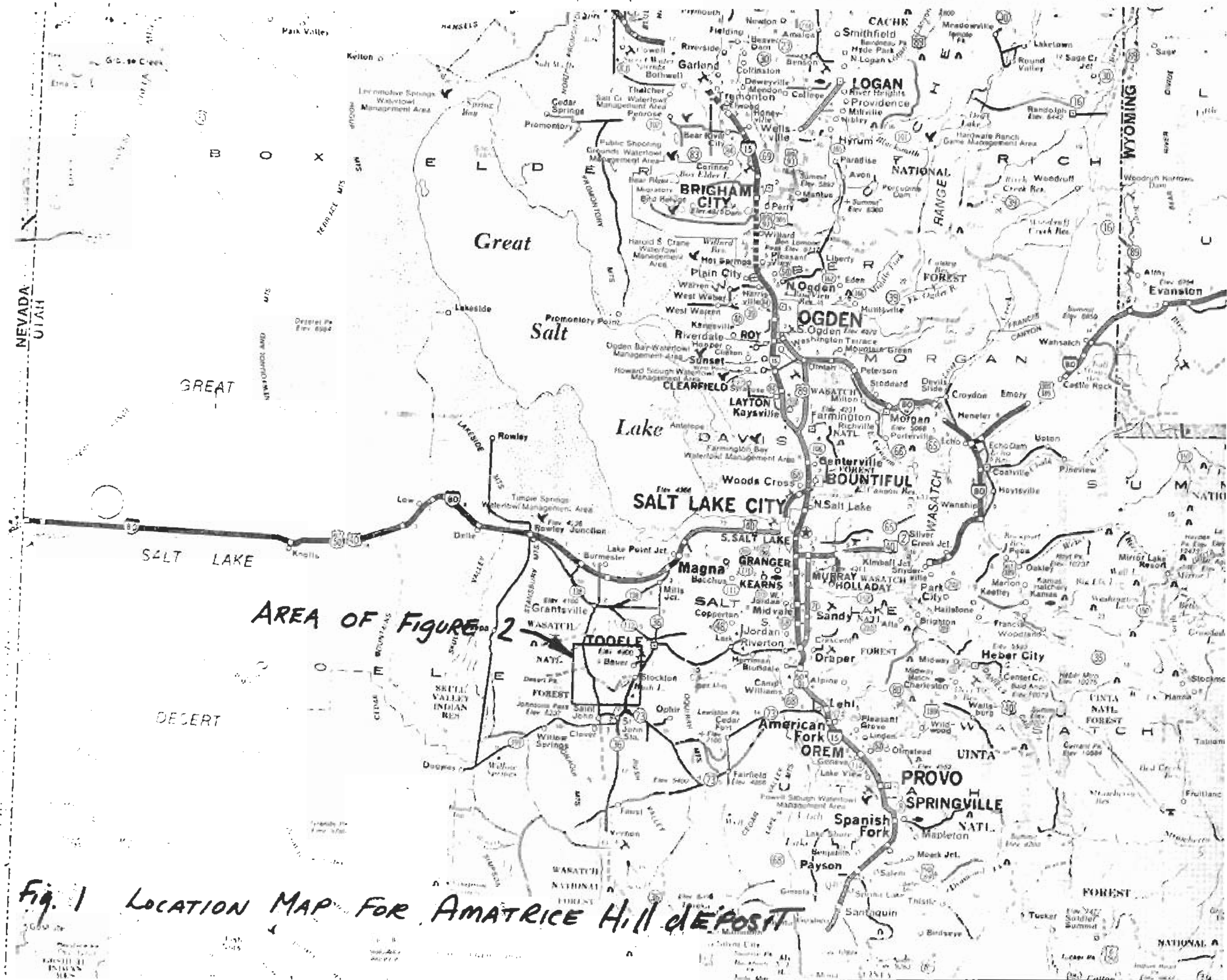

Fig. 1 LOCATION MAP FOR AMATRICE Hill dEPOSIT

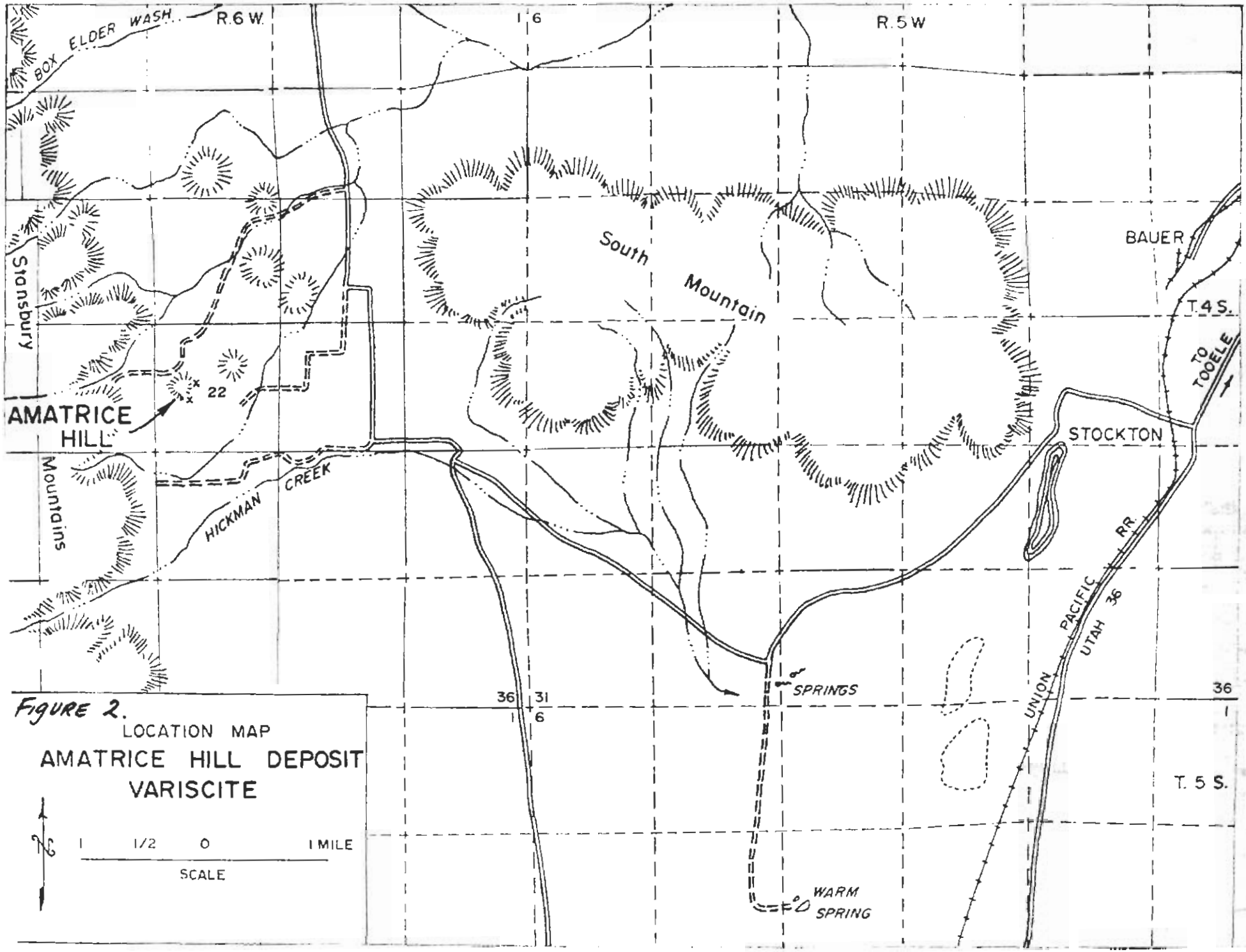

Figure 2.
LOCATION MAP
AMATRICE HILL DEPOSIT
VARISCITE
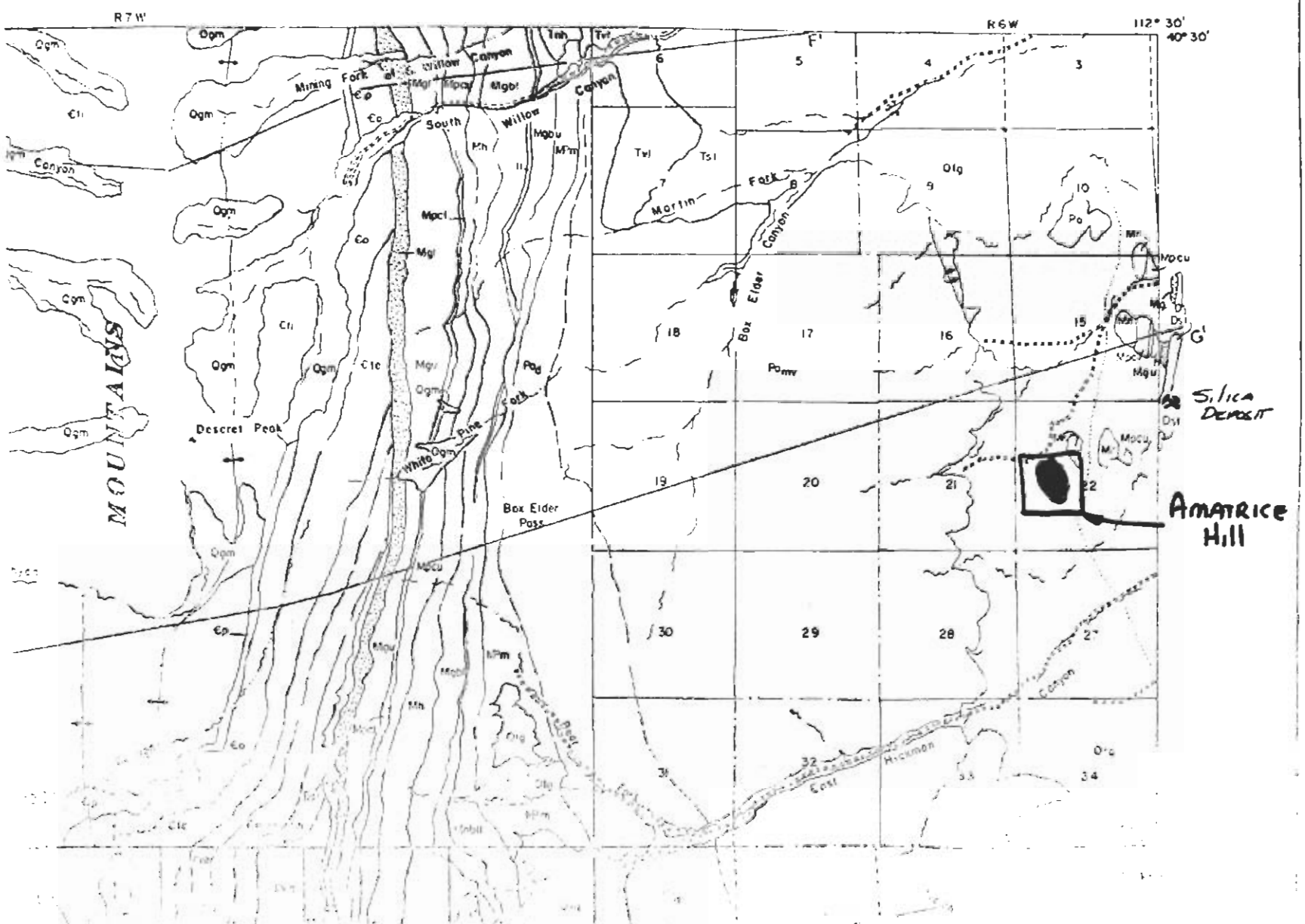
Fig. 3 GEOLOGY IN VICINITY OF AMATRICE HILL