

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Southern Corehole drilled in the NW1/4NE1/4 (949 feet S/N, 2,382 feet W/E) of sec 20, T 10 S, R 24 E, Uintah County, Utah
 Core elevation 8,334 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		Gal. per ton					
Oil	Ther		Oil	Water	Spent shale	Gas + loss	Oil 11/	Water		
1-10028	961-962	77133	2.1	0.5	93.7	3.7	5.6	1.2	.914	None
1-10029	962-963	77134	3.7	.5	94.6	1.2	9.8	1.1	.918	None
1-10030	963-964	77135	4.2	.2	94.5	1.1	10.3	.6	.921	None
1-10031	964-965	77136	3.4	.2	94.8	1.6	8.8	.5	.928	None
1-10032	965-966	77137	6.9	.6	90.5	2.0	18.2	1.4	.914	None
1-10033	966-967	77138	2.4	1.7	93.5	2.4	6.4	4.1	.915	None
1-10034	967-968	77139	1.8	2.0	94.2	2.0	4.3m	4.8		None
1-10035	968-969	77140	3.9	1.2	93.6	1.3	10.3	2.9	.920	None
1-10036	969-970	77142	4.7	.3	94.1	.9	12.0	.7	.936	None
1-10037	970-971	77143	5.1	.2	93.7	1.0	13.3	.5	.925	None
1-10038	971-972	77144	6.1	.2	92.1	1.6	15.8	.4	.925	None
1-10039	972-973	77145	5.3	.3	92.2	1.7	15.1	.7	.925	None
1-10040	973-974	77146	6.0	.3	92.5	1.2	15.6	.6	.925	None
1-10041	974-975	77147	8.3	.4	89.8	1.5	21.7	1.1	.918	None
1-10042	975-976	77148	4.7	.1	94.0	1.2	12.2	.4	.925	None
1-10043	976-977	77149	4.4	.4	94.2	1.0	11.3	.8	.936	None
1-10044	977-978	77150	3.4	.3	95.3	1.0	8.5	.7	.940	None
1-10045	978-979	77151	3.0	.3	95.9	.8	7.8	.7	.930	None
1-10046	979-980	77152	4.6	.3	94.4	.7	11.9	.7	.925	None
1-10047	980-981	77153	5.4	.4	93.0	1.0	14.5	.8	.924	Slight
1-10048	981-982	77154	3.9	.5	94.9	.7	10.2	1.2	.928	None
1-10049	982-983	77155	5.0	.5	94.5	2.0	7.6	1.1	.929	Moderate
1-10050	983-984	77156	3.4	.4	95.3	.9	8.8	1.0	.928	None
1-10051	984-985	77157	3.3	.2	95.7	.8	8.6	.4	.925	None
1-10052	985-986	77158	1.9	.4	96.8	.9	5.1m	1.0		None
1-10053	986-987	77159	5.6	.4	93.3	.7	14.7	.8	.916	None
1-10054	987-988	77160	5.9	.2	92.4	1.5	15.5	.5	.911	None
1-10055	988-989	77161	4.4	.1	94.0	1.5	11.4	.2	.929	None
1-10056	989-990	77162	3.8	.5	94.7	1.0	9.9	1.2	.925	None
1-10057	990-991	77163	4.6	.2	93.3	1.9	12.0	.6	.919	None

Notes at end of table.

Notes at end of table.

Core samples received October 9, 1972; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Southam Corehole (con.)

Surface elevation 5,334 feet

Sample number			Run No.	Yield of product				Gal per ton		Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to	Remarks
				Weight percent		Spent shale	Gas + loans	Oil	Water			
Sample	Thier		Oil	Water								
72-10058	991 - 992	77164	11.0	0.3	87.2	1.5	28.7	0.6	.921	None		
72-10059	992 - 993	77165	12.7	.3	83.6	3.4	32.9	.6	.926	None		
72-10060	993 - 994	77166	4.9	.2	93.6	1.3	12.8	.4	.923	None		
72-10061	994 - 995	77167	5.1	.5	93.3	1.1	13.2	1.2	.920	None		
72-10062	995 - 996	77168	5.6	.4	93.0	1.0	14.7	1.0	.916	None		
72-10063	996 - 997	77169	5.5	.4	93.1	1.0	14.4	1.0	.916	None		
72-10064	997 - 998	77170	5.8	.4	93.1	.7	15.3	1.0	.911	None		
72-10065	998 - 999	77171	11.9	.3	85.6	2.2	31.2	.7	.912	None		
72-10066	999 - 1000	77172	9.0	.5	88.7	1.8	23.7	1.1	.911	None		
72-10067	1000 - 1001	77173	5.9	.2	92.7	1.2	15.4	.6	.911	None		
72-10068	1001 - 1002	77174	5.8	.8	92.1	1.3	15.5	1.8	.903	None		
72-10069	1002.0-1002.8	77175	12.3	.5	85.1	2.1	32.5	1.1	.907	None		
72-10070	1002.8-1003.5	77176	12.7	.8	84.5	2.0	33.6	1.8	.908	None		
72-10071	1003.2-1005.0	77177	3.0	.2	95.9	.9	7.9	.5	.921	None	2/	
72-10072	1005 - 1006	77178	2.5	.4	96.0	1.1	5.5	1.0	.923	None		
72-10073	1006 - 1007	77179	2.4	.3	96.4	.9	6.3	.6	.924	None		
72-10074	1007 - 1008	77180	1.3	.2	97.6	.9	3.4a	.4	None	None		
72-10075	1008.0-1009.1	77181	1.8	.3	96.9	1.0	4.8a	.7	None	None	2/	
72-10076	1009.8-1010.4	77182	1.9	.3	97.1	.7	5.0a	.6	None	None		
72-10077	1010.4-1011.0	77183	2.0	.2	97.2	.6	5.1a	.6	None	None		
72-10078	1011 - 1012	77184	1.9	.1	96.9	1.1	4.0a	.2	None	None		
72-10079	1012 - 1013	77185	1.4	.7	97.2	.7	3.8a	1.6	None	None		
72-10080	1013.0-1013.6	77186	.5	.5	97.1	1.9	1.3a	1.3	None	None		
72-10081	1013.6-1014.2	77187	.8	.1	98.1	1.0	2.0a	.2	None	None	2/	
72-10082	1014.8-1015.4	77188	1.6	.1	97.5	.8	4.2a	.2	None	None		
72-10083	1015.4-1016.0	77189	1.6	.6	96.8	1.0	4.1a	1.4	None	None		
72-10084	1016 - 1017	77190	2.9	.9	94.6	1.6	7.7	3.0	.910	None		
72-10085	1017.0-1017.7	77191	7.3	.5	90.1	2.1	19.2	1.2	.905	None		
72-10086	1017.7-1018.4	77192	5.0	.3	93.2	1.5	13.2	.7	.909	None		
72-10087	1018 - 1020	77193	14.6	.9	78.8	5.7	38.5	2.2	.905	Moderate	2/	

Footnotes at end of table.

Footnotes at end of table.

Core samples received October 9, 1972; Assays made on air-dried samples

Gulf Research Center, P.O. Box 100, Houston, Texas 77001

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Souham Corehole (con.)

Surface elevation 5,324 feet

Sample number		Run No.	Yield of product				Cal per ton		Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks
			Weight percent		Spent shale	Gas + loss				Tendency to		
Graphic	Text		Oil	Water					Oil	Water		coke
72-10088	1020 -1021	77194	7.5	0.7	89.8	2.0	19.7	1.7	0.915	None		
72-10089	1021 -1022	77195	6.6	.6	90.9	1.9	17.5	1.4	.903	None		
72-10090	1022 -1023	77196	6.1	.4	91.9	1.6	16.2	.8	.906	None		
72-10091	1023.0-1023.6	77197	4.2	.5	94.0	1.3	11.0	1.2	.911	None		
72-10092	1023.6-1024.3	77198	6.1	.5	92.0	1.4	16.3	1.2	.902	None	2/	
72-10093	1025 -1026	77199	10.7	.6	86.6	2.1	29.0	1.4	.917	None		
72-10094	1026 -1027	77200	11.4	.7	85.1	2.8	29.8	1.8	.916	None		
72-10095	1027 -1028	77201	9.1	.4	97.5	3.0	23.9	.8	.914	None		
72-10096	1028.0-1028.8	77202	10.5	.6	86.4	2.5	27.6	1.6	.911	None	2/	
72-10097	1029.5-1030.2	77203	19.2	.5	96.8	3.5	50.9	1.2	.902	Slight		
72-10098	1030.2-1031.0	77204	16.4	1.0	79.0	3.6	43.6	2.4	.904	None		
72-10099	1031 -1032	77205	13.7	.3	83.3	2.7	36.8	.8	.891	Slight		
72-10100	1032 -1033	77206	9.4	.2	88.3	2.1	25.2	.5	.897	None		
72-10101	1033.0-1033.8	77207	6.6	.2	91.0	2.2	17.2	.5	.920	None	2/	
72-10102	1034.5-1035.2	77208	4.1	.3	93.3	1.8	10.7	.7	.919	None		
72-10103	1035.2-1036.0	77209	3.3	.0	94.0	2.2	9.9	.1	.917	None		
72-10104	1036 -1037	77210	8.9	.5	88.4	2.2	23.3	1.2	.914	None		
72-10105	1037 -1038	77211	5.6	.3	92.6	1.5	14.8	.6	.906	None		
72-10106	1038 -1039	77212	4.9	.4	93.5	1.2	12.3	1.0	.900	None		
72-10107	1039 -1040	77213	5.4	.6	92.8	1.2	14.5	1.4	.903	None		
72-10108	1040 -1041	77214	3.8	.1	94.5	1.6	9.9	.2	.914	None		
72-10109	1041 -1042	77215	3.9	.0	95.0	1.1	10.4	.1	.899	None		
72-10110	1042 -1043	77216	5.5	.0	92.3	1.7	14.5	.1	.903	None		
72-10111	1043.0-1043.7	77217	17.5	.6	78.8	3.1	46.2	1.4	.906	Slight	2/	
72-10112	1044.4-1045.0	77218	8.4	.3	89.4	1.9	22.2	.6	.907	None		
72-10113	1045 -1046	77219	8.0	.6	89.4	2.0	21.2	1.5	.903	None		
72-10114	1046 -1047	77220	14.5	.3	81.4	3.8	41.2	.7	.904	None		
72-10115	1047 -1048	77221	14.2	.6	82.5	2.7	37.9	1.3	.900	None		
72-10116	1048 -1049	77222	11.4	.3	84.8	3.5	29.6	.7	.921	None		
72-10117	1049 -1050	77223	19.6	.6	76.6	3.2	52.7	1.3	.891	Heavy		

Footnotes at end of table.

Footnotes at end of table.

Core samples received October 9, 1972; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Southam Corehole (con.)

Surface elevation 5,334 feet

Sample number			Run No.	Yield of product				Gal per ton		Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to	Remarks
				Weight percent		Spent shale	Gas + loss	Oil	Water			
Sample	Thier			Oil	Water						coke	
72-10118	1050	-1051	77224	22.4	1.4	71.7	4.5	55.7	3.4	0.899	Heavy	
72-10119	1051	-1052	77225	32.6	2.8	58.1	6.5	85.3	6.7	.909	Heavy	
72-10120	1052	-1053	77226	26.3	3.9	61.6	8.2	69.8	9.3	.903	Heavy	
72-10121	1053	-1054	77227	24.4	1.7	69.4	4.5	64.8	4.1	.902	Heavy	
72-10122	1054.7	-1055.3	77228	24.8	1.3	69.5	4.4	66.2	3.1	.900	Heavy	2/
72-10123	1055.3	-1056.0	77229	22.9	1.0	71.9	4.2	60.1	2.4	.914	Slight	
72-10124	1056	-1057	77230	11.5	.5	85.3	2.7	39.9	1.2	.920	None	
72-10125	1057	-1058	77231	7.7	.5	90.1	1.7	20.2	1.2	.915	None	
72-10126	1058	-1059	77232	16.0	.6	80.6	2.8	42.0	1.3	.915	None	
72-10127	1059	-1060	77233	19.8	1.0	75.4	3.8	52.1	2.4	.912	None	
72-10128	1060	-1061	77234	8.7	.8	88.0	2.5	22.8	1.8	.917	None	
72-10129	1061	-1062	77235	6.0	.5	91.2	2.3	15.8	1.2	.915	None	
72-10130	1062	-1063	77236	6.1	.7	89.5	1.7	21.6	1.3	.907	None	
72-10131	1063	-1064	77357	14.3	.4	82.5	2.8	32.2	1.0	.896	None	
72-10132	1064	-1065	77358	20.2	.5	78.7	.6	53.7	1.2	.904	Slight	
72-10133	1065.0	-1065.7	77359	9.1	.2	89.1	1.6	24.6	.6	.888	None	2/
72-10134	1066.4	-1067.0	77360	12.1	.2	85.3	2.4	32.6	.6	.891	None	
72-10135	1067	-1068	77361	14.3	.5	82.8	2.4	37.8	4.8	.905	None	
72-10136	1068	-1069	77362	7.7	.4	90.3	1.6	20.3	1.0	.910	None	
72-10137	1069	-1070	77363	5.2	.2	93.1	1.5	13.7	.6	.903	None	
72-10138	1070	-1071	77364	9.0	.2	88.6	2.2	33.7	.5	.912	None	
72-10139	1071	-1072	77365	12.7	.5	84.4	2.4	33.4	1.2	.910	None	
72-10140	1072	-1073	77366	14.0	.3	82.9	2.8	36.9	.7	.911	None	
72-10141	1073.0	-1073.6	77367	4.4	.3	96.0	1.3	11.6	.8	.906	None	2/
72-10142	1074.2	-1075.0	77368	19.7	.3	76.2	3.3	52.1	1.9	.905	None	
72-10143	1075	-1076	77352	4.3	.7	93.7	1.3	11.3	1.7	.913	None	
72-10144	1076	-1077	77253	3.8	.3	94.2	1.7	9.9	.7	.918	None	
72-10145	1077	-1078	77284	5.0	.3	93.4	1.3	13.3	.7	.907	None	
72-10146	1078	-1079	77255	8.7	.2	90.0	1.1	23.4	.5	.891	None	
72-10147	1079	-1080	77256	13.4	.2	84.0	2.4	36.2	.5	.886	None	
Footnotes At end of table.												

Footnotes at end of table.

Core samples received October 9, 1972; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Southam Corehole (con.)

Surface elevation 5,344 feet

Sample number		Run No.	Yield of product				Cal per ton		Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to	Remarks
			Weight percent		Spent shale	Gas + loss	Oil ^{1/}	Water			
Sample	Core		Oil	Water							
872-10148	1080 -1081	77257	13.1	0.2	83.9	2.8	35.4	0.5	0.891	None	
872-10149	1081 -1082	77258	10.6	.3	87.5	1.6	28.3	.7	.894	None	
872-10150	1082.0-1082.7	77259	8.7	.2	89.6	1.5	23.0	.5	.906	None	
872-10151	1082.7-1083.5	77260	9.7	.4	88.2	1.7	25.8	1.0	.907	None	2/
872-10152	1084.1-1085.0	77261	16.0	.5	80.5	3.0	42.3	1.2	.906	Slight	
872-10153	1085 -1086	77262	8.9	.3	89.2	1.8	23.7	.7	.901	None	
872-10154	1086 -1087	77263	8.1	.6	89.7	1.6	21.5	1.4	.906	None	
872-10155	1087 -1088	77264	5.8	.5	92.6	1.1	15.3	1.1	.911	None	
872-10156	1088 -1089	77265	5.0	.6	93.4	1.0	13.2	1.3	.916	None	
872-10157	1089 -1090	77266	4.0	.7	94.0	1.3	10.4	1.7	.925	None	
872-10158	1090 -1091	77267	6.1	.6	91.8	1.5	15.9	1.4	.911	None	
872-10159	1091.0-1091.6	77268	12.9	.4	84.6	2.1	33.6	1.0	.920	None	2/
872-10160	1092.3-1093.0	77269	4.0	.2	95.0	.8	10.6	.5	.914	None	
872-10161	1093 -1094	77270	4.9	.4	93.6	1.1	12.8	1.1	.915	None	
872-10162	1094 -1095	77271	3.7	.8	94.3	.7	9.7	1.9	.912	None	
872-10163	1095 -1096	77272	1.8	1.2	96.4	.6	4.8a	2.9		None	
872-10164	1096.0-1096.9	77273	1.9	.7	96.1	1.3	4.9a	1.7		None	2/
872-10165	1097.6-1098.3	77274	7.4	.2	90.7	1.7	19.7	.6	.897	None	
872-10166	1098.3-1099.0	77275	3.9	.3	94.9	.9	10.4	.7	.890	None	
872-10167	1099 -1100	77276	3.6	1.0	94.5	.9	9.8	2.4	.887	None	
872-10168	1100 -1101	77277	4.6	.3	94.1	1.0	12.3	.7	.897	None	
872-10169	1101.0-1101.7	77278	15.2	.8	81.6	2.4	39.7	1.8	.921	None	
872-10170	1101.7-1102.3	77279	7.5	.4	90.3	1.8	19.7	1.0	.910	None	2/
872-10171	1103 -1104	77280	3.4	.3	94.7	1.6	9.1	.7	.906	None	
872-10172	1104 -1105	77281	2.8	.5	95.7	1.0	7.6	1.2	.899	None	
872-10173	1105 -1106	77282	8.4	.3	89.3	2.0	22.3	.6	.908	None	
872-10174	1106 -1107	77283	13.5	.3	83.6	2.6	35.3	.8	.914	None	
872-10175	1107 -1108	77284	2.7	.5	96.1	.7	7.1	1.2	.912	None	
872-10176	1108 -1109	77285	2.4	.7	94.6	2.3	6.2	1.8	.919	None	
872-10177	1109 -1110	77286	1.2	.7	95.9	2.2	3.1a	1.3		None	

^{1/} See footnotes at end of table.

Footnotes at end of table.

Core samples received October 9, 1972; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's No. 3 Southam Corehole (con.)

Core elevation 5,334 feet

Sample number		Run No.	Yield of product						Specific gravity of oil at 60°/60° F	Properties of parent shale Tendency to	Remarks
			Weight percent		Gal per ton						
Core	Shell		Oil	Water	Spent shale	Gas + loss	Oil/l/	Water		coke	
2-10178	1110-1111	77237	1.5	0.6	97.0	0.9	4.0a	1.4		None	
2-10179	1111-1112	77288	1.8	.8	96.3	1.1	4.8a	1.9		None	
2-10180	1112-1113	77239	5.2	.5	92.4	1.9	13.5	1.2	0.918	None	
2-10181	1113-1114	77290	12.0	1.0	84.6	2.4	31.5	2.4	.911	None	
2-10182	1114-1115	77291	10.0	.4	87.6	2.0	26.4	1.0	.908	None	
2-10183	1115-1116	77292	5.4	.6	92.6	1.4	14.4	1.3	.910	None	(... sands)
2-10184	1116-1117	77293	2.8	.6	95.4	1.2	7.3	1.3	.919	None	
2-10185	1117-1118	77294	1.3	.5	97.0	1.2	3.3a	1.2		None	
2-10186	1118-1119	77295	1.7	.5	96.8	1.0	4.5a	1.2		None	
2-10187	1119-1120	77296	1.9	.4	96.7	1.0	5.1a	1.0		None	
2-10188	1120-1121	77297	1.9	.7	96.3	1.1	5.1a	1.7		None	
2-10189	1121-1122	77298	1.6	.5	97.3	.6	4.2a	1.1		None	
2-10190	1122-1123	77299	2.8	1.0	95.1	1.1	7.3	2.4	.921	None	
2-10191	1123-1124	77300	2.7	.5	95.9	.9	6.9	1.2	.921	None	
2-10192	1124-1125	77301	1.0	.4	97.3	.8	2.6a	1.0		None	
2-10193	1125-1126	77302	1.0	.2	98.1	.7	2.6a	.6		None	
2-10194	1126-1127	77303	1.8	.4	97.3	.5	4.6a	1.0		None	
2-10195	1127-1128	77304	2.9	.4	95.0	1.7	7.6	.8	.928	None	
2-10196	1128-1129	77305	1.1	.2	97.5	1.2	2.9a	.5		None	
2-10197	1129-1130	77306	2.8	1.0	95.1	1.1	7.4	2.3	.923	None	

a"-indicates specific gravity estimated as 0.92.

Missing footage removed for physical property tests.

Core samples received October 9, 1972; Assays made on air-dried samples