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HYDROLOGIC SIGNIFICANCE OF FAULTS IN THE GREAT SMOKY MOUNTAINS NATIONAL PARK

By Gerald K. Moore and Este F. Hollyday

Prepared for: Lyndon B. Johnson Space Center

Houston, Texas 77058

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TITLE: The Hydrologic Significance of Faults in the Great Smoky Mountains National Park.

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PRINCIPAL INVESTIGATOR: Gerald K. Moore
Research Hydrologist
U. S. Geological Survey
NASA - MTF
Bay St. Louis, MS 39520

CO-INVESTIGATOR: Este F. Hollyday
Hydrologist
U. S. Geological Survey
Rm. 144 Federal Office Building
Nashville, TN 37203

OBJECTIVE OF STUDY:

To determine the feasibility of mapping faults on S-190 photography of the Great Smoky Mountains National Park and to determine the correlation between lineations and ground water.

PROGRESS AND OVERALL STATUS:

Some SKYLAB-3 data have been received by the investigators; these data include five channels of S-192 imagery from the multispectral scanner and S-190B photographs on color film. S-190A photographs also have been received.

Both scanner imagery and photographs include only the western one half of the test site, but this is not a problem; partial cover-

age limits the scope of the study but does not affect the objectives. A serious problem does exist, however, because of cloud cover and haze. About 40 percent of the included area is beneath clouds, and the remaining area is covered by moderate to thick haze. These conditions will cause problems with some goals of the study, because the haze has reduced photographic contrast considerably.

Overall progress is on shhedule, but a decision will be necessary before further progress can be made; this decision is needed during the next reporting period (March through May, 1974) to maintain scheduled progress.

REQUIRED DECISIONS AND ACTIONS:

The basic decision, which must be made is whether or not to proceed with the study as originally planned, using data that are presently available. The information that is needed for this decision is the answer to two questions: (1) Are all photos, which were obtained by SKYLAB 3, now in the hands of the investigators?, and (2) Were additional data for the test site obtained by SKYLAB 4?

Several possible alternatives to proceeding with the study as originally planned include (1) reduce the objectives and costs, (2) move the test site, and (3) use auxiliary data, such as existing high altitude aerial photos, ERTS imagery, and radar imagery to supplement the interpretations that are possible with SKYLAB imagery.

The NASA technical monitor of this study has been informed of the problems with available SKYLAB 3 data and is trying to obtain answers to the questions noted above.

EXPECTED ACCOMPLISHMENTS IN NEXT QUARTER:

Further progress is dependent on obtaining all S-190 data for

the test site and on the decision either to proceed as originally planned or to modify the study. If these items can be accomplished early in the next quarter, it should be possible to complete the so-called "first look" phase of the study in this quarter.

SIGNIFICANT RESULTS: None.

SUMMARY OUTLOOK:

Some goals of the study probably cannot be achieved with existing data from SKYLAB 3.

TRAVEL PLANS:

The principal investigator has proposed a meeting with the NASA technical specialist and the NASA technical monitor to discuss the problems with SKYLAB-3 data.

MISCELLANEOUS:

The editor of the New Yorker magazine called to enquire about preliminary results of this study. The SKYLAB 3 data had only been received a few days before, so that there were no preliminary results to report.