

EARTH SCIENCE LABORATORY

LITHOLOGIC STRIP LOG

DRILL HOLE Burnt Lava 62-21 Geysier Geoth. Thermal gradient Core hole.

STATE Calif COUNTY _____ PROJECT Medicine Lake area

SEC. _____ TWP. _____ RGE. _____ ; LOC. _____ FNL, _____ FWL

TD 2139 BOTTOM HOLE FORMATION _____ SURFACE FORMATION _____

LOGGED BY Sibbett DATE 2-87 SAMPLE INTERVAL(S) _____

LITHOLOGIC LOG CORRECTED FOR LAG YES NO

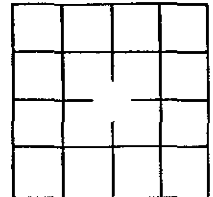
SPUD DATE _____ COMPLETION DATE _____

DEPTH DATUM KB DF GR ELEV. _____

DRILLING FLUID(S) _____

REMARKS Top section probably rotary drilled.

DRILL
SITE IN
SECTION



DEPTH	ALTERATION							GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME	
	1. WEAK	2. MOD.	3. STRONG							MIN. /	FT.
480									486.5 start of core 2.5" Core		
								no Sample	486-574 Basaltic ~1% 1-2 mm plag. pheno. 1-5 mm vesicles variable abundance, brnsh-dark gray mostly solid flow with few joints, dipping 48° & 80° Minor light gray clay on joints. flow breccia 489-497? 9/15' recovery.		
500									*flow breccia, vesicular 501-507' dark-red to dark gray, scoria, clay coating. highly vesicular 507-518 Sample 516.5' poss. opel.		
520									vesicles strong along flow shear planes. few joints 25° & 85°		
540									massive basalt flow continued. near flat flow planes with 2mm vesicles, med. gray, ~1% 2mm plag. pheno.		
560									solid flow base at 565' over scoria/flow breccia reddish-purple. minor white 2nd. mineral		
580									574'-579' Ash-cinders, basaltic, browns. 579'-583' Vol. Sand, feld, gtz, Lith. 1mm bio. xls. mod. sort coarse & few peb. of vol. rx. med. gray. ^{Pumice & Illi} Sand is v. pores, reworked top of tuff. gradation contact at base		
600									583'-696 Pyroclastic Flow-tuff. ash matrix pastel's yel-grn to pink, ~35% andesitic blocks ~2% 2mm, Feldspars, gray lapilli		

DEPTH	ALTERATION							GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME MIN./ FT. SCALE
	1	2	3	4	5	6	7			
600	123	123	123	123	123	123	123		2 1/2" Core	
Sample		Tr							583-696 Pyroclastic Flow - Tuff. Lapilli to foot blocks in ash	
620		Tr								
640									Flattened lithic? clast, and brown wispy structures Red-black flattened lava bodies. Rock is a uniform dull pink, few of the lapilli are white Flattened red-black lava clasts are 3-10 cm. 1/2 x ls.	
660										
680									Pyroclastic Flow continued.	
700	Tr								basal contact clay alt. starts 694', total waxy clay 695-696 contact with basalt appears cont. & tight, slip in base of tuff	
Sample		Tr	Tr						696-711.5 Basalt Flow - vesicular, ~2% plag. phen. ~2mm dark gray, cm vesicles, pyrite in vesicles, black glassy min. in ves in vesicles few calcite xls, clay coating.	
6" Sample										
720									711.5-739 Lahar or vol. breccia, ~half clay + lapilli and half basalt flow blocks. Calcite filling vesicles. Heterogeneous, some zones lapilli, some ash, some blacks, some clay alt. lava blocks?	
740										
760									739-976 Basalt, Flow, ~10% 2-3mm xls olivine, pyrox. plag. laths, black on fresh, olive-grn clay infilling vesicular & broken zones	
Sample									1-3cm vesicles partially filled with calcite + zeolite	
780									strongly magnetic Opal in vesicles	

DEPTH	ALTERATION							GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME MIN. / FT. SCALE
	Clay sp 123	Clay 123	alt. rock 123	Secondary silica 123	Pyrite 123	Calcite 123	Zeolite 123			
960									2 1/2" core	
									Cont. 739-976 Basalt Flows, vesicular top & bottoms with flow breccia between solid non-vesicular centers	
980									976-1000 Ash Flow Tuff, yellow w/ brn pumice lapilli to block size basaltic scoria, below 972 the unit is ~60% scoria blocks, brns- to orange.	
1000									1000-1028 Basalt Flows, vesicular, black, non-porph. calcite rosettes in vesicles few joints 80°-90° with MnOx on surfaces.	
1020										
1040									1028-1068 Ash-Flow Tuff, crystal-lithic, ~20% 2mm felds Lapilli ~20% of unit, mostly grn, gray-black lithics, some pumice. Pale yel-gray to dark gray in welded zone Welded zone-grades to at 1042-1052 welded zone Below welded zone ash is pale green. No lithic lapilli below 1052', different ash unit.	
1060										
1080									1068-1236 Basalt Flows, vesicular, black, ~1% phenocrysts plagioclase & olivine, 2mm. ~30% 5mm vesicles light blue clay? coats vesicles. Bright green clay? fills some vesicles. hem. on joints. green clay in vesicles celadonite? Flow banding grays & red. Hem. stain on fractures.	
1100									1107-112 intra flow ash unit, clay alt.	
1120									Top flow breccia, scoria. Olivine basalt - gray-black, trace olivine phenocrysts. hem & qtz along fractures.	

DEPTH	ALTERATION							GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME MIN. / FT. SCALE
	1. WEAK	2. MOD.	3. STRONG	Clay on joints	Clay in rock	Secondary Silica	Calcite			
1680	123	123	123	123	123	123	123		<i>2 1/2 core</i>	
Sample 5"									1645-1705 Basalt Flows, dark gray, fine grain non-porph. solid flow center.	
1700									Few calcite and qtz amygdules also calcite along joints.	
Sample									1705-2014 Volcanoclastic, poss Lahar, mixed lithologies of vol. cobbles or blocks in a clay alt tuff to c. lithic sandst. matrix, brown to pale green-grays.	
1720									Below 1712' the matrix is c. sandst., less clay alt, clast are lapilli to >1 ft. latite? composing ~70-80% of unit.	
Sample									Mostly lapilli, red-brn-grays. White fibrous zeolite? along fractures and filling small cavities between lapilli.	
1740									Most of the unit is clast-supported	
1760									clast are non-vesicular Volcanic breccia with ~5-10% open space 60% filled with zeolite.	
1780									Mostly to all andesite (dacite?) litho. of clasts. may be a flow breccia or dome sprea here.	
1800									small crevice openings between clasts appears to be original cavities in a clast supported breccia, cavities now filled with fibrous Zeolite. See Sample 1403' Volcanic breccia continued, mixed andesitic to dacite? Grayish red	
1820									Color grades to grayish purple at 1822	
1840										
Sample 6"										
1860									Black mineral coating pore spaces MnOx?	

DEPTH	ALTERATION <small>1. WEAK 2. MOD. 3. STRONG</small>						GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME MIN. / FT. SCALE
	Clay f. 123	Clay alt rock 123	Secondary Silica 123	Calcite 123	Zeolite 123	123			
1860								2 1/2' core	
1880								1705-2014 Volcanoclastic, clast supported, lapilli to blocks of andesitic to dacitic? grayish purple. Zeolite is white-fibrous-spongy-Sampled at 1403'	
1900									
6" sample 1920 Sample								Abundant open spaces to 3cm size part filled with zeolite Possible rock change at 1926'	
1940								Volcanic breccia cont. Large zeolite filled breccia cavities	
1960								Volcanic breccia cont.	
1980									
2000								Looks like welded stony ash flow tuff here, same unit. Grades to ash flow tuff?, few lapilli? no pumice.	
2020								2033-2038 Dacite? lava flow or dike, contact missing ~15% pheno. ~2mm, bio. and plag? anh., brnsh gray. Black mineral MnOx? coating joints. Fibrous white zeolite as above, on joints	
2040								2038-2041 Basalt dikes, grayish black, vesicular, chilled contacts.	

DEPTH	ALTERATION						GRAPHIC LITHOLOGY	LITHOLOGIC DESCRIPTION	DRILLING TIME MIN. / FT. SCALE
	123	123	Secondary Silica	123	123	123			
2040								2 1/2" Core	
								Basalt dike to 2041' and lower contact present.	
2060								2060-2139 Andesite, poss. Dacite? lava flow as above.	
								15-20% pheno. 2mm Feldspar & hornblende.	
								hem. and MnOx on joints	
Sample									
2080								Strongly jointed 2080-2102, rock color change to med-gray, hem stain on joints.	
								Abundant cm size mafic xenoliths	
2100									
								chlorite on joints.	
Sample									
2120									
Sample									
6"									
2140								Strong jointing 2132-TD.	
								2139 TD	