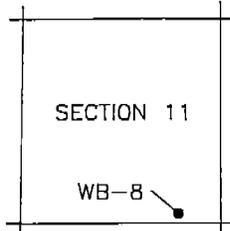


WB-8 LITHOLOGIC LOG

LOCATION MAP:



SCALE:
1" = 5000'



— 1/4 — 1/4 — 1/4 SE 1/4 S 11 T 21S R 3E

SITE ID: NASA-WSTF LOCATION ID: WB-8
 SITE COORDINATES (ft.):
 N 217794.98 E 417643.72
 GROUND ELEVATION (ft. MSL): 4961.68(BC)
 STATE: NEW MEXICO COUNTY: DONA ANA
 DRILLING METHOD: MUD ROTARY/AIR HAMMER
 DRILLING CONTR.: LARJON
 DATE STARTED: 2-26-93 DATE COMPLETED: 3/10/93
 FIELD REP.: K. SUMMERS
 COMMENTS: DRILLED 0-207' (8 3/4" TRICONE BUTTON BIT)
MUD ROTARY. INSTALLED 5" DIA. STEEL SURFACE CASING TO
207'; DRILLED TO 447' WITH 4 1/2" AIR HAMMER USING
FOAM. TOP OF BEDROCK = 195'.

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)	
0-5'					CUTTINGS ARE PREDOMINANTLY COARSE TO VERY COARSE SAND SIZE. ALSO SEVERAL CUTTINGS ARE SMALL TO MEDIUM PEBBLE SIZE. PRIMARILY QUARTZ, CHERT, AND LIMESTONE GRAINS, SUBROUNDED TO ANGULAR.	
5-10'		++O//VV	6		<p>0-195' <u>ALLUVIUM (SANTA FE GROUP):</u> OVERALL COLOR OF SAMPLES RANGES FROM MODERATE YELLOWISH BROWN (10 YR 5/4) TO OLIVE BLACK (5 Y 2/1), WHILE INDIVIDUAL GRAINS VARY WIDELY IN COLOR. GRAINS RANGE FROM .05"-1.0" IN DIAMETER AND ARE ANGULAR TO SUBROUNDED. ONE CLAY-RICH ZONE (105'-110') WAS PRESENT AS WERE SEVERAL COARSE GRAINED GRAVEL LENSES (20'-30', 40'-55', 60'-75', AND 105'-110'). ALLUVIUM IS A POORLY TO MODERATELY SORTED, UNCONSOLIDATED TO SEMI-CONSOLIDATED POLYGENETIC PEBBLE TO BOULDER CONGLOMERATE. LIMESTONE IS THE DOMINANT ROCK TYPE PRESENT. IT IS PREDOMINANTLY MICRITIC AND MAY BE SILTY. COLOR RANGES FROM MEDIUM DARK GRAY (N4) TO GRAYISH BLACK (N2). OTHER SEDIMENTARY CLASTS INCLUDE POORLY- TO WELL-SORTED SANDSTONES, LAMINATED AND NON-LAMINATED GREENISH GRAY (5 GY 6/1) TO OLIVE GRAY (5 Y 4/1) SILTSTONES, AND CHERT. VOLCANIC CONSTITUENTS INCLUDE A WIDE VARIETY OF TUFFS AND RHYOLITES, DUSKY BLUE (5 PB 3/2) TO GRAYISH PURPLE (5 P 4/2) ANDESITE PORPHYRYS AND MODERATE REDDISH BROWN COARSE GRAINED GRANITE. QUARTZITE IS ALSO PRESENT IN MINOR QUANTITIES. INDIVIDUAL QUARTZ AND FELDSPAR MINERAL GRAINS ARE PREVALENT.</p>	
10-15'		==++OO//V	6			
15-20'		===++//V	5			
20-25'		+++++//VV	10			
25-30'		+++++=//VV	7			
30-35'		+++++...VV//	4			
35-40'		++++...VV==//	5			
40-45'		++++...VV==//	4			
45-50'		+++++...==//V	6			
50-55'		+++++...==//V	14			
55-60'		+++++...=//V	13			
20-30'						PREDOMINANT CUTTINGS RANGE IN SIZE FROM COARSE SANDS TO MEDIUM PEBBLE GRAVEL. LIMESTONE DOMINATES. CUTTINGS ARE PRIMARILY SUBANGULAR TO ANGULAR.
30-40'						CUTTING SIZE IS SMALL. PREDOMINANT SIZE IS COARSE SAND TO VERY COARSE SAND. INCREASE IN PERCENTAGE OF QUARTZ GRAINS.
40-55'					PRIMARY CUTTING SIZE RANGES FROM VERY COARSE SAND TO MEDIUM PEBBLE GRAVEL. LARGER (.75 TO 1 INCH) CUTTINGS ARE FAIRLY COMMON AT 55' AT 45'. CLAY RICH.	

WB-8 LITHOLOGIC LOG
(Continued)

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)
55-60'					REDUCTION IN CUTTING SIZE. CUTTINGS ARE PRIMARILY COARSE TO VERY COARSE SAND SIZED. GRAINS ARE SUBROUNDED TO ANGULAR.
60		+++++VV//	8		
60-70'					GRAIN SIZES HAVE INCREASED AND ARE NOW PRIMARILY VERY COARSE SAND TO MEDIUM PEBBLE GRAVEL. CLAY-RICH AT 70'.
65		+++++VV=	9		
70		++++VV===	12		
70-75'					CUTTINGS ARE 1/2" GRAVEL, SILTY CLAY 20 PERCENT. CUTTINGS ARE SUBANGULAR TO SUBROUNDED.
75		++++//==■V	14		
75-90'					CUTTINGS ARE PRIMARILY COARSE TO VERY COARSE SAND. WIDE VARIATION IN GRAIN TYPES. CUTTINGS ARE SUBROUNDED TO ANGULAR.
80		++++VV■//	12		
85		++++VV■//	14		
90		++++VV■//	24		
90-100'					PRIMARY CUTTINGS ARE LIMESTONE. CUTTINGS ARE SUBANGULAR TO ANGULAR.
95		+++++■V	16		
100		+++++■V	8		
100-105'					REDUCTION IN LIMESTONE CUTTINGS.
105		+++VV//■	12		
105-110'					PRIMARILY LIMESTONE. CUTTING SIZE INCREASE. CUTTINGS RANGE PRIMARILY FROM COARSE SAND SIZE TO MEDIUM PEBBLE GRAVEL, AND ARE SUBANGULAR TO ANGULAR.
110		+++++OVV	12		
110-120'					1/2" SUBANGULAR CUTTINGS. CLAY ZONE AT 115'.
115		=====++V.	15		
120		+++++■VQ	9		
120-195'					CUTTING SIZE PREDOMINANTLY COARSE SAND TO SMALL PEBBLE GRAVEL. LIMESTONE IS THE PREDOMINANT CLAST. CLASTS ARE PRIMARILY SUBANGULAR TO ANGULAR. SOME CALICHE FROM 120'-130'.
		+++++■VV	15		

WB-8 LITHOLOGIC LOG
(Continued)

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)
130		+++++//V	12		130-165' CALICHE COATINGS ON SOME CLASTS.
135		+++++//V	11		
140		+++++//V	13		
145		+++++//V	15		
150		+++++//V=	11		
155		+++++//V	11		
160		+++++//V	13		
165		+++++//V	13		
170		+++++//VV	13		
175		+++++//V	13		175-195' CALICHE COATINGS ON SOME CLASTS.
180		+++++//V	15		
185		+++++//V	25		
190		+++++V//V	40		
		VVVVVVVVVVVV+	44		

WB-8 LITHOLOGIC LOG
(Continued)

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)
195	< >				<p>195-447' OREGON ANDESITE: GRAYISH OLIVE GREEN (5 GY 3/2) TO GRAYISH GREEN (10 GY 5/2), DUSKY BLUE (5 PB 3/2) TO VERY DUSKY RED PURPLE (5 RP 2/2), AND DARK GREENISH GRAY (5 GY 4/1) CUTTINGS RANGE IN SIZE FROM ROCK FLOUR TO OVER 1/2" DIAMETER PEBBLES. CUTTINGS ARE SUBANGULAR TO ANGULAR. FRACTURES PRESENT BUT PREDOMINANTLY FILLED WITH CALCITE AND OXIDIZED MINERALIZATION.</p> <p>195-200' CUTTING SIZES ARE COARSE TO VERY COARSE SAND. SOME CALCITE PRESENT ON FRACTURE SURFACES.</p> <p>200-205' CUTTINGS GROUND PRIMARILY INTO ROCK FLOUR. CUTTINGS WHICH COULD BE WASHED ARE COARSE SAND SIZE TO SMALL PEBBLE GRAVEL. 40 PERCENT OF ANDESITE IS GREENISH IN COLOR.</p> <p>205-240' CUTTING SIZES RANGE FROM COARSE SAND TO SMALL PEBBLES. SOME CALCITE PRESENT. SOME GREENISH ANDESITE. MANY LIGHT GREEN CUTTINGS FROM 220"-240".</p> <p>240-245' INCREASE IN CUTTING SIZE UP TO 1/2 INCH DIAMETER. NOW PURPLE.</p> <p>245-270' CUTTING SIZE PRIMARILY COARSE SAND TO SMALL PEBBLE GRAVEL, PURPLE.</p>
200	< >		58		
205	< >		26		
210	< >			AIR HAMMER BEGINS	
215	< >		5		
220	< >		4		
225	< >		5		
230	< >		5		
235	< >		6		
240	< >		6		
245	< >		8		
250	< >		10		
255	< >		8		
260	< >		8		
	< >		8		

WB-8 LITHOLOGIC LOG
(Continued)

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)	
270	∧ ∨ ∟		8		270-300' COLOR OF CUTTINGS CHANGING TO GREEN AGAIN. OXIDATION AND CALCITE IN CRACKS. VERY GREEN IN COLOR AT 295'.	
275	∧ ∨ ∟		8			
280	∧ ∨ ∟		7			
285	∧ ∨ ∟		9			
290	∧ ∨ ∟		7			
295	∧ ∨ ∟		9			
300	∧ ∨ ∟		9			300-395' GREEN ANDESITE CUTTINGS, PRIMARILY COARSE SAND SIZE TO SMALL PEBBLE GRAVEL.
305	∧ ∨ ∟		7			
310	∧ ∨ ∟		6			
315	∧ ∨ ∟		8			
320	∧ ∨ ∟		6			
325	∧ ∨ ∟		5			
330	∧ ∨ ∟		5			
	∧ ∨ ∟		6			

**WB-8 LITHOLOGIC LOG
(Continued)**

DEPTH	LITH.	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)
340			6		
345			7		
350			7		
355			7		
360			7		
365			7		
370			7		
375			7		
380			6		
385			10		
390			9		
395			9		395-405' PURPLE ANGULAR GREEN ANDESITE.
400			11		
			7		

