USGS 1142

WOODWARD-CLYDE CONSULTANTS
ROCKY MOUNTAIN REGION

DRILLING LOG

HOLE NO. **TH-462**

SHEET 1 of 2

PROJECT NO.: 21010-10185
PROJECT NAME: CHARACTERIZATION OF ROCK UNDERDRAIN MATERIAL

LOCATION: N 642,900 E 1,274,300
NW-SE-32-5S-95W

ELEVATION: (MSL OR TBM) ≈8125 MSL

DATE DRILLED — STARTED: 9-9-82 — COMPLETED: 9-10-82

DRILL MANUFACTURER AND MODEL NUMBER: LONGYEAR 44

DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED - - - DEGREES TO VERTICAL

SIZE AND TYPE OF BIT(S): 3.93" DIAMETER ROTARY ROCK BIT FROM 0' TO 9'
NX DIAMOND CORING BIT FROM 9' TO 140.5'

DRILLING FLUID: AIR MIST

CASING: 3.5" OD
DEPTH: 9 FEET

PIEZOMETER: NONE
DEPTH:

WATER LEVEL — DEPTH: NOT ENCOUNTERED — DATE: — DEPTH: — DATE: — DEPTH: — DATE:

ELEVATION	DEPTH	SYMBOL	CLASSIFICATION AND PHYSICAL CONDITION	POINT LOAD INDEX (PSI)	CORE RECOV. (%)	CORE RECOV. (FT.)	CORE RQD	CORE SHORTEST	CORE AVERAGE	CORE LONGEST	WEATHERING	HARDNESS	JOINTS	BEDDING	NOTES (Ground water level, water return, drilling fluid, drilling characteristics, etc.)	WATER TESTS	DEPTH
8125.0	0		SILT, VERY SANDY, GRAVELLY TO VERY GRAVELLY, BROWN (ML, SM)		-	-	-	-	-	-	-	-	-	-			0
					C	U	T	T	I	N	G	S	S	2-3			
			SANDSTONE, POORLY CEMENTED, LOCALLY MODERATELY WELL CEMENTED (15%), VERY LOW STRENGTH ROCK, LOCALLY MEDIUM STRENGTH ROCK, SLIGHTLY TO MODERATELY WEATHERED, GENERALLY THICK BEDDED (8" TO 3'), LOCALLY CLOSELY BEDDED (1" TO 4"), CLOSELY TO MODERATELY CLOSELY JOINTED (2" TO 3'), JOINTS ARE ROUGH, BROWN OR BUFF, FINE GRAINED, LOCALLY CALCAREOUS (UINTA FORMATION)	386	60	2.1	26	<.1	.2	.4	S	2-3	90° 70° 15°	NEAR HORIZ.			10
				<77 448	102	10.2	76	.1	.6	1.1	S-M	2-3	60° 30° 45° 30°	15° TO NEAR HORIZ.			
				<77													
				316 234	100	7.0	73	<.1	.6	0.9	S-M	2-3	60° 80° 45° 20° 60°	3°			20
				156													
			23.3 TO 23.6 VERY FRACTURED	<77	100	3.0	67	.1	0.3	0.4	S-M	2-3	15°	3° NAR/EY			30
			24.0 TO 30 MINOR INTERBEDS OF MARLSTONE AND SILTSTONE										30°				
			42.2 THIN CLAY SEAM	<77	98	9.8	71	<.1	0.7	1.5	S-M	2-3	15°	3° TO 15° NAR/EY			40
			54.7 TO 54.9 VERY FRACTURED		99	9.9	84	.1	0.7	1.6	S-M	2-3	40° 30° 60°	3°			50
				<77	100	10	88	<.1	0.6	1.5	S-M	2-3	45° 60°	3° TO 4°			60
					100	10	85	.1	2.0	3.8	U-M	2-3	60° 80°	5°			
			SILTSTONE WITH INTERBEDDED SANDSTONE, POORLY CEMENTED, VERY LOW STRENGTH ROCK, SLIGHTLY TO MODERATELY WEATHERED, LAMINATED TO CLOSELY BEDDED, WIDELY JOINTED, BROWN OR BUFF, MINOR INTERBEDS OF MARLSTONE (UINTA FORMATION).		98	9.8	89	<.1	1.1	1.3	U-M	2-3	70° 80° 15° 30°	4°			70
				231													80
			SANDSTONE WITH INTERBEDDED SILTSTONE, SAME AS ABOVE BUT MODERATELY CLOSELY JOINTED (UINTA FORMATION). 81.4 TO 81.7 VERY FRACTURED	<77	100	10	94	0.2	1.6	3.1	U-M	2-3	50° 70°	3° TO 25°			90
				<77													
			SILTSTONE WITH INTERBEDDED SANDSTONE, AS ABOVE BUT SLIGHTLY WEATHERED TO UNWEATHERED WITH WIDELY SPACED JOINTS, GREY, WITH MINOR INTERBEDS OF MARLSTONE (UINTA FORMATION). 98.1 TO 98.4 INTERBED OF LIMESTONE, MEDIUM STRENGTH, GREY	630 383	98	9.8	90	0.1	3.0	3.6	U-M	2-3	NONE	3°			100
				271	102	10.2	97	0.1	1.0	3.6	U-S	3	70° 60°	3°			110

CORING TIME

INTERVAL (feet)	TIME (min)	RATE (ft/min)
9 -12.5	30	.12
12.5-22.5	24	.42
22.5-29.5	22	.32
29.5-32.5	9.75	.31
32.5-42.5	24	.42
42.5-52.5	23	.43
52.5-62.5	22.5	.42
62.5-72.5	21	.48
72.5-82.5	16	.63
82.5-92.5	15	.67
92.5-102.5	16	.63
102.5-112.5	17	.59
112.5-122.5	17	.59
122.5-132.5	17	.59
132.5-140.5	15	.53

LEGEND

WEATHERING
U - UNWEATHERED; FRESH, NO SIGNS OF WEATHERING.
S - SLIGHTLY WEATHERED; MINERAL ALTERATION SLIGHT TO NONE, SOME IRON STAINING ON JOINTS.
M - MODERATELY WEATHERED; UP TO 1/3 OF ROCK FORMING MINERALS ALTERED, SIGNIFICANT REDUCTION IN STRENGTH.
H - HIGHLY WEATHERED, MORE THAN 1/3 OF ROCK FORMING MINERALS ALTERED, STRENGTH GREATLY REDUCED.

HARDNESS
1 - CAN BE GOUGED BY FINGERNAIL, CORE CAN BE MOLDED IN HAND.
2 - EASILY SCRATCHED BY FINGERNAIL, CORE CAN BE BROKEN BY HAND.
3 - EASILY SCRATCHED TO GOUGED BY KNIFE BLADE, SCRATCHED WITH DIFFICULTY BY FINGERNAIL, EASILY BROKEN BY HAMMER BLOW.
4 - SCRATCHED BY KNIFE BLADE, BREAKS WITH MODERATE HAMMER BLOW.
5 - SCRATCHED WITH DIFFICULTY BY KNIFE BLADE, REQUIRES STRONG HAMMER BLOW TO BREAK, RINGS WITH BLOW.

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	110							SEE	OTHER	SHEET					RQD		110
			CONTINUED FROM SHEET 1 OF 1.		100	10	97	.1	2.5	5.3	U	3	NONE	2"-4"	THE SUM OF THE PIECES OF SOUND CORE OVER 4" LONG DIVIDED BY THE RUN LENGTH EXPRESSED AS PERCENTAGE.		
	120			315 327													120
			SANDSTONE, MODERATELY CEMENTED, LOW STRENGTH ROCK, UNWEATHERED, VERY THICK BEDDED, WIDELY JOINTED, FINE GRAINED, GREY (UINTA FORMATION).		100	10	94	.2	1	2	U	3	50° 70° 80°	2"-4"	GRAVEL, VERY SANDY, VERY SILTY TO A SILT, GRAVELLY TO VERY GRAVELLY, VERY SANDY (GM, SM, ML).		
	130																130
			SILTSTONE WITH INTERBEDDED MARLSTONE AND SANDSTONE, AS ABOVE (UINTA FORMATION).		100	8	100	1.8	2.5	3.2	U	3	NONE	2"-15"	SANDSTONE, PURE OR CONTAINING A MINOR PERCENTAGE OF VERY THIN SCATTERED INTERBEDS OF SILTSTONE OR MARLSTONE.		
	140																140

MARLSTONE, PURE OR CONTAINING A MINOR PERCENTAGE OF VERY THIN SCATTERED INTERBEDS OF SILTSTONE OR SANDSTONE.

SILTSTONE, PURE OR CONTAINING A MINOR PERCENTAGE OF VERY THIN SCATTERED INTERBEDS OF MARLSTONE.

SILTSTONE WITH THINLY INTERBEDDED SANDSTONE, SILTSTONE COMPOSES 50% TO 90% OF SECTION.

MARLSTONE INTERBEDS, SCATTERED, GENERALLY THIN AND COMPOSES 10% TO 50% OF SECTION.

VUGS, SCATTERED, OVOID, 1/8" TO 1" ACROSS.