UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

DMA-1557X

Warren Drum Pegmatite, Custer District

Custer County, South Dakota

L. E. Shaffer, Minerals Technologist
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

July 10, 1951

DEFENSE MINERALS ADMINISTRATION
Report of Field Examination

by

L. E. Shaffer, Minerals Technologist
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Docket No.: DMA-1587X
Property: Warren Drew
Applicant: Gladys Wells
Commodity: Beryl, mica

Conclusions and Recommendations

As outlined the project is a development project. Both the drift and the raise would serve only to open the main mass of pegmatite for mining. The Bureau of Mines suggests instead that the deposit be explored by diamond drill holes. This drilling would be in two phases. The first phase, consisting of about 750 feet of drill holes, would show the continuity and composition of the pegmatite at a depth of 100 to 150 feet below the outcrop. If, as a result of this drilling, additional information is needed, the second phase of drilling could be started.

The first part of the program would include three drill holes totaling 750 feet, and would cost about $3,750. The second part, if undertaken, also would consist of three drill holes totaling about 1,050 feet. This drilling would cost about $5,250. The total cost of the project if both phases are undertaken is $9,000.

All drill holes would be Bx (or larger) and would be located by engineers of the Bureau of Mines, who would supervise the project.

Exhibit A

The Warren Draw pegmatite has been examined briefly by the U. S. Geological Survey and a sketch map prepared. Most of the geological data that follow were abstracted from a preliminary report by J. A. Redden of the Geological Survey, who wrote on July 6, 1951: ". . . evidence . . . indicated . . . there is a better chance for exploration work than I had previously thought . . . there is enough evidence to warrant exploration."

The Warren Draw deposit is a large irregular angle-shaped pegmatite. The main body of the pegmatite is about 400 feet by 200 feet; limbs extend for several hundred feet northwest and southeast from the main mass.

At least four zones have been distinguished. These include a border zone of quartz, plagioclase, and muscovite; a wall zone of plagioclase, quartz, perthite, and muscovite; an intermediate zone of quartz and muscovite; and an apparent core of perthite and quartz.

Most of the beryl is found in the wall zone, usually associated with pod-like masses of muscovite. Beryl may amount to 0.2 percent of the zone; muscovite content ranges from 10 to 15 percent. A small amount of beryl also is found in both the intermediate zone and the apparent core, again usually associated with muscovite or quartz. Most of the muscovite in all three zones is suitable only for scrap mica.

Production from the deposit is at least 6,000 tons of feldspar, 100 tons of scrap mica, and 2 or 3 tons of beryl.

The Bureau of Mines suggests that the deposit be explored by drilling about 1,800 feet of Bx (or larger) diamond drill holes. This drilling would be done in two phases; the second phase to be dependent on the results of the first.

The first part of the suggested exploration involves drilling three holes totaling about 750 feet. These holes would be drilled as indicated on the accompanying sketch. Hole 1 should be drilled vertically downward from the floor of an existing open cut to determine the attitude of the deposit. Holes 2 and 3 probably would be drilled on the northeast side of the deposit and inclined to intersect the pegmatite on the dip. Hole locations would be determined by an engineer of the Bureau of Mines, and the project would be under his direction.

This first phase of the drilling should be completed in about 2½ or 3 months from the time the drilling equipment arrives at the property. Drilling could start soon after the project was approved.

If warranted by the results of this first phase, three additional holes totaling 1,050 feet should be drilled. This second phase of the work would require about 3 months to complete.

Tabulating both phases:

Phase 1:

750 feet of diamond drill holes @ $5.00 a foot	$ 3,750

Phase 2:

1,050 feet of diamond drill holes @ $5.00 a foot	$ 5,250
Total	$ 9,000

It is emphasized that the second phase of the project will not be undertaken without the advice and approval of engineers of the Bureau of Mines, after consideration of the results of the drilling in phase one.

Exhibit B

No buildings or structures will be needed for the project as outlined above.

Exhibit C

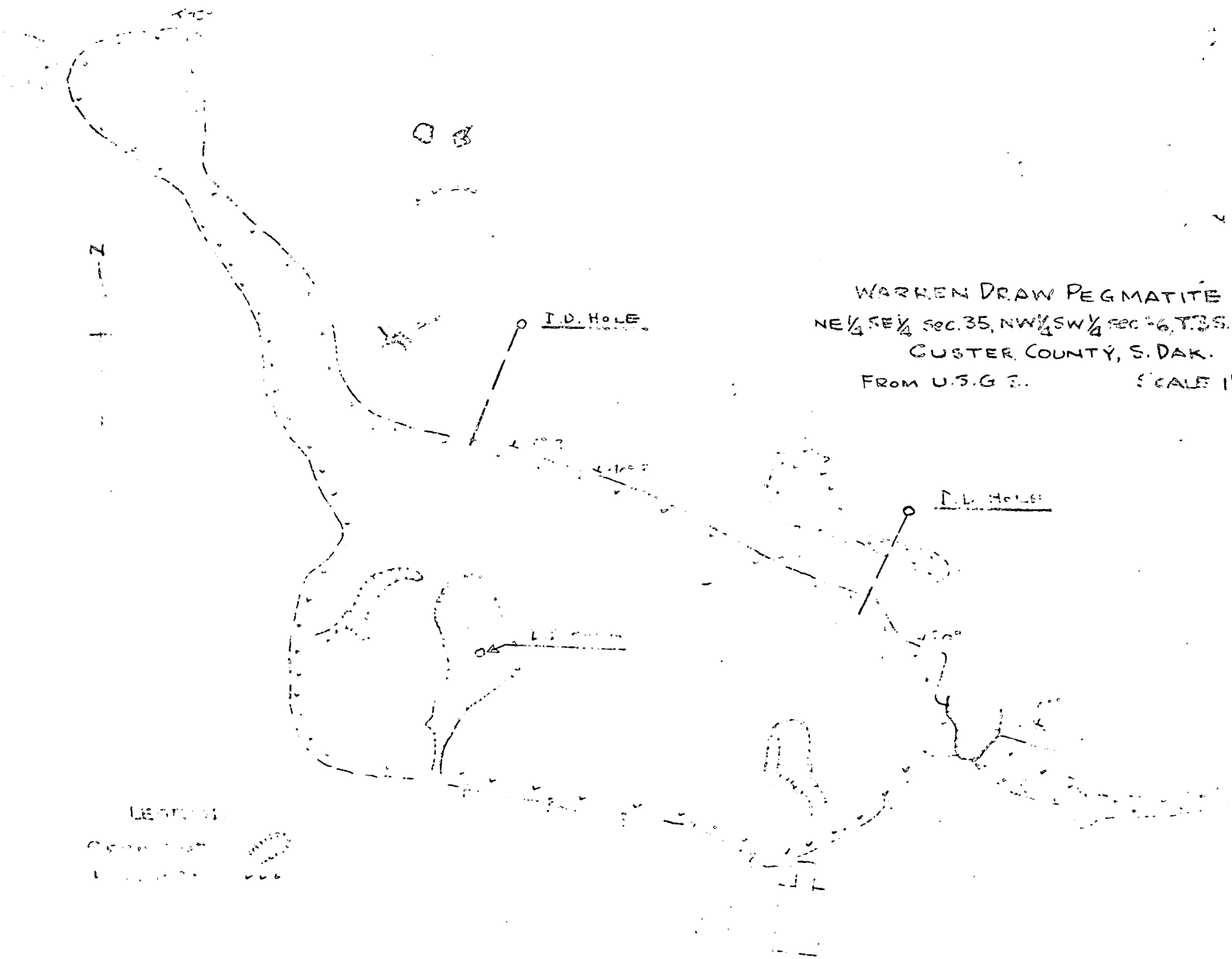
Inasmuch as the drilling would be contracted, no equipment need be purchased or rented.

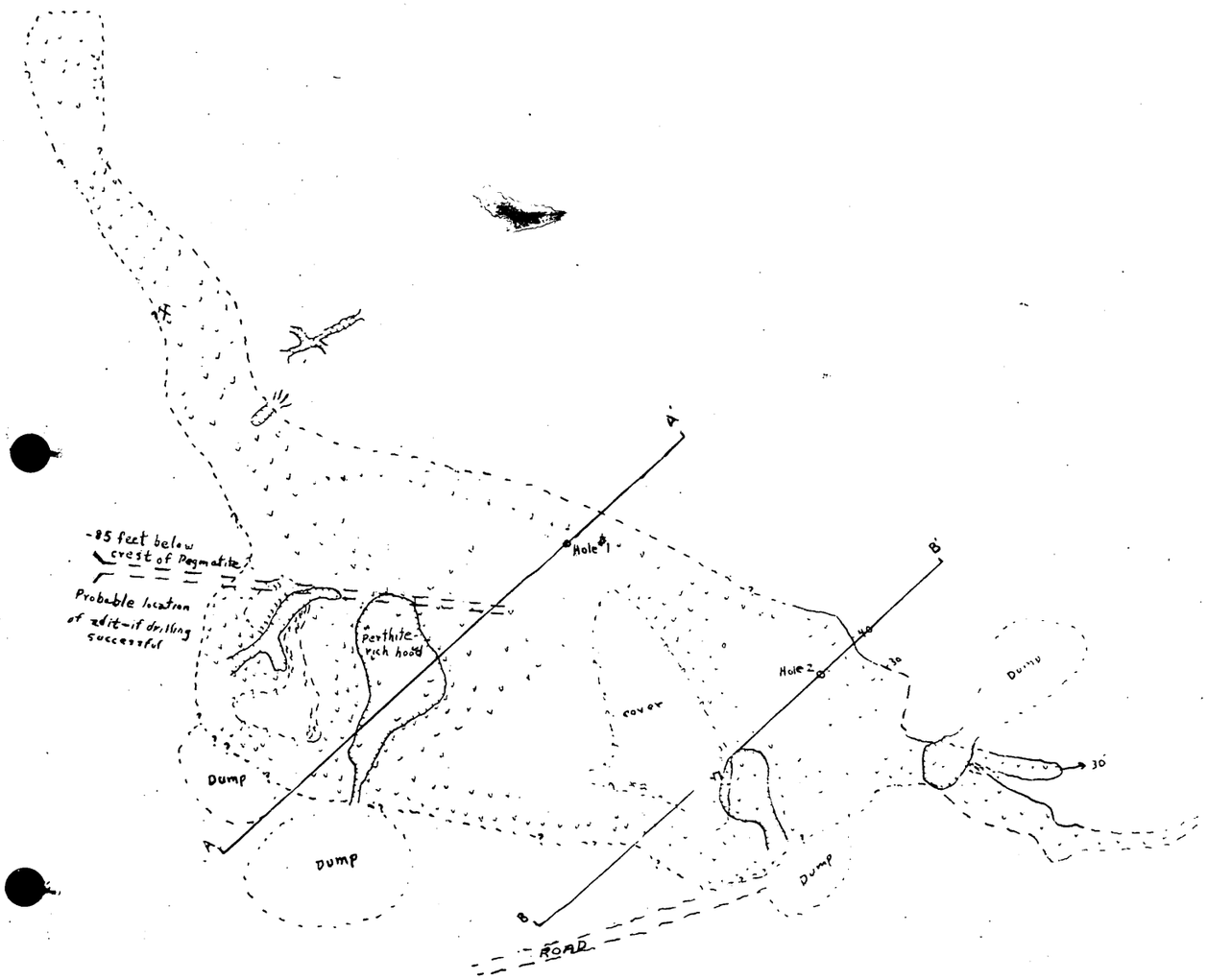
Exhibit D

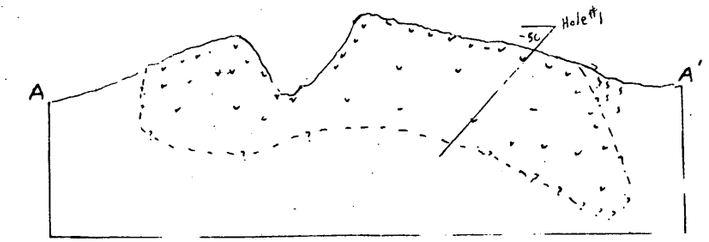
Labor, other than the drill crew furnished by the drill contractor, would be supervisory and engineering. The engineer of the Bureau of Mines would include this work with his normal direction of the project.

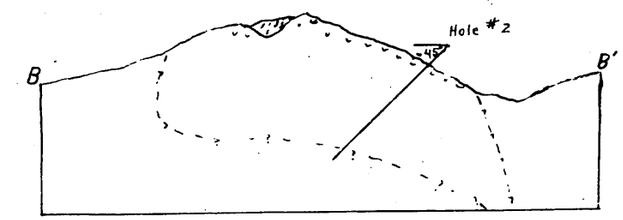
Exhibit E

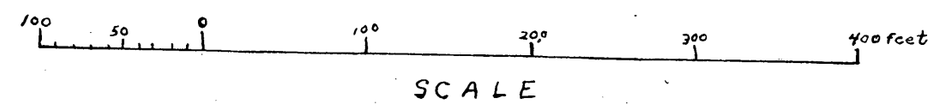
No repairs are necessary for the existing buildings or facilities.


WARREN DRAW PEGMATITE
NE¼ SE¼ sec. 35, NW¼ SW¼ sec. 36, T.3S. R.5E.
CUSTER COUNTY, S. DAK.
FROM U.S.G.S.
SCALE 1" = 100'
I.D. HOLE
N









EXPLANATION

PEGMATITE

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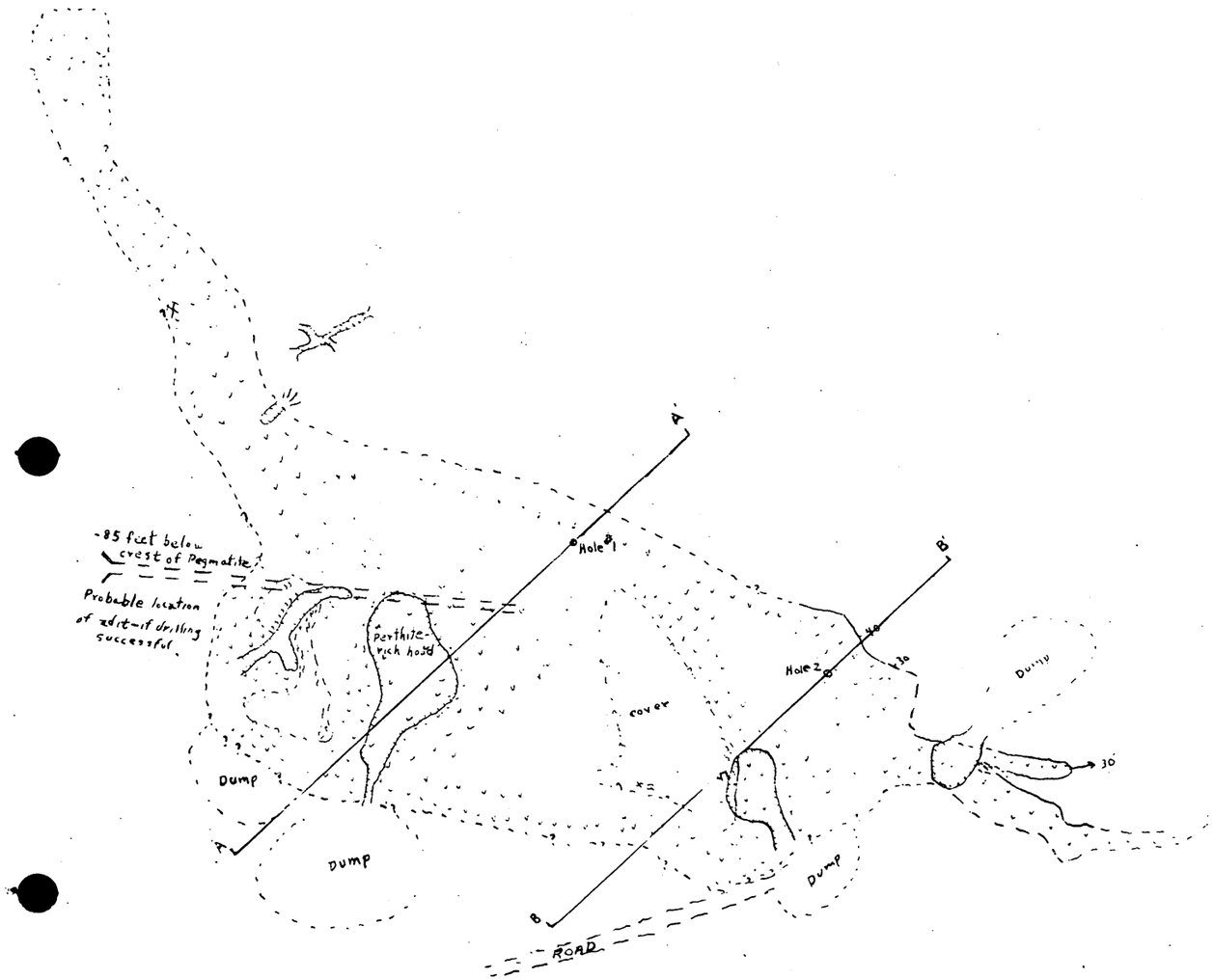
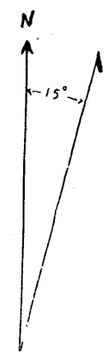
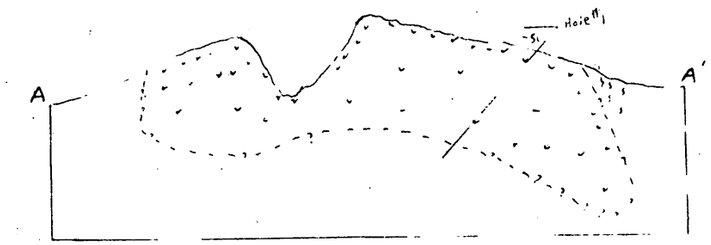
PEGMATITE CONTACT WITH DIP

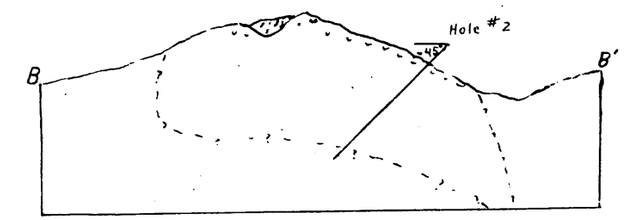
INFERRED CONTACT

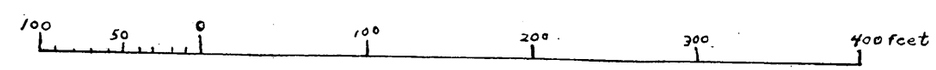
SKETCH MAP, WARREN DRAW PEGMATITE, CUSTER COUNTY, S. DAK.











SCALE

EXPLANATION

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