

INTER-OFFICE MEMORANDUM

SUBJECT: Lithologic description of a portion of the
cuttings from Union Well 42-7, Cove Fort, Utah

DATE January 18, 1978

cc: Debbie Edgerton

TO: GT Files

FROM: H. D. Pilkington

On January 4 Debbie Edgerton reported the Union well to be at 2244 feet and having lost circulation problems. She also reported that Steve Maione, Union geologist, told her the hole had penetrated 2055 feet of andesite, and was in the Coconino Formation between 2055 and 2170 feet. Steve concluded that the hole penetrated the Pakoon Formation at 2170 feet and the lost circulation zone was in the carbonate section.

On January 12 I examined a portion of the cuttings from well 42-7 for which the following generalized lithologic descriptions are given:

- 1700 - 1720 Gray-green quartz latite crystal tuff subhedral to euhedral plagioclase crystals, biotite crystals, and subhedral to anhedral quartz. Minor disseminated pyrite. The matrix consists of altered and devitrified ash, alteration to green clay material - probably a mixture of montmorillonite and celadonite.
- 1720 - 1780 Same.
- 1720 - 1800 Dark gray-green quartz latite crystal tuff to brownish-red, partially welded, quartz latite crystal tuff. The rock is cut by a few shear zones as evidenced by presence of slickensided cataclastic material - sheared rock constitutes about 1-5 percent of total rock. Minor disseminated pyrite.
- 1800 - 1900 Same with varying amounts of disseminated pyrite.
- 1900 - 1920 Buff colored fine-grained tuff with minor crystal fragments. Considerable fine-grained iron stained fracture filling material suggests a weathered interflow zone.

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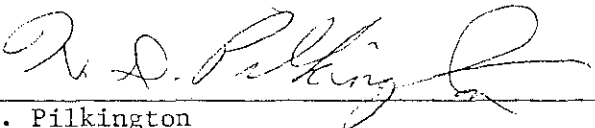
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January 18, 1978

Page 2

- 1920 - 1980 Pinkish-brown rhyodacite crystal tuff - sub-hedral to euhedral crystals of plagioclase and hornblende and subhedral to anhedral crystals of k-spar and quartz set in a matrix of fine-grained ash. Plagioclase partially altered to clays, hornblende altering to chlorite. Accessory amounts of magnetite.
- 1980 - 2050 Gray-green to pinkish gray fine-grained quartz latite crystal tuff. Rock is cut by a few shear zones. Alteration and/or weathering more pronounced along shears. Gray-green color related to montmorillonite alteration. Disseminated pyrite more common in the gray-green altered rock.
- 2050 - 2170 White fine-grained quartzite with interbedded light gray fine-grained limestone. Minor disseminated pyrite in the quartzite.
- 2170 - 2180 Gray, fine-grained, dense dolomitic limestone. New material represents only very minor sample, rest all from up-hole and includes both volcanics and quartzite.
- 2180 - 2340 No samples - lost circulation zone.

The white quartzite does not look like typical Coconino sandstones to me. It is much finer-grained, more thoroughly indurated. Therefore, my guess is that white quartzite and interbedded gray limestone may represent a portion of the Kiabab formation. Additional samples from below the lost circulation zone will help identify the rock units.


H. D. Pilkington

HDP/c