

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from William G. Helis Estate's Big Hollow No. 16-1 Well located  
SW1/4 SW1/4 (660 feet N/S and 660 feet E/W) of sec 16, T 14 N, R.112 W, Uinta County, Wyoming

Kelly bushing elevation 7,061 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to coke	Remarks
			Weight percent		Spent shale	Gas + loss			
Laramie	Their		Oil	Water					Oil
SBR73-4581-620	460- 870						No oil		
SBR73-4621	1280-1290	80999	1.7	2.2	93.1	3.0	4.4a	5.3	None
SBR73-4622	1290-1300	81000	3.0	2.3	93.0	1.7	7.9	5.5	0.912
SBR73-4623	1300-1310	81001	2.9	2.2	93.1	1.8	7.6	5.3	.915
SBR73-4624	1310-1320	81002	2.8	2.4	93.3	1.5	7.4	5.8	.911
SBR73-4625	1320-1330	81003	2.7	2.4	93.3	1.6	7.0	5.8	.917
SBR73-4626	1330-1340	81004	1.0	2.2	95.4	1.4	2.6a	5.3	
SBR73-4627	1340-1350	81005	1.2	2.4	95.2	1.2	3.1a	5.8	
SBR73-4628	1350-1360	81006	2.1	2.4	94.1	1.4	5.6	5.8	.901
SBR73-4629	1360-1370	81007	1.4	2.1	95.5	1.0	3.6a	5.0	
SBR73-4630	1370-1380	81008	1.3	2.9	94.7	1.1	3.4a	7.0	
SBR73-4631	1380-1390	81009	1.0	2.9	95.0	1.1	2.6a	7.0	
SBR73-4632	1390-1400	81010	1.2	2.5	94.8	1.5	3.1a	6.0	
SBR73-4633	1400-1410	81011	2.0	1.8	94.4	1.8	5.3	4.3	.907
SBR73-4634	1410-1420	81012	1.2	2.1	95.5	1.2	3.1a	5.0	
SBR73-4635	1420-1430	81013	1.2	2.0	95.6	1.2	3.1a	4.8	
SBR73-4636	1430-1440	81014	3.4	2.2	92.9	1.5	9.1	5.3	.891
SBR73-4637	1440-1450	81015	3.1	2.0	93.4	1.5	8.3	4.8	.892
SBR73-4638	1450-1460	81016	3.1	1.9	93.4	1.6	8.3	4.6	.894
SBR73-4639	1460-1470	81017	2.4	2.4	93.9	1.3	6.3	5.8	.907
SBR73-4640	1470-1480	81018	2.4	2.2	94.2	1.2	6.3	5.3	.908
SBR73-4641	1480-1490	81019	1.4	2.2	95.4	1.0	3.6a	5.3	
SBR73-4642	1490-1500	81020	1.5	1.8	95.7	1.0	3.9a	4.3	
SBR73-4643	1500-1510	81021	3.7	2.5	92.2	1.6	9.6	6.0	.919
SBR73-4644	1510-1520	81022	3.6	2.6	92.0	1.8	9.4	6.2	.920
SBR73-4645	1520-1530	81023	4.0	2.7	91.6	1.7	10.4	6.5	.918
SBR73-4646	1530-1540	81024	2.2	2.7	93.8	1.3	5.8	6.5	.911
SBR73-4647	1540-1550	81025	2.4	2.5	93.8	1.3	6.4	6.0	.905
SBR73-4648	1550-1560	81026	2.4	2.8	93.5	1.3	6.3	6.7	.907
SBR73-4649	1560-1570	81027	1.8	1.9	95.2	1.1	4.7a	4.6	

See footnote at end of table.

Drill cutting samples received November 8, 1972; Assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from William G. Helis Estate's Big Hollow No. 16-1 Well (Continued)

Kelly bushing elevation 7,061 feet

Sample number	Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks	
		Weight percent		Spent shale	Gas + loss		Gal per ton			Tendency to coke
		Oil	Water				Oil	Water		
Laramie	Their									
SBR73-4650	1570-1580	81028	1.2	2.7	94.9	1.2	3.1a	6.5	None	
SBR73-4651	1580-1590	81029	1.4	2.9	94.3	1.4	3.6a	7.0	None	
SBR73-4652	1590-1600	81030	1.4	2.6	94.8	1.2	3.6a	6.2	None	
SBR73-4653	1600-1610	81031	2.5	3.2	92.9	1.4	6.6	7.7	0.906	
SBR73-4654	1610-1620	81032	2.2	3.5	93.0	1.3	5.8	8.4	.904	
SBR73-4655	1620-1630	81033	1.8	3.0	93.7	1.5	4.7a	7.2	None	
SBR73-4656	1630-1640	81034	2.4	2.9	93.3	1.4	6.4	7.0	.903	
SBR73-4657	1640-1650	81035	2.8	3.2	93.4	.6	7.4	7.7	.906	
SBR73-4658	1650-1660	81036	2.9	3.0	92.6	1.5	7.7	7.2	.904	
SBR73-4659	1660-1670	81037	1.4	2.8	94.2	1.6	3.6a	6.7	None	
SBR73-4660	1670-1680	81038	1.5	3.0	94.2	1.3	3.9a	7.2	None	
SBR73-4661	1680-1690	81039	1.2	3.0	94.3	1.5	3.1a	7.2	None	
SBR73-4662	1690-1700	81040	1.4	2.7	93.4	2.5	3.6a	6.5	None	
SBR73-4663	1700-1710	81041	1.9	3.5	93.0	1.6	4.9a	8.4	None	
SBR73-4664	1710-1720	81042	1.9	3.4	93.2	1.5	4.9a	8.1	None	
SBR73-4665	1720-1730	81043	.2	2.0	97.0	.8	.5a	4.8	None	
SBR73-4666	1730-1740	81044	.2	2.7	96.1	1.0	.5a	6.5	None	
SBR73-4667	1740-1750	81045	.2	2.6	96.3	.9	.5a	6.2	None	
SBR73-4668	1750-1760	81046	.5	3.4	95.0	1.1	1.3a	8.1	None	
SBR73-4669	1760-1770	81047	.7	3.4	94.7	1.2	1.8a	8.1	None	
SBR73-4670	1770-1780	81048	.5	3.6	94.8	1.1	1.3a	8.6	None	
SBR73-4671-76	1780-1840						No oil			
SBR73-4677	1840-1850	81049	.1	1.7	97.8	.4	.3a	4.1	None	
SBR73-4678	1850-1860	81050	.1	1.7	97.6	.6	.3a	4.1	None	
SBR73-4679	1860-1870	81051	.1	1.6	97.7	.6	.3a	3.8	None	
SBR73-4680	1870-1880	81052	.1	1.7	97.5	.7	.3a	4.1	None	
SBR73-4681	1880-1890	81053	.2	2.8	96.5	.5	.5a	6.7	None	
SBR73-4682	1890-1900	81054	.1	2.7	96.6	.6	.3a	6.5	None	
SBR73-4683-84	1900-1920						No oil			
SBR73-4685	1920-1930						b			

See footnote at end of table.

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Samples from William G. Helis Estate's Big Hollow No. 16-1 Well (Continued)

Kelly bushing elevation 7,061 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to coke	Remarks
			Weight percent		Spent shale	Gas + loss			
Laramie	Their		Oil	Water					Oil
SBR73-4686-91	1930-1990						No oil		
SBR73-4692	1990-2000						b		
SBR73-4693-99	2000-2210						No oil		
SBR73-4700-02	2240-2330						Trace		
SBR73-4703	2330-2360	81055	0.1	1.0	98.2	0.7	.3a	2.4	None
SBR73-4704-05	2360-2420						No oil		
SBR73-4706	2420-2450						c		
SBR73-4707	2450-2480						b		
SBR73-4708	2480-2510						No oil		
SBR73-4709	2510-2540						b		
SBR73-4710	2540-2570	81056	.5	1.7	97.1	.7	1.3a	4.1	None
SBR73-4711	2570-2600	81057	2.0	1.5	95.6	.9	5.2	3.6	0.913 None
SBR73-4712	2600-2630	81058	.0	.7	98.7	.6	Trace	1.7	None
SBR73-4713	2630-2660	81059	.0	2.0	97.1	.9	Trace	4.8	None
SBR73-4714-18	2660-2810						No oil		
SBR73-4719	2840-2870						b		
SBR73-4720	2870-2900	81060	.2	1.5	97.8	.5	.5a	3.6	None
SBR73-4721	2900-2930	81061	.3	1.2	98.0	.5	.8a	2.9	None
SBR73-4722	2930-2960						b		
SBR73-4723	2960-2990						No oil		
SBR73-4724	2990-3020	81062	2.8	1.3	94.7	1.2	7.4	3.1	.902 None
SBR73-4725	3020-3060	81063	1.0	1.2	96.1	1.7	2.6a	2.9	None
SBR73-4726	3060-3090	81064	1.3	1.3	95.8	1.6	3.4a	3.1	None
SBR73-4727	3090-3120	81065	1.7	1.4	94.9	2.0	4.4a	3.4	None
SBR73-4728	3120-3160	81066	1.2	1.5	95.8	1.5	3.1a	3.6	None
SBR73-4729	3160-3190	81067	2.7	.8	95.0	1.5	7.1	1.9	.908 None

1/ "a"--indicates specific gravity estimated as 0.92. Oil yields were estimated by a rapid test-tube method; "No oil," "Trace," "b"--less than 1 gal oil/ton, "c"--1 to 3 gal oil/ton.

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