TEI-869 OPEN FILE 1967

This report is preliminary and her and being a decided or reviewed by compress with a Compress. Survey standards and noment stare

		.,	Light olive gray (5 % 6/1) Pale yellowish brown (10 % Moderate yellowish brown (10 % Dark yellowish brown (10 % Dassy yellowish brown (10 % Dassy yellowish brown (10 % Dask gray (N-4) Dark gray (N-4)	YR 6/2) (10 YR 5/4) YR 4/2)				
CORE INTERVAL	NUMBER AND DIP OF FRACTURES (DIP INCREMENTS OF IC')	FRACTURE FREQUENCY (FRACTURES PER FOOT)	BROKEN CORE		INDEX NUMBER idex number = fracture	FRACTURE FILLING % COATING TOTAL FRACTURES	LITHOLOGIC DESCRIPTION Below 985 feet "shole" refers to kerogenous maristone (oil shole)	
	9060 ⁷⁰⁶⁰				frequency + O.1 broken care + O.1 core loss			
	*Fractures between 0° and 20° represent bedding plane fractures and partings. This group includes natural fractures and induced fractures from drilling stress 100 FRACTURES	I FRACTURE/FOOT	PERCENT 0 50 100	PERCENT O 50 100				
			то	TAL CORE	<i>/</i>			
TOTAL CORE 770-2600	1184	77.; o		2 8	3 4	Carbonate 3% Asphalt (7) -1% iron oxide -1%		Green River Formation
				-				
770-1020 A				ERING SUBUNITS		Carbonate -<1%		Evacuation Creek Member
1020-1120 B		116	ji9 3	520	60	Asphait(?)-4% Pyrite-<1% Carbonatest%		Parachute Greek Member Contoct at 985 feet
1120~1595 C					•	Asphalt(?) %</td <td></td> <td></td>		
		20130) i9 5	34 4	6.5	Carbonate 10 % Asphalt(?)<1% Iron oxide<1%		
1595-1745 D		,5 5	71.5	356.5	15 O	Carbonate - 3% Iron oxide - 6%		
17 4 5-2545 E		o 5	05	to i	0 6			
25 4 5-2600 F	"DISCS"	37	108	0.0	4.8			
770-795	IO FRACTURES (SCALE CHANGE)			COOT LOGGING UNITS			Shele; yellowish gray to pale yellowish brown; leminar bedded. Dip of beds range from 0° to 10°.	•
		117	0.0	1210	3 8			
795-820		4 5	7/72210	227. 223.0	8.9		Shale; yellowish gray to pele yellowish brown; contains stringers and blobs (4 mm-8 mm of carbonaceous material; dip of bods averages 6°.	
820-845							Similar to previous interval.	
845-870	K .	7/////3/15	77//2230	29 0	6,7		Similar to interval 795'-820' except for pale	
		27/7/2/2/2329	<i>7.7.7.</i> ∕2 30 0	20.0	7.9	Calcite-5%	yellowish brown sandstome interval between 868' and 870'; dip of beds rungesbetween 2° and 9°.	
	7							
870-895		7//////////////////////////////////////	240	34 0	3.2		Sandstone; pale yellowieh brown; contains carbon blebs (4 mm-8 mm); abundant tight fractures; dip of beda ranges between 10 and 160.	
				1				
895-920		<u>///////</u> 2.1	ZZ140		4.9		Sandstone; pale yellowish brown between 895'-896'; shale, yellowish brown between 913'-915'; shale, moderately yellowish brown between 915'-920'; contains carbon blebs (4 mm-8 mm); dip of beds ranger between 0° and 10°.	
920-945				5 47			Similar to provious shale interval: drag folding	
		7///213	7///2270	27.0	6.7		of beds at 935'; dip of beds ranges between 20 and 60.	
945-970		//////31.7	7/2 17.0	0.62[////	5.3		Shale; pale yellowish brown to moderately yellowish brown; slumping and drag folding of beds; dip of beds ranges between 3° and 10°.	
970-995		7/////16	7//// ₆ 31 O	7///// 36.0	8.3		Shale; transitional barren to oil shale between 970'-985'; shale; continuous oil shale; yellowish gray to pale yellowish brown; slumping of bade batween 970'-975'; dip of bads average; 3°.	Evocuation Creek Member 985 feet
995-1020		7////// 1 6	//// <u>}</u> 32 0	ZZ316 O	6.4	Carbonaceous (asphalt?) 24% Pyrite=6%	Shale; yellowish gray to pale yellowish brown between 995'-1019'; dark yellowish brown between 1019'-1020'; slumping and drag folding between 997'-1010'; dip of beds ranges between 0° and 8°.	Parachute Greek Member (continuous oil shale)
1020-1045	40	//////// 2 0	00	32.0	2.2		Shale; dark yellowish brown; contains inclusions with beds doming over inclusions; hairline fractures with carbonaccous fillings; vuggy; dip of beds averages 1°; care tends to part	
1045-1070	49	Titli III 25.	0.0	310	26		parallel to inclusions. Similar to previous interval; dip of beds averages 2°, locally alumping of beds dipsat 30° to 54°.	
1070-1095							Ash-fall tuff; mederately yellowish brown from 1082'-1084.3': shale: pale yellowish brown to	
1095-1120		7.7.7.1.2 .	0.0	350	1.4	Carbonaceaus (osphalt ?)	dark gray; drag folding of beds with occasional offset; dip of beds ranges 5° to 10° and locally as much as 20°. Shale; pale yellowish brown to dark gray;	
		7///20	<u>₹</u> ₹}16 0]20	2 8	Carbonate-5%	Mahogany marker at 1098; dip of beds ranges between 0° and 8°; core fractured into 3" discs between 1106' to 1110'. Shale; dark gray; carbonata crystals present.	
1120-1145	12	27/1/1///23	∑ }90	2 3 8 .0	4.0	Carbonate (yellaw-gray) - 15% in fractures >30° dip	PARTIES.	
1145-1170	K	///////32 2	∑31 2. 0	7// <u>]</u> 20 0	5.4	Carbanate - 25% Asphalt ?- 2%	Shale; pale yellowish brown to dark yellowish brown; intermittent wavy bedding; vuggy; vugs as much as 25 mm (1 inch) filled with carbonate; dip of beds average 2°; locally dips as much as 13°.	
							Shale: alternating pale yellowish brown to dark	
1170-1195		1.8	∑∑∑25 O	//// 27 .0	6.7	Carbonate-9%	Shale; alternating pair yellowsh brown to dark yellowish brown; dip of beds averages 2°; broken core due to intersection of high angle fractures with each other (60° to 90° fractures).	
1195-1220		2//////22	ZZZ 18.0	//// <u>/</u> 3330	7.3		Similar to previous interval; core loss seems to occur in senes of high fracture density.	
		(1) 1/1/18ee	222/6.0	777773930	,,3			
1220-1245	*	77//////2 5	2////2280	7//////////////////////////////////////	11.0		Shale; light olive gray to dark gray (N-3); dip of beds averages 5°; rock is lighter weight between 1231' and 1234'.	
1245-1270	Broken	Broken care precludes fracture measurement	//////////////////////////////////////	//////////////////////////////////////	17.6		Shale; dark gray; interval of high core loss and broken rock.	
1270-1295	(discs) 33	//////////////////////////////////////	7////////>}55.0	540	14.2		Shale; dark yellowish brown; wavy bedding and vuggy; core broken into 2" discs between 1282' and 1287'; dip of disc fractures range-between 0° and 4°.	
1295-1320		///////////////////////////////////////	32 0	37.0	8 4	Carbonate-29%	Similar to previous interval; dip of beds averages 5°.	
1320-1345		///// <u>}</u> 1 6	⊠ 11,0	 13.0	4.0	Carbonate - 3%	Similar to interval 1270'-1295'; dip of beds ranges between 0° and 3°.	
1345-1370		7/////13	24.0	25.0	6.2		Shale; dark yellowish brown; vugs up to 25 mm (1 inch).	
1370-1395							Shale; dusky yellowish brown; vugs up to 25 mm; dip of beds averages 20.	
3 95 -142C		//////////////////////////////////////	≥ 13.0	22.0	5.4	Carbonate - 3%	Similar to previous interval; drag folding of bods; core loss seems to be associates with	
1420-1445	*	7777731.7	⊠ 70	46.0	7.0	Carbonate - 4%	irregular bedding. Shale: pale yellowish brown between 1420' and	
	R	7////12	Z/Z}21 O	2 14.0	4.7	Carbanate - 4% Iran axide - 4%	1430'; sendstone, pale yellowish brown between 1435' and 1445'; sandstone is fine grained and thick bedded; shake is vuggy; slumping of beds occurs in shale; core loss seems to be associated with shake-mandstone contact, and vugs in shale; sandstone is porous.	
1445-1470		<u> </u>	27//230	////// 380	7.7	Carbanate - 24% Asphal1 - 4%	Shale; alternating dusky yellowish brown to dark yellowish brown between 1465' and 1463', 1465' and 1470'; shale; sandy, dark yellowish brown between 1463' and 1465'; vuggy; core loss seems to be associated with vugs and irregular bedding.	
1470-1495		7777	7.0	7777) 25 2	4.2	Carbonate - 20%	Shale, dark yellowish brown, competent.	
1495-1520		7///2	25 0	260	4.2	Iran axide~5%	Shale, dark yellowish brown between 1495' and	
		1 4	≥313.0	7///// 38 0	6.5		1497'; shale, silty, and siltetome, moderately yellowish brown to pale yellowish brown between 1497' and 1520'; vuggy near base of interval; core loss associated with silty shale and vugs.	
1520-1545		77.77.732 o	⊘ 10 2	ZZ]140	4.4	Carbonate - 40%	Shale; dusky yellowish brows; non-calcareous; dip of beds range between 0° and 2° .	
1545-1570	TE	/////////2 6	₹///2≥26 0	2///////247.0	9.9	Asphalt?-3% Carbonate - 3% Iron oxide - 3%	Shale w/interbedded silty shale; dusky yellowish brown to dark yellowish brown; vuggy easr base of interval; breccis or shear some(?); core loss associated with this some.	
1570-1595		<u>/////</u> 1 5	7////380	7/////37.0	87		Shale; medium dark gray to dark yellowish brown; bedding indistinct; dip of beds ranges between 0° and 5°; breccia or shear zome(?).	
1595-1620		7/////31.5	//////////////////////////////////////	///////////////////////////////////////	18.5	Carbanate-18% Iran axide-18%	Shals; medium dark gray to dark yellowish brown; bedding indistinct; dip of beds ranges between 4° and 8°; entire interval broken, breccia or chast mone(7).	
1620-1645		⊘ 05	7//////////////////////////////////////	///////seo	17.1		Shale; medium dark gray to dark yellowish brown; bedding indistinct; dip of beds ranges between 1° and 5°; layers of unidentified carbonate, some iron staining; one slickenside observed- at 1650; shear or breccia some(7).	
1645-1670		//// <u>/</u> /10	7//////////////////////////////////////	//////// <u>6</u> 70	17.1	Corbonate Iran oxide	Shals; medium dark gray to dark yellowish brown to dusky yellowish brown; bedding indistinct, dip of beds ranges between 1° and 7°.	
1670-1695		7////1.3	///////// 68 0	////// 59 0	16.0	Iran axide −15%	Shale; dark yellowish brown to medium dark gray; dip of beds averages 2°.	
1695-1720							Shale; medium dark gray to dark yellewish brown to dusky yellowish brown; bedding indistinct; dip of beds ranges between 0° and 4°.	
		/////\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7//////////////////////////////////////	////// 344 0	11.7	Carbonate-3%		
1720-1745	•	- - - - - - - - - - - - - - - - - - -	7//// 33.0	7////330	8.6	Iran axide-4% Carbonate-2%	Shale; medium dark gray te dark yellowish brown; interbedded white to light gray carbonate salt (Mahcolite)* as much as 12.7 cm (5 inches) thick; Mahcolite is about 30% of core in interval between 1738' and 1745'; base of poor recovery some is st 1737'; dip of beds ranges	
				1.4.			between 0°- 5°. *Selt identified by U.S.S.M., personal commun.	
							Shaln; dark yellowish brown; white to very light	
1745-1770		////// 1 6	00	0.0	1.6		Shale; dark yellowish brown; white to very light gray interbedded Hahcolita, as such as 12.7 cm (5 inches) thick in interval between 1745' and 1760'; salt is about 20% of interval; dip of beds rangus between 0° and 5°.	
							Shele; dusky yellowish brown; Mahcolite occurs	
1770-1795 1795-1820		2 7740.6	0.0	3.0	0.7		in vugs; 307 of fractures are bedding plane fractures; dip of beds range between 0 and 4 . Shale; dusky yellowish brown; competent, continuous core; bedding is indistinct; about 3/4 of fractures tend to be along nahcolite-	
1820-1845			00	00	0.6		3/4 of fractures tend to be elong nahcolite- shals interfaces; dip of beds ranges between 0° and 10°. Shale; dark yellowish brown; competent,	
1845-1870		⊘04	0.0	0.0	0.4		continuous core; abundant mahcolite; vuggy; about 3/4 of fractures tend to be along mahcolite-ahale inturfaces; dip of bede ranges between 0° and 2°. Male; inturbeded dusky yellowish brown and dark yellowish brown; competent, continuous core; vugs containing mahcolite are between	
1870-1895		Z/Z]08	0.0	0.0	0.8		1848.5' and 1851.5'; dip of beds ranges between 0° and 4°. Shale; dusky yellowish brown between 1879' and 1875'; dark yellowish brown with vugs containing nahoolite between 1875' and 1890'; dark yellowish brown without vugs batween	
1895-1920			00	0.0	0.4		dark yellowish brown without vugs between 1890' and 1895'; about 1/4 of fractures tend to be along nahcelite-shele interfaces; dip of beds ranges between 0° and 4°. Shele; dusky yellowish brown between 1895' and 1902'; dark yellowish brown between 1902' and	
1920-1945		⊠ 0 4					1920'; competent, continuous core as much as 4' umbrokem lengths; vugs containing nahcolite; about 3/4 of fractures tand to be along mahcolite-shaln interfaces; dip of beds ranges between 0' and 2'. Shale; dusky yellowish brown between 1920' and	
1920-19 45 19 45- 1970		Z30.6	0.0	0.0	0.6		1923'; dark yellowish brown between 1923' and 1934'; dusky yellowish brown between 1934' and 1937'; dark yellowish brown between 1937' and 1945'; competent, continuous core; sparse nabcolite associated with dark yellowish brown shale; dip of beds ranges between 1° and 3°.	
19 45-197 0 1970-1995		7/// 12	0.0	0.0	0.4		Shale; dusky yellowish brown to dark yellowish brown; competent, continuous core; vugs containing nahcolite; majority of fractures are bedding plane fractures; dip of beds ranges between 1° and 5°. Shale; dark yellowish brown between 1970' and 1977'; dusky yellowish	
1995-2020		//// L2	0.0	0.0	0.8		brown between 1977' and 1995'; competent, continuous core; about 9/10 of fractures in dusky yellowish brown interval tend to fracture along bedding plames; dip of bed ranges between 1° and 3°. Shale; dark yellowish brown between 1995' and 2010'; dusky yellowish brown between 2010' and 2013'; dark yellowish brown between 2013' and	
2020-2045		/// 08 //// 10	0.0	0.0	0.8		2020'; abundant nahcolite associated w/dark yellowish brown interval; sparse nahcolite associated w/dusky yellowish brown interval; competent, continuous core; between 1995' and 2008' fracturing tends talong nahcolite-shale interfaces; dip of beds ranges between 0° and 2°. Shale: dark vellowish brown between 2020' and 2023'; dusky yellowish	
2045-2070		ZZZ 08	0.0	0.0	0.8		brown between 2023' and 2025'; dark yellowish brown between 2025' and 2045'; competent, continuous core; nahcolite between 2029' and 2037'; majority of high angle fractures due to nahcolite splitting core; dip of beds ranges between 0° and 2°. Shale; dark yellowish brown between 2045' and 2053'; dusky yellowish brown between 2053' and 2056'; dark yellowish brown between 2053' and 2056'; dark yellowish brown between 2056' and	
2070- 2095		7////\	0.0	0.0	1.4		2058'; dusky yellowish brown between 2058' and 2062'; dark yellowish brown between 2062' and 2070'; competant, continuous core; no nahcolite between 2045' to 2047'; sparsa nahcolite associated w/dusky yellowish brown shale; dip of beds ranges between 0° and 2°. Shale; dark yellowish brown between 2070' and 2076'; dusky yellowish brown between 2076' and 2062'; dark yellowish brown between 2076' and 2062'; dark yellowish brown between 2076' and 2062';	
							brown between 2076' and 2082'; dark yellowish brown between 2092' and 2095'; competent, constitutions core; about 3/10 of fractures due to mahcolite splitting core; dip of beds ranges between 0° and 2°.	
20 9 5-2120		☑ 0.4	16.0	0.0	2.0		Shals; dark yellowish brown between 2095' and 2116'; dusky yellowish brown between 2116' and 2120'; competent, continuous core; sbundant nancolite between 2095' and 2113'; dip of beds ranges between 0° and 2°	
2120-2145		₹204	0.0	0.0	0.4		Shale, dark yellowish brown; shale, sandy, pale yellowish brown, 100 mm (4 inches) bed at 2131; competent, continuous core; nahcolite between 2118' and 2132'; all fractures tend to fracture along nahcolite-shale interfaces; dip of beds ranges between 1° and 4°. Shale; dark yellowish brown w/thin beds of pale yellowish brown;	
2145-2170		€ 306	0.0	0.0	06		Shale; dark yellowish brown w/thin beds of pale yellowish orown; competent, continuous core; shundant nahcolite; about 9/10 of fractures along nahcolite-shale interfaces; dip of beds ranges between 1° and 4°. Shale; dark yellowish brown to dusky yellowish brown between 2170' and	
2170-2195 2195-2220		222 07	0.0	0.0	0.7		2183'; dark yellowish brown between 2183' and 2195'; competent, continuous core; abundant nehocolite between 2173' and 2178', al83' and 2195'; sparse nehocolite between 2178' and 2183'; all fractures due to nehocolite splitting core; dip of beds ranges between 1º and 4º. Shale: dark yellowish brown between 2195' and 2204'; dark yellowish	
2195-2220		ZZ 07	0.0	0.0	0.5		brown to dusky yellowish brown between 2204' and 2210'; dusky yellowish brown between 2210' and 221b'; dusky yellowish brown between 2217' and 2220'; moderately yellowish brown between 2216' and 2217'; abundant mahcolite between 2195' and 2203'; sparse mancolite between 2195' and 2203'; sparse mancolite between 2203' and 2220'; competent, continuous cora; bedding indistinct; ail fractures dus to mahcolite splitting core; dip of	
2220-2245 2245-2270		205	0.0	0.0	0.5	_	beds ranges between 1° and 3°. Shale; dusky yellowish brows between 2220' and 2228'; moderately yellowish brows between 2230'; dark yellowish brown from 2230' to 2238'; dusky yellowish brown between 2228' and 2228'; aparse nabcolite between 2220' and 2228', 2237" and 2245'; nahcolite between 2228' and 2237'; competent, continuous core; about 6/10 of	
2270-2295		703	0.0	0.0	0.3		fractures along nehcolita-shele interfaces; dip of beds ranges between 1° and 3°. Shale; dark yellowish brown between 2245' and 2251'; dusky yellowish brown between 2251' and 2262'; dark yellowish brown between 2262' and 2270'; compercent, continuous core; nahcolite between 2264' and 2270'; sparse mehcolite throughout rest of interval; about 6/10 of fractures	
2295-2320		06	0.0	00	0.6		due to nehcolite splitting core; bedding indistinct; dip of beds ranges between 1° and 3°. Shels; dark yellowish brown, nahcolite between 2285' and 2294'; bedding is indistinct at top and distinct at bottom of interval; dip of beds ranges between 1° and 4°. Shals; dusky yellowish brown between 2295' and 2298'; dark yellowish	
2320-2345		2,505	F 80	00	3		brown to dusky yellowish brown between 2398' and 2320'; nahcolite between 2300' and 2302'; competent, continuous core; bedding generally distinct; dip of bede ranges between 0° and 1°; about 4/10 of fractures Shale; sandy, pale yellowish brown between 2320'; and 2325'; dark yellowish brown between 2323' and 2332'; dusky yellowish brown between	
2345-2370		∑ 64	0.0	00	0.4		2332' and 2335'; dark yellowish brown between 2335' and 2345'; badding generally distinct; dip of beds ranges between 0° and 2°; no nahcolite Shale; dark yellowish brown from 2345' to 2360'; dusky yellowish brown from 2360' to 2364'; dark yellowish brown between 2364' and 2370'; competent, continuous core; no nahcolite; bedding generally distinct; dip of beds ranges between 0° and 2°.	
2370-2395	No tractures	5.04	0.0	0.0	0.0		Shale; dark yellowish brown; about 8/10 of interval between 2377' and 2395' is mahcolite; all fractures along nshcolite-shale interfaces; bedding generally distinct; dip of beds ranges between 0° and 2°. Shale; dark yellowish brown; abundant nahcolite; nahcolite vugs between 2403' and 2404'; bedding generally distinct; dip of beds ranges	
2420-2445	No fractures		0.0	0.0	00		between 0° and 2°. Shele; dark yellowish brown; abundant nahcolite; nahcolite vugs between 2442' and 2443'; bedding generally distinct; dip of beds ranges between 0° and 2°.	

2445-2470

2470-2495

2495-2520

2520 2545

2545-2570

2570-2600 6

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32

Shale; dark yellowish brown between 2445' and 2465'; dusky yellowish brown between 2465' and 2470'; sperse nahcolite between 2453' and 2470' nahcolite vugs batween 2442' and 2463'; bedding indistinct to moderately distinct; dup of beds ranges between 00 and 20; competent, continuous core. shale, dusky yellowish brown between 2470' and 2480'; dark yellowish brown between 2465'; dusky yellowish brown between 2465'; dusky yellowish brown between 2460' and 2485'; competent, continuous core; bedding generally distinct; dip of beds ranges between 0° and 2°; no nahcolite.

Shele; dark yellowish brown to dusky yellowish brown between 2495' and 2503'; dark yellowish brown between 2503' smd 2516'; dark yellowish brown to dusky yellowish brown between 2516' and 2520'; competent, continuous core; abundant nehcolite between 2503' and 2509'; dip of beds ranges between 0° and 2°; fractures tend to part along mehcolitashale interfaces.

Shele; dusky yellowish brown; mo mencolite; competent, continuous core; dip of beds ranges between 0° and 2°.

Smale; dusky yellowish brown to dark yellowish brown; no nahcolite; competent, continuous core; dip of beds ranges between 0° and 2°; interval strongly broken into swerage 100 mm (4 inch) wide "discs" parallel to bedding planes; no nahcolite.

Shale; dark yellowish brown between 2570° and 2578°; dusky yellowish brown from 2578° to 2585°; dark yellowish brown batween 2585° and 2600.6° (T.D.); dip of beds ranges between 0° and 5°; no nebcolite; interval strongly broken dato average 100 mm (4 inch) wide "discs" parallel to bedding planes.