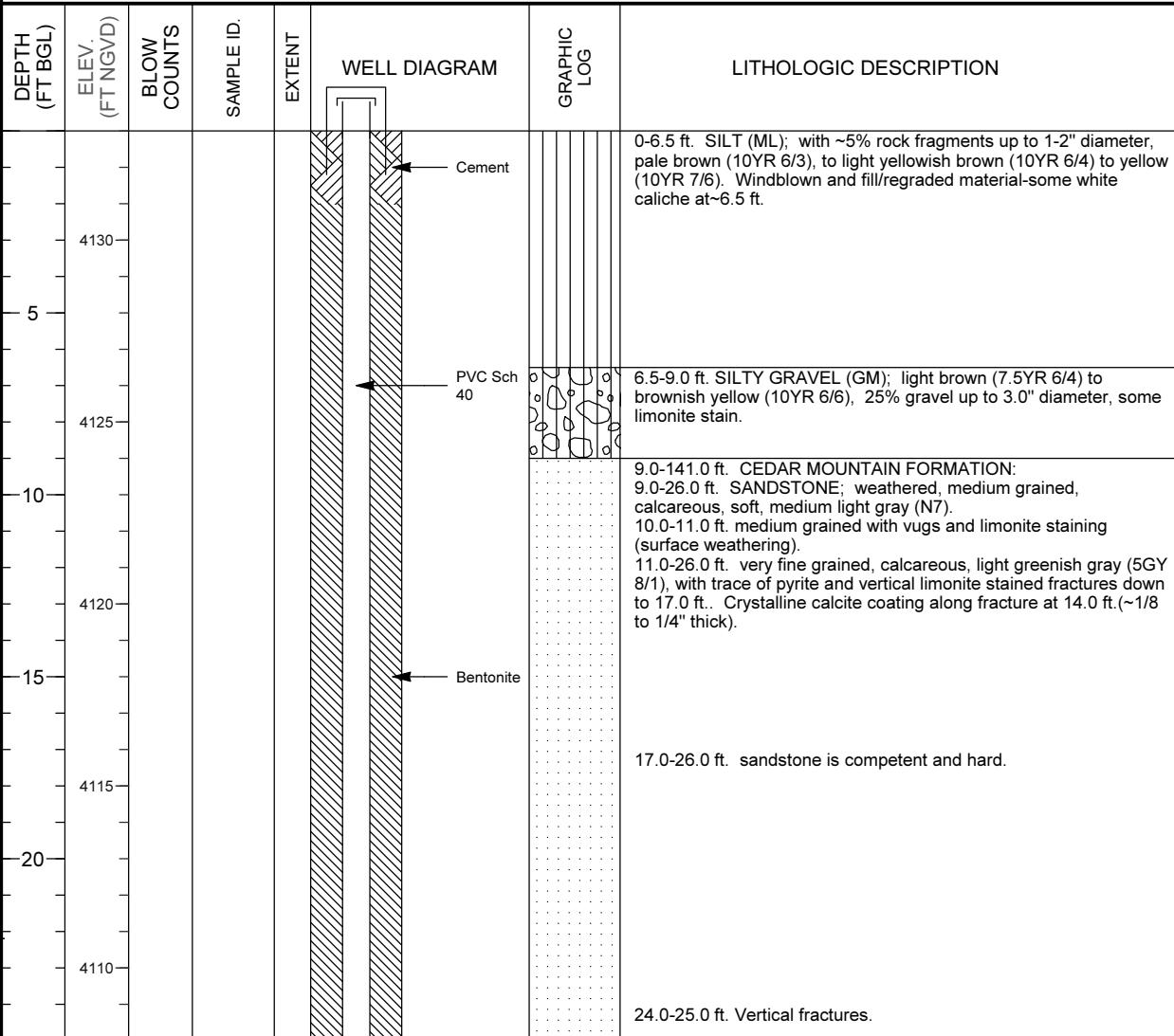


MONITORING WELL COMPLETION LOG GRN01-0185

PROJECT <u>UMTRA GROUND WATER</u>	NORTH COORD. (FT) <u>237342.13</u>	DATE DRILLED <u>06/24/2002 to 06/28/2002</u>
LOCATION <u>GREEN RIVER, UT</u>	EAST COORD. (FT) <u>2386693.70</u>	SURFACE ELEV. (FT NGVD) <u>4133.00</u>
SITE <u>GREEN RIVER</u>	HOLE DEPTH (FT) <u>144.00</u>	TOP OF CASING (FT) <u>4135.46</u>
WELL NUMBER <u>0185</u>	WELL DEPTH (FT) <u>141.00</u>	MEAS. PT. ELEV. (FT) <u>4135.46</u>

	WELL INSTALLATION	INTERVAL (FT)	
SURFACE CASING:			DRILLING METHOD <u>ROTASONIC</u>
BLANK CASING:	4 in. PVC Sch 40	-2.46 to 131.0	SAMPLING METHOD <u>ROTASONIC CORE</u>
WELL SCREEN:	4 in. 0.02 Slotted PVC	131.0 to 141.0	DATE DEVELOPED _____
SUMP/END CAP:			WATER LEVEL (FT BGS) _____
SURFACE SEAL:	Cement	0.0 to 2.0	LOGGED BY <u>Goodknight, C.</u>
GROUT:	Bentonite	2.0 to 118.0	REMARKS <u>Saved core from screened interval from</u>
SEAL:	Bentonite Chips	118.0 to 128.0	<u>130.0 ft. to 144.0 ft. depth in lower</u>
UPPER PACK:			<u>sandstone/conglomerate of Cedar Mtn Fm.</u>
LOWER PACK:	10-20 Silica Sand	128.0 to 140.0	



MONITORING WELL COMPLETION LOG GRN01-0185

PROJECT UMTRA GROUND WATER **WELL NUMBER** 0185
SITE GREEN RIVER **DATES DRILLED** 06/24/2002 to 06/28/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
							25.0-26.0 ft. sandstone is crossbedded and has black chert clasts up to 1/2" diameter. 26.0-28.5 ft. CONGLOMERATE; gray chert clasts (up to 3/4" diameter), calcareous, medium light gray (N6), vertical fracture 26.0 to 27.0 ft., crossbedded
30	4105						28.5-33.0 ft. SANDSTONE; fine grained, calcareous, greenish gray (5GY 6/1), below 30.0 ft. to light gray (N7) to very light gray (N8). Vertical fractures and crossbedded. Conglomerate layer ~6.0" thick at 32.0 ft., clasts up to 1/2" diameter, trace of pyrite.
35	4100						33.0-40.0 ft. CLAYSTONE; calcareous, pale olive (10Y 6/2), with limonite at 33.0-34.0 ft. @34.0 ft. color changes to greenish gray (5GY 6/1) and with limonite stain on fractures, soft, claystone below 34.0 ft. - mainly noncalcareous.
	4095						@38.0 ft claystone is noncalcareous with large (several inches diameter) calcareous nodules with trace of pyrite.
40	4090						40.0-43.0 ft. SHALE; noncalcareous, dark greenish gray (5G 4/1).
45	4085						43.0-48.0 ft. CLAYSTONE; calcareous, greenish gray (5GY 6/1), with calcareous nodules that are micritic, medium light gray (N6) and have some limonite stain along fractures.
50	4080						48.0-53.0 ft. SHALE; 48.0-49.0 ft. hard shale, brittle, greenish gray (5GY 6/1 and 5G 6/1), high specific gravity, trace of pyrite (lot of disseminated sulfides), some limonite, fractured, calcareous. 49.0-50.0 ft. softer silty shale. 50.0-52.0 ft. soft, light gray (N7), calcareous, with few scattered nodules.
55							52.0-53.0 ft. hard shale, brittle, vertical fractures with/limonite and calcite coatings, dark greenish gray (5G 4/1). 53.0-57.0 ft. SILTY SHALE; alternating hard to soft, calcareous, limonite along fractures, medium light gray (N6). Some dark greenish gray (5G 4/1). Only slightly to noncalcareous @56.0 ft.

MONITORING WELL COMPLETION LOG GRN01-0185

PROJECT <u>UMTRA GROUND WATER</u>	WELL NUMBER <u>0185</u>
SITE <u>GREEN RIVER</u>	DATES DRILLED <u>06/24/2002 to 06/28/2002</u>

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
	4075				<p style="text-align: center;">PVC Sch 40</p> <p style="text-align: center;">Bentonite</p>	[Pattern]	57.0-60.5 ft. SILTSTONE; hard, noncalcareous, but calcite is along fractures, generally light gray (N7). Limonite also along fractures
60				[Pattern]		60.5-63.0 ft. SILTY SHALE; soft, medium light gray (N6), noncalcareous.	
	4070			[Pattern]		63.0-68.5 ft. SILTSTONE; shaley, noncalcareous, greenish gray (5G 6/1), trace of pyrite, vertical fractures at 64.0 and 67.0 ft.	
65				[Pattern]		68.5-70.0 ft. CLAYSTONE; soft.	
	4065			[Pattern]		70.0-71.0 ft. SHALE; noncalcareous, greenish gray (5G 6/1), interbedded with soft claystone.	
70				[Pattern]		71.0-74.0 ft. SILTSTONE; mostly medium gray (N5), hard, noncalcareous, vertical fractures at 73.0 and 74.0 ft. with pyrite.	
	4060			[Pattern]		74.0-76.5 ft. SHALE; calcareous, medium gray (N5) and scattered medium gray calcareous, micritic nodules, trace of pyrite.	
75				[Pattern]		76.5-80.0 ft. CLAYSTONE; calcareous, soft, brownish gray (5YR 4/1).	
	4055			[Pattern]		80.0-82.0 ft. SHALE; noncalcareous, grayish red (5YR 4/2), becoming silty and hard. Shale becomes soft @81.0 ft.	
80				[Pattern]		82.0-84.0 ft. SILTY SHALE; alternating beds of silty shale - noncalcareous, medium gray (N5), and siltstone- grayish red (5YR 4/2).	
	4050			[Pattern]	84.0-89.0 ft. SILTSTONE; calcareous, brownish gray (5YR 4/1), with vugs and small pellets-up to 1/2" diameter - (burrows?) and calcareous nodules. Becoming mottled @~87.0 ft. Harder and more competent at 89.0 ft.		
85				[Pattern]			
	4045			[Pattern]			

MONITORING WELL COMPLETION LOG GRN01-0185

PROJECT UMTRA GROUND WATER	WELL NUMBER 0185
SITE GREEN RIVER	DATES DRILLED 06/24/2002 to 06/28/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
90							89.0-92.0 ft. SANDSTONE; very fine grained, hard, calcareous, light greenish gray (5GY 8/1) to greenish gray (5GY 6/1). Mottled with lighter gray blobs, trace pyrite.
	4040						92.0-97.0 ft. MUDSTONE; mudstone and shale, soft, noncalcareous, grayish red (5R 4/2).
95							97.0-100.5 ft. SILTY SHALE; soft, calcareous, mottled grayish red (5R 4/2) and medium light gray (N6). @98.0 ft. silty shale becomes hard, fractured, calcareous, mottled, grayish red (5R 4/2) to medium light gray (N6).
	4035						100.5-102.5 ft. CLAYSTONE; calcareous, pale brown (5YR 5/2), soft.
100							102.5-103 ft. SILTSTONE; with micritic calcareous nodules (up to 2.0" diameter), greenish gray.
	4030						103.0-103.5 ft. SHALE; mottled, hard, calcareous, greenish gray (5GY 6/1) to brownish gray (5YR 4/1)
105							103.5-104.0 ft. CLAYSTONE; calcareous, soft, grayish red (5R 4/2).
	4025						104.5-107.0 ft. SILTSTONE; siltstone and shale interbeds, medium light gray (N6), trace of pyrite.
110							107.0-109.0 ft. SILTSTONE; mottled with calcite nodules, calcareous, greenish gray (5GY 6/1) to light brownish gray (5YR 6/1), hard.
	4020						109.0-112.0 ft. CLAYSTONE; 109.0-111.0 ft. claystone and shale interbeds, soft, grayish red (5R 6/2).
115							111.0-112.0 ft. mottled, calcareous, brownish gray (5YR 4/1) to greenish gray (5GY 6/1).
	4015						112.0-117.0 ft. SILTSTONE; 112.0-113.0 ft. mottled, brownish gray (5YR 4/1) to greenish gray (5GY 6/1), slightly calcareous.
120							113.0-117.0 ft. siltstone to very fine grained sandstone, vertical fractures, calcareous. Between 116.0 to 117.0 ft. subangular chert fragments to 1.0" diameter, some vug porosity.
	4015						117.0-122.0 ft. SANDSTONE; 117.0-120.0 ft. grain size is coarse to fine, some crossbedding, calcareous-well cemented, hard, medium light gray (N6).
							120.0-122.0 ft. very fine grained, mottled, calcareous, with some

MONITORING WELL COMPLETION LOG GRN01-0185

PROJECT <u>UMTRA GROUND WATER</u>	WELL NUMBER <u>0185</u>
SITE <u>GREEN RIVER</u>	DATES DRILLED <u>06/24/2002 to 06/28/2002</u>

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
	4010						septarian-like nodules, light brownish gray (5YR 6/1) to medium light gray (N6), some vugs with trace of pyrite. 122.0-126.0 ft. INTERBEDS OF SILTSTONE AND CLAYSTONE; soft, calcareous, mottled, pale brown (5YR 5/2) to medium light gray (N6).
-125							126.0-132.5 ft. SILTSTONE; 126.0-131.5 ft. soft, noncalcareous, greenish gray (5GY 6/1).
	4005						131.5-132.5 ft. hard, light gray (N7), noncalcareous, trace pyrite.
-130							132.5-141.0 ft SANDSTONE; 132.5-133.5 ft. hard, fine grained, slightly calcareous, light greenish gray (5GY 7/1). 133.5-138.0 ft. medium grained, noncalcareous, increasing conglomeratic layers below with clasts of black and white chert up to 1.0" diameter. Overall rock color is light gray (N7) to medium light gray (N6). Lots of intergranular and vug porosity below 133.0 ft.
-135							138.0-139.0 ft. fine to medium grained, light gray (N7)
	3995						139.0-141.0 ft. sandstone and conglomerate with pebbles.
-140							141.0-144.0 ft. MORRISON FORMATION, BRUSHY BASIN MEMBER; 141.0-143.3 ft. MUDSTONE; gray-green.
	3990						143.3-144.0 ft. mottled zone in mudstone, then into dark red brown mudstone at TD.
-145						Total Depth 144.0 ft.	
	3985						
-150							