

## OFFICE MEMORANDUM

TO : John Warren, H-7

FROM : Karin Budding, H-8 *KB*

SUBJECT : GEOLOGIC SURVEY OF PIT 18, TA-54

SYMBOL : H8-77-863

DATE: November 29, 1977

*0674  
TA-54*

The field survey of Pit 18, Area G was completed on October 11, 1977.

The long axis of the pit strikes N35W, closely paralleling topographic contours. The southeast edge of the pit is approximately 52 m from the canyon rim and the bottom of the pit is at least 9 m above the floor of this adjacent canyon.

The pit is excavated in unit 2b of the Tshirege Member of the Bandelier Tuff. The thin, laminated unit, or "sandy parting", is exposed in the southwest wall. The marker bed first appears 5.18 m from the west end (at joint #6) and continues ~~westward~~ eastward, for roughly 14 m until it intersects the rim of the pit. The elevation of the parting, determined through the use of a transit, was found to be 6687.22 feet. The bed may represent the boundary between unit 2b and 3a.

The excavation of the main pit was completed on July 21. A subsequent digging in the floor of Pit 18 was finished by September 8. This smaller excavation has a maximum depth of 2 m and is bordered (lengthwise) by a bench, averaging 3 m wide, separating it from the main pit walls. Consequently, the geological field work was carried out at two different times and joint data is listed separately.

There are numerous fractures in the walls of the pit. Major fractures (those that span the height of the walls) occur at a density of 1 every 2.5 m. Of the fractures in the main walls, eighty one percent dip 80° or more, seventy seven percent show signs of weathering, and twenty nine percent bear roots. In the smaller excavation, eighty percent of the fractures dip 80° or more, sixty seven percent are weathered, and only two percent show root growth. A rose diagram of the 223 joints shows two main clusters, with average strikes of N30E and N88W.

The following joints are open two inches or more, thus require filling with sealing material: northwest wall, main pit - joint #56 and #63; southwest wall, main pit - joint #30 and #33.

Photographs (CN77-7204 to 7258, CN77-5550 to 5553, CN77-5567 to 5573, CN77-5588 to 5591) and descriptions of major fractures in Pit 18 are in the files of H-8 and are available for your examination.

KB:pdb



11182