

LITHOLOGIC LOG

CT

Project: Mt. PrincetonHole 640-38Elevation: 8,090Date Drilled: 10/23-10/24/79Location: NESE20, T15S, R78WMethod: mudGamma: 125 cps.

Depth (m)	Description
0-12	Slightly decomposed quartz-monzonitic/granitic debris, with quartz, plagioclase, biotite, some dark lithic fragments, epidote, k-spar, chlorite, and limonite. Size distribution is 80% granules, 10% medium grained sand, 10% fines, with sand increasing to 30% @12m. Unit is glacial outwash gravel.
12-21	Composition unchanged. Size distribution is 85% medium and coarse sand, 10% fines and <5% granules. Unit is alluvial sand.
21-27	Outwash gravel similar to 0-12m.
27-30	Alluvial sand similar to 12-21m.
30-42	Outwash gravel similar to 0-12m.
42-90	Alluvial sand similar to 12-21m, with clayey layers @60m.

Comments: Hole 38 was drilled on an old Chalk Creek stream terrace.
The section is outwash and alluvium.

LITHOLOGIC LOG

Project: Mt. PrincetonHole 640-37Elevation: 8,005Date Drilled: 10/11-10/13/79Location: SESE17, T15S, R78WMethod: mudGamma: 130 cps.

Depth (m)	Description
0- 6	Quartz-monzonitic/granitic debris with quartz, plagioclase, biotite, some chlorite and k-spar. Grains are subangular-subrounded. Size distribution is 75% granules, 20% sand, 5% fines. Unit is sandy bouldery outwash.
6-12	Composition unchanged. Unit is >95% coarse to medium sand, angular to subangular grains, and is an alluvial sand.
12-18	Mostly granitic debris, with size distribution of 60% coarse to medium sand, 40% granules. Unit is a sandy outwash gravel.
18-24	Unit is granitic, medium to coarse grained alluvial sand.
24-57	Composition is same as 0-6m. Grains are 80% granules, 15% sand, 5% fines and subangular to subrounded, with some dark metamorphic fragments at 36m, and sandy layers at 45m. Unit is sandy bouldery outwash.
57-132	Unit is similar to 18-24m, with variation in fines (5-25%) and granules (0-20%). It is a granitic, medium grained alluvial sand with clay/gravel layers.
<p>Comments: Hole 37 was drilled on an old stream terrace of Chalk Creek. The entire hole was drilled in glacial outwash and alluvium.</p>	

LITHOLOGIC LOG

Project: Mt. PrincetonHole 640-36Elevation: 8,120Date Drilled: 10/7/79Location: SE8 T15S R78WMethod: mudGamma: 120 cps.

Depth (m)

Description

0-24	Decomposed quartz monzonitic/granitic debris, with quartz, k-spar, biotite, plagioclase and dark lithic fragments. Size ranges from silt to granule. Fines are $\approx 10\%$, granules range from 30% to 60% with medium-coarse sand as the remainder.
24-36	Composition unchanged; fines $\approx 50\%$, granules $< 5\%$.
36-84	Same as 0-24m.
84-90	Composition unchanged; fines 20%, medium to coarse sand 80%.

Comments: Surface to total depth is in Qal derived from Mt. Princeton Batholith. 24-36m and 84-90m are probably braided stream sand channels. As with #35 and #34, water was encountered at 33m.

LITHOLOGIC LOG

CT

Project: Mt. PrincetonHole 640-35Elevation: 8,150Date Drilled: 10/6/79Location: NE8 T15S R78WMethod: mudGamma: 130 cps.

Depth (m)	Description
0-33	Decomposed quartz monzonitic/granitic debris consisting of quartz, plag, chloritized biotite, k-spar and limonite. Dominant size is medium-coarse sand (70%), with 10% fines. Size range is silt-granule. Dark lithic fragments (metamorphic rock) are present throughout the cuttings.
33-36	Composition unchanged; granules absent--nearly 100% coarse sand.
36-92	Same as 0-33m.
Comments: Surface to total depth is in Qal derived from Mt. Princeton Batholith, with a sand lens at 33-36m. Water table was reported by drillers as 100'(33m).	

LITHOLOGIC LOG

Project: Mt. PrincetonHole 640-34Elevation: 8,100Date Drilled: 10/5/79Location: NE5, T15S, R78WMethod: mudGamma: 130 cps

Depth (m)	Description
0-33	Mixed granitic/quartz monzonitic debris with quartz, biotite, k-spar, limonite and some dark lithic fragments. Dominant size is coarse sand ($\approx 80\%$), with $<5\%$ fines and a range from silt to granule. Mineral composition varies, but quartz is always highest %.
33-37	Composition unchanged; fines 80%, coarse sand 20%.
37-93	Same as 0-33m, with few pieces of rhyolite.
Comments: 0-33m is Qal derived from the Mt. Princeton Batholith. A hard layer encountered @80' (24m) by drillers is probably a stream gravel. Water table is @33m. 33-37m is a sand/silt alluvial unit. 37-93m is same as 0-33m.	

LITHOLOGIC LOG

CT

Project: Mt. PrincetonHole 640-33Elevation: 8,720Date Drilled: 10/8/79Location: NW11, T51N, R7EMethod: mudGamma: 130 cps

Depth (m)	Description
0-66	Quartz monzonite debris, with quartz, biotite, plagioclase and scattered granitic chips. Dominant size is coarse sand, with a range from clay to granule. Gravel layers were encountered at 10m (with some rhyolite chips) and 45m, evidenced by high %'s of granules.
66-72	Initial increase in grain size, then a shift to exclusively coarse sand with fines increasing to bottom hole. Composition was quartz-monzonitic.
Comments: 0-66m is Qal and minor outwash. Drilling was fairly fast with few slow spots--probably gravel layers. 66m-72m is either cobbly outwash or bouldery till. The initial increase, then steady decrease, in grain size is best explained by a progressively duller bit grinding through a larger boulder. The hole was stopped at 240.	

LITHOLOGIC LOG

Project: Mt. PrincetonHole 640-32Elevation: 8,680Date Drilled: 10/9-10/10/79Location: NE36, T15S, R79WMethod: mudGamma: 125 cps

Depth (m)	Description
0-27	Quartz monzonitic/granitic debris, with quartz, k-spar, biotite, plagioclase and metamorphic rock fragments. Granules and coarse sand are dominant (70%), with 15-20% fines, range is from clay to granule. At 3m there is a 1/2m zone of red clay.
27-30	Increase in grain size; almost exclusively angular granules with some coarse sand.
30-37	Decreasing grain size with depth to bottom hole.
<p>Comments: Surface to total depth was in glacial till and glacial outwash. Drilling was very hard, slow; the sides were washing and shifting boulders, made connections difficult. Since the hole was washing so badly, cuttings may not correspond very accurately with lithology.</p>	