

Table 2.--Fischer assay and relative volatile organic matter for 11 samples of oil shale from central Alaska and the Green River and Chattanooga Shale

(Analyses by Irving C. Frost. Data in percent)

Alaska Oil Shale												Green River Shale ^{1/}	Chattanooga Shale ^{2/}		
Locality Number	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Field Number	GAATr207A	GAATr207B	GAATr208	GAATr209A	GAATr209B	GAATr210	GAATr211	GAATr212	GAATr213	GAATr214	GAATr215	GAATr216	GAATr217	GAATr218	GAATr219
Laboratory Number	D115215	D115216	D115217	D115218	D115219	D115220	D115221	D115222	D115223	D115224	D115225	D115226	D115227	D115228	D115229
Oil, gallons per ton Sp. Gr. at 15.6°C 15.6°C	45.2 0.912	26.5 0.894	45.1 0.973	144.3 0.908	88.5 0.910	74.6 0.903	24.5 0.937	21.5 0.946	10.6 0.924	45.1 0.861	2.9 -	24.1 0.908	8.2 0.946		
Fischer Assay, percent															
Oil	17.2	9.9	18.3	54.7	33.6	28.1	9.0	8.5	4.1	16.2	1.1	9.1	3.3		
Water	4.5	5.0	9.8	6.5	3.0	3.0	4.0	5.6	2.8	4.0	3.8	1.0	1.2		
Gas and Residue	10.8	5.9	13.2	12.0	5.4	7.9	6.4	7.4	2.6	4.3	2.1	2.1	4.5		
Spent shale	67.5	79.2	58.7	26.8	58.0	61.0	80.0	78.5	90.5	75.5	73.0	37.8	91.0		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Mineral carbon, percent															
Raw shale	.01	.04	<.01	<.01	.02	<.01	3.86	.78	<.01	.01	.39	2.17	-		
Raw Shale															
Ash at 900°C (Calc.)	24.2	57.1	14.3	17.4	51.0	54.1	55.1	58.2	74.3	47.3	78.6	78.3	82.6		
Total carbon, percent	51.3	28.2	61.1	63.3	38.0	36.0	26.7	26.1	17.6	41.2	12.3	16.3	13.0		
Water, percent	4.5	5.0	9.8	6.5	3.0	3.0	4.0	5.6	2.8	4.0	3.8	1.0	1.2		
Difference	20.0	9.7	14.8	12.8	8.0	6.9	14.2	10.1	5.3	7.5	5.3	4.4	3.2		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Organic carbon in spent shale calc. to Raw Shale basis	34.6	15.8	37.7	8.09	5.80	5.37	10.5	14.6	12.5	24.6	9.39	-	-		
Percent Organic Carbon evolved as oil & gas	33	44	38	87	35	85	54	42	29	40	21	-	-		
Percent Raw Shale extracted with benzene	2.80	1.28	2.26	1.31	0.62	0.53	1.28	-	-	1.01	-	1.65	0.29		
Ratio: percent extracted/percent organic carbon	5.46	4.54	3.70	2.07	1.63	1.47	5.61	-	-	2.45	-	11.7	-		
Percent of extracted organic matter as:															
Saturated hydrocarbons	42	34	4	8	11	31	9	-	-	42	-	19	18		
Aromatic hydrocarbons	40	45	17	4	7	17	41	-	-	27	-	18	60		
Nonhydrocarbons	18	21	79	88	82	52	50	-	-	31	-	63	22		
Percent recovery	99.7	93.5	93.0	101.5	101.7	95.5	97.7	-	-	99.4	-	-	-		
Oil residue after heating approximately 1 hr. at 55°C with vacuum	33.2	32.4	34.6	38.0	-	37.4	-	-	-	-	-	-	-		
Saturated hydrocarbons	26	34	15	23	-	24	-	-	-	-	-	-	-		
Aromatic hydrocarbons	58	45	51	47	-	47	-	-	-	-	-	-	-		
Nonhydrocarbons	16	17	30	30	-	29	-	-	-	-	-	-	-		
Percent recovery	93.6	104.7	97.3	92.4	-	101.3	-	-	-	-	-	-	-		

^{1/} Average mine-run shale from the Bureau of Mines Demonstration Mine near Rifle, Colorado. See Stanfield and others (1951, "composite sample", p. 4, tables 6, 15-20) for data on properties and composition of a sample of similar but not identical shale.

^{2/} Adit, about 1 mi. SW. on old Tennessee route 26 (now a boat landing road) from point where it joins Route 26 at top of descent to E. end of Sligo Bridge. See Bates and Strahl (1957) for data on mineralogy of shale from the same locality.