Seven Troughs

B. Miller

21280 0097

Donald M. Hudson
Consulting Geologist
1540 Van Petten Street
Reno, Nevada 89503

John M. Robinson
P.O. Box 1459
Pebble Beach, CA 93953

July 11, 1991

Report of x-ray diffraction analysis

Pulps from drillholes STR-14 and STR-15 were analized with CuKα radiation. Red line tracings are of the dry material. Blue line tracings are after treatment with glycerol-water solution to test for expansive clays. Results are given on the attached table.

Symbols:

- ++ greater than 50% of material.
- \+ 20 to 50% of material.
- \- 10 to 20% of material.
- = 3 to 10% of material.
- ? Identification uncertain, but less than 3% of material.

Notes:

K-feldspar appears to all be sanidine bur some secondary K-felspar could be present.

Cristobalite refers to highly crystalline β-cristobalite. This could have formed by either devitrification of rhyodacite or from hydrothermal activity.

Opal- cristobalite refers to a very poorly crystalline cristobalite partially crystallized from opal. Probably hydrothermal in origin.

Ill.-Mont. ratio refers to the relative amounts of illite and montmorillonite in the randomly interstratified illite-montmorillonite with the proportion of illite listed first. All of the montmorillonite appears to be calcic.

DQ was submitted by Bruce Miller and is "Dixie Queen southeast end of dump, dozer in cut at & below old rails."

Discussion:

Hole STR-14 starts in opal-cristobalite and montmorillonite altered rhyodacite. At about 210 feet the hole enters moderately altered basalt with chlorite and montmorillonite alteration to the hole bottom (360 feet). Hole STR-15 starts in opalized rhyodacite (probably alteration above the paleo watertable). From 80 to 160 feet is strongly montmorillonitized rhyodacite probably formed below the paleo watertable. Down to about 390 feet, alteration is dominately quartz and montmorillonite with possibly hydrothermal cristobalite. From 400 feet to hole bottom (640 feet), the the montmorillonite gets increasingly interstratified with larger proportions of illite. In the last 50 feet of the hole, K-feldspar has been partially destroyed.

Donald M. Hudson
Donald M. Hudson

DRILL HOLE STR-14	QUARTZ	K-FELDSPAR	PLAGIOCLASE	PYRITE	CLINOPTILOLITE	CHLORITE	KAOLINITE	CRISTOBALITE	OPAL-CRISTOBALITE	MONTMORILLONITE	RANDOMLY INTERSTRATIFIED ILLITE-MONTMORILLONITE	ILL. -MONT. RATIO	
40-50		+			-				++	+			
90-100		+							+	++			
120-130		+							++	-			
200-210	+	+	-							-			
250-260	+		+			-				+			
290-300	+		+	=		+				+			
330-340	+		+	=		+				+			
350-360	+		+	=		-				-			
STR-15													
50-60	?						-		++				
90-100	?			-					-	++			
120-130		-		=					+	++			
160-170	?	+	-						-	+			
200-210	+	+		=				+		+			
290-300	+	+						-		+			
340-350	+	+		=				+		-			
400-410	+	+		=				+		+	-	Mont. rich	
470-480	+	+						+			-	Mont. rich	
520-530	+	+		=				-		+	-	1:1	to 1:10
550-560	++	+		=	-			-			+	variable ave. 1:2	
600-610	++	-		=				=			+	variable ave. 1:1	
630-640	++	-		=							+	variable ave. 5:1	
DQ	++	+									-	variable ave. 5:1	