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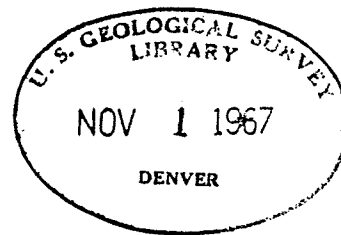
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INTERAGENCY REPORT: NASA 90

ADDITIONAL INFRARED SPECTRAL EMITTANCE MEASUREMENTS OF ROCKS FROM
THE MONO CRATERS REGION, CALIFORNIA

by

D. L. Daniels

U. S. Geological Survey
OPEN FILE REPORT

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

Press Release Dated November 9, 1967.

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INTRODUCTION

The objective of the work presented here is to supplement the infrared spectral emittance measurements given in a previous Technical Letter (Daniels, 1966). A new collection of field samples was obtained* from the Mono Craters region for spectral emittance measurements in the 700 to 1300 cm^{-1} region. The samples are keyed to the geologic symbols on the map prepared by Friedman (1966).

The new measurements (1) cover a more complete suite of igneous and pyroclastic rocks of the region and (2) include spectral comparisons between the natural weathered surface and a freshly sawed surface from the same rock.

The experimental techniques used in this work are described by Daniels (1966). A slight improvement in the signal to noise ratio was achieved by averaging the digitized values of three spectra for each sample.

The samples are described in Table 1. The location of each sample is indicated in the table and on the map.

* Collected by J. D. Friedman, G. W. Greene, S. J. Gawarecki, R. M. Turner

REFERENCES

Daniels, D. L., 1966, Infrared spectral emittances of rocks from the Pisgah Crater and Mono Craters Areas, California: U. S. Geol. Survey Technical Letter NASA-13.

Friedman, J. D., 1966, Geologic map of the Mono Craters area, California: U. S. Geol. Survey Technical Letter NASA-12.

Table 1. - Sample Descriptions

<u>Sample no.</u>	<u>Geol. map symbol</u>	<u>Description</u>
D-65-2	Qyrc	<u>Rhyolite pumice</u> - dark, frothy, glass; low density; large bubbles. Large, broad coulee - central section of crater chain.
G-66-15B	Qrb	<u>Pumiceous rhyolite</u> - gray, blocky, fine-frothy glass denser than D-65-2; buff weathered surface. Small, cone-shaped satellite crater - near northern end of crater chain.
D-65-1	Qyrc	<u>Pumiceous rhyolite</u> - gray, frothy, glass with medium-sized pores; intermediate between D-65-2 and G-66-15B. Large, broad coulee in central section of crater chain.
S-66-1	Qyrt	<u>Pumiceous rhyolite</u> - gray, fibrous-textured glass; similar to G-66-15B. Large circular tholoid - near northern end of crater chain.
G-66-20A	Qor	<u>Porphyritic rhyolite</u> - feldspar phenocrysts set in vesicular glass - "older" rhyolite from tholoid in Devil's Punchbowl.
S-66-5	Qb	<u>Cemented rhyolite sand</u> - rhyolite beach sand (similar to D-65-3) lightly cemented with calcareous lake salts. South Shore Mono Lake.
D-65-3	Qb	<u>Rhyolite sand</u> - unconsolidated, well-sorted, rhyolitic beach sand - mostly grains of obsidian, some pumice. South Shore Mono Lake.
G-66-4B	Qbt	<u>Bishop Tuff</u> - tan, low density, crystallitic tuff; uppermost unit. Aeolian Buttes.
F-66-4	Qbt	<u>Bishop Tuff</u> - gray-tan, dense, crystallitic tuff; middle-welded unit. Aeolian Buttes.

Table 1. - Sample Descriptions (cont.)

<u>Sample no.</u>	<u>Geol. map symbol</u>	
G-66-5B'	Ka	<u>Quartz monzonite</u> - biotite bearing, medium-grained. Aeolian Buttes
S-66-3B	Qam	<u>Andesite</u> - banded andesite with large feldspar phenocrysts, red oxidized basalt-fragments, glassy groundmass. Dome of andesite flows - near northern end of crater chain.
S-66-3C	Qam	<u>Andesite</u> - gray, banded, andesite; large feldspar phenocrysts, dark basalt fragments, glassy groundmass. Natural surface slightly glossy - same location as S-66-3B.
F-66-6,7	Qjlb	<u>Basalt</u> - black, vesicular, plagioclase basalt. North of June Lake Junction, west of U.S. Highway 395.
S-66-4	Qjlb	<u>Basalt</u> - red, oxidized flow of vesicular, plagioclase basalt. Edge of broad flow in Pumice Valley.

FIG. 1

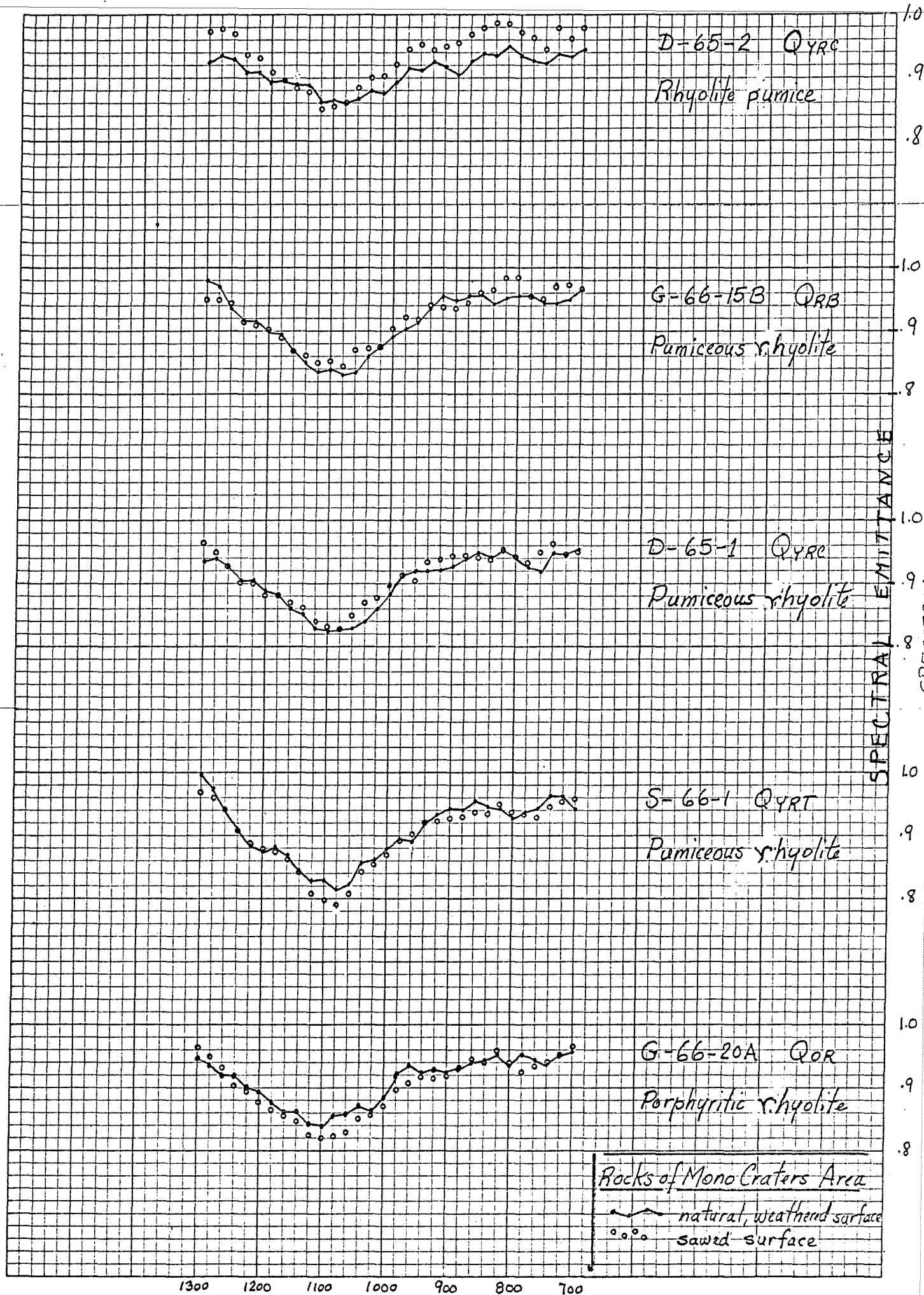


FIG. 2

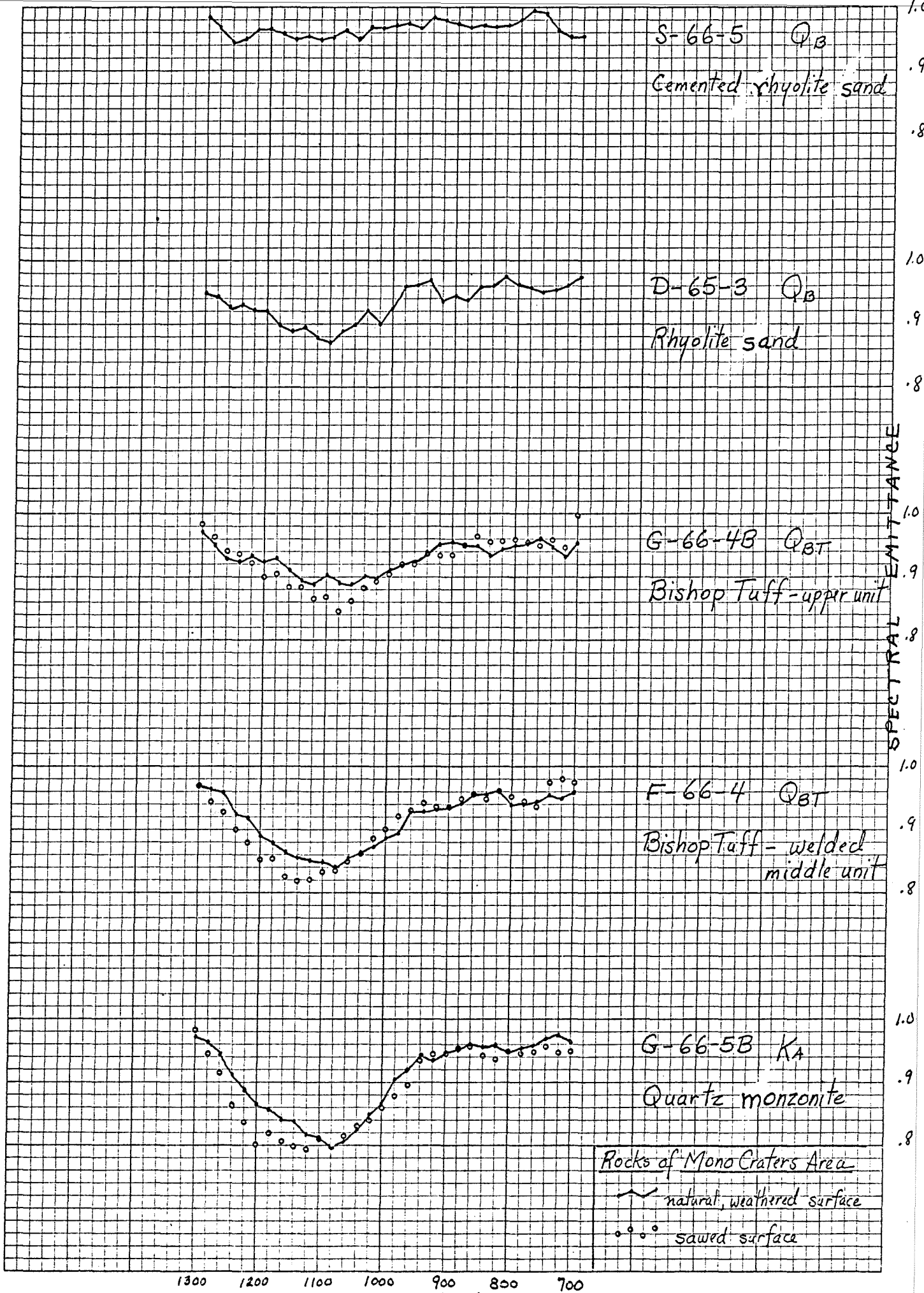
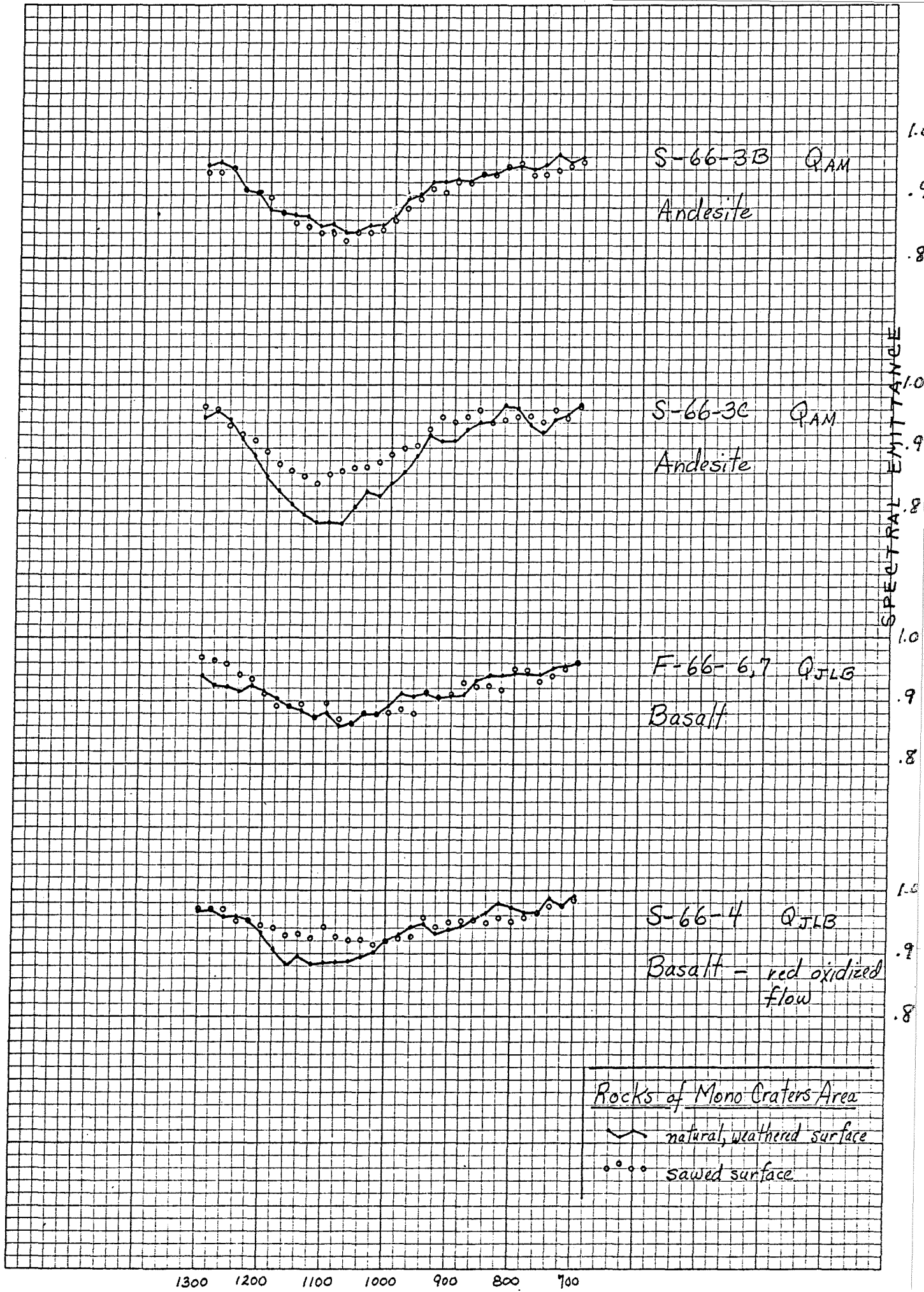


FIG. 3



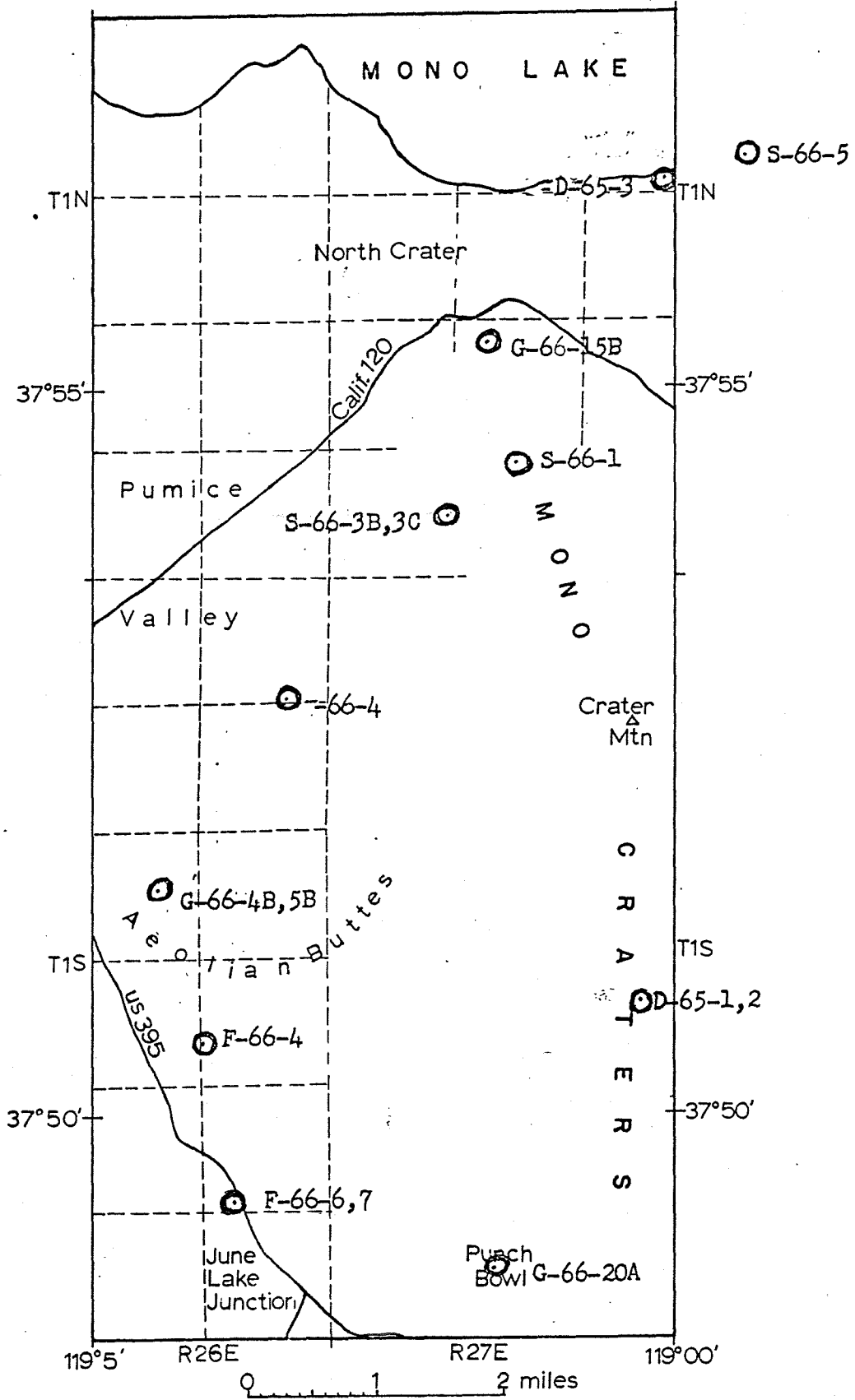


Fig. 4. Sample location map - Mono Craters area, Calif.