

Lithologic Log Addendum

Well BLM-21-400

Cuttings of the lithologic unit from well BLM-21-400 were sent to the Department of Geological Sciences, New Mexico State University (NMSU), Las Cruces, New Mexico, for detailed petrographic analysis when identification of fine-grained, highly altered volcanic rocks at the NASA-WSTF site became difficult using conventional field methods. Petrographic reports from NMSU were received after the printing of these lithologic logs, hence the need for this addendum. The petrographic description from NMSU is included below.

Previous unit name based on field identification: **Ash-Flow Tuff**

New Unit name based on petrographic analysis: **Porphyritic Rhyolite**

BLM-21-400 (460')

Porphyritic alkali rhyolite lava flow or dome

Origin:	lava flow or dome
Texture:	aphanitic porphyritic
Phenocryst	
mineralogy:	sanidine + quartz
Porosity:	minimal
Alteration:	minimal

Approximately 10% phenocrysts are present in a microgranular groundmass of interlocking feldspar, quartz, and FeTi oxides. Sanidine phenocrysts (8%, 0.15 - 3 mm) are twinned and subhedral. Quartz phenocrysts (2%, 0.15 - 1.0 mm) are subhedral to anhedral, rounded, and embayed. Traces of biotite (approximately 0.4 mm, gold to dark red-brown pleochroism) and sphene are also present as accessory phases. Porosity and alteration are minimal to non-existent. The sample originated as either a rhyolitic lava flow or a welded ash-fall tuff. Because the groundmass is devitrified, it is possible that glass shards are very subtle and that this sample is tuff. However, the lack of both shard-like groundmass structures and broken quartz and sanidine phenocrysts supports a flow or dome origin.