Total organic carbon, rock-eval pyrolysis, and vitrinite reflectance data of cuttings from the Shell Western E & P Inc. OCS Y-0871-1 (Corona) well, with a supplement containing miscellaneous chemical and physical data for the well

Received 30 May 1989

Total of 8 pages in report with an additional 74 page supplement

Geologic Materials Center Data Report No. 125

HAMMERHEAD #2 AND CORONA #1 GEOCHEMISTRY

Initial pyrolysis screening of these wells revealed some 7-8 intervals with high S_2 yields. Additional, more intense sampling was carried out to derive a vertical profile through the source section to establish thickness and proneness of the intervals.

The richer samples were then extracted for further geochemical characterisation but this revealed the presence of severe contamination in both wells. The contaminant was extremely soluble, immediately turning dichloromethane black and totally swamping the GC traces obtained. The contaminant is some form of plasticiser or possibly lubraglide, a common Beaufort Sea drilling additive. No further geochemical characterisation was possible, and the high S_2 yields measured during screening are, at least in part, due to contaminant.

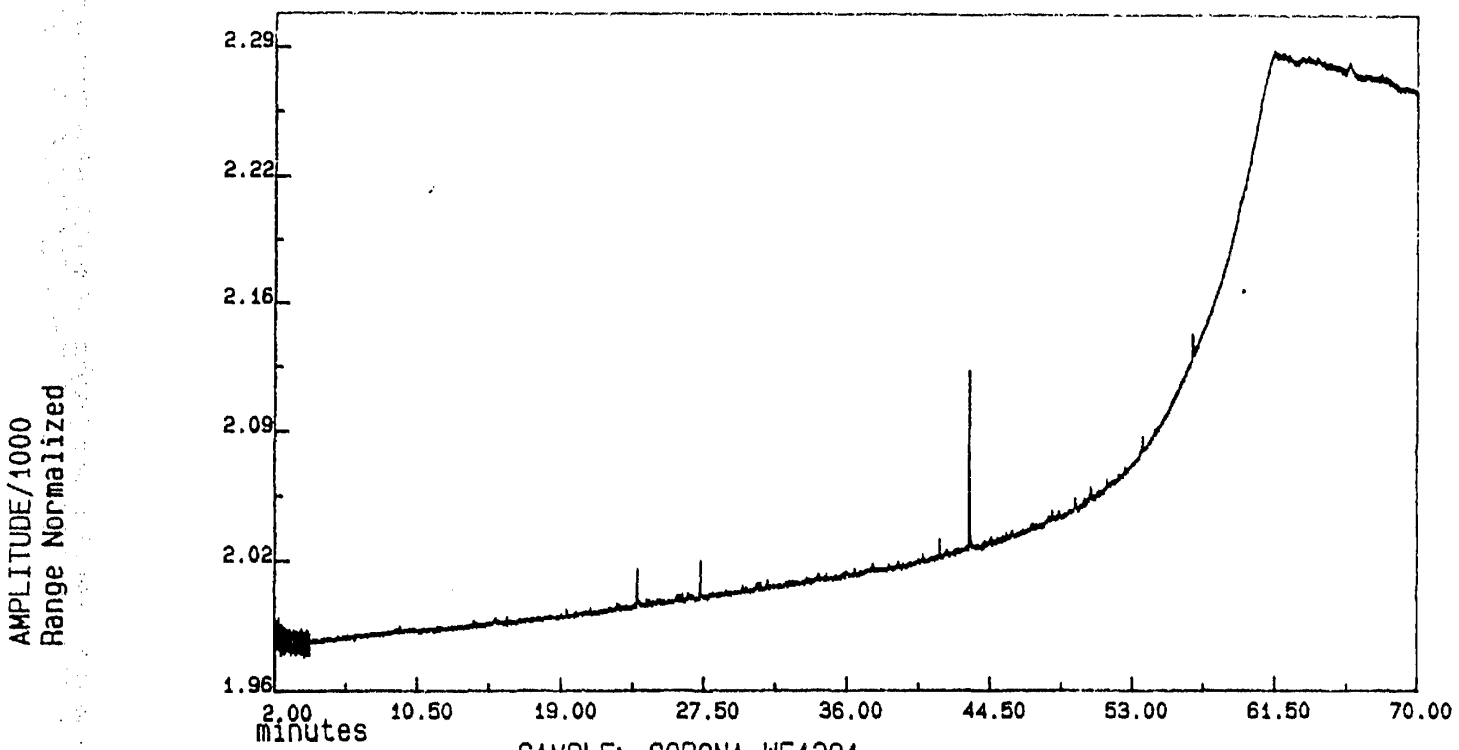
Sample #	Depth	%TOC	S1	S2	S3	HI	OI	PI	GOGI
WF1282	600	0.17	0.10	0.24	0.24	141	141	0.29	
WF1283	690	0.26	0.21	0.29	0.57	112	219	0.42	
WF1284	780	0.41	0.13	0.45	0.58	110	141	0.22	
WF1285	870	4.06	0.47	3.95	4.67	97	115	0.11	
WF1286	960	1.84	0.37	1.59	2.38	86	129	0.19	
WF1287	1050	2.05	0.49	1.81	2.49	88	121	0.21	
WF1288	1140	1.74	0.35	1.39	1.98	80	114	0.20	
WF1289	1230	0.90	0.27	2.64	0.83	293	92	0.09	
WF1290	1320	0.37	0.12	0.52	0.62	141	168	0.19	
WF1626	1350	3.16	0.19	8.58	3.26	271	103	0.02	
WF1627	1380	1.09	0.08	2.98	1.28	273	117	0.03	
WF1291	1410	2.97	0.67	12.93	2.36	435	79	0.05	0.43
WF1291Ext	1410	1.45	0.05	1.25	1.99	86	137	0.04	
WF1628	1410	3.78	0.19	13.26	3.45	350	91	0.01	
WF1629	1440	5.07	0.51	21.43	4.03	422	79	0.02	
WF1630	1470	0.64	0.11	1.15	1.01	179	157	0.09	
WF1292	1500	0.49	0.11	0.70	0.62	143	127	0.14	
WF1293	1590	0.68	0.09	0.77	0.67	113	99	0.10	
WF1294	1680	2.45	0.23	4.64	2.00	189	82	0.05	
WF1295	1770	0.41	0.09	0.45	0.49	110	120	0.17	
WF1296	1860	2.17	0.43	3.54	1.66	163	76	0.11	
WF1297	1950	0.71	0.15	0.63	0.84	89	118	0.19	
WF1631	1980	1.64	0.13	2.35	1.96	143	119	0.05	
WF1632	2010	2.14	0.12	3.08	2.54	143	118	0.04	
WF1633	2040	1.78	0.05	2.13	2.29	119	128	0.02	
WF1298	2040	2.93	0.43	6.58	2.20	225	75	0.06	0.56
WF1298Ext	2040	2.94	0.11	3.31	3.70	112	125	0.03	
WF1634	2070	1.88	0.07	1.78	3.12	94	165	0.04	
WF1635	2100	2.50	0.09	2.69	3.14	107	125	0.03	
WF1636	2130	1.43	0.09	1.16	2.13	81	148	0.07	
WF1299	2130	2.99	0.35	3.26	2.67	109	89	0.10	
WF1637	2160	1.74	0.11	1.99	2.50	114	143	0.05	
WF1638	2190	2.29	0.13	2.82	2.80	123	122	0.04	
WF1300	2220	4.60	0.45	8.05	3.63	175	79	0.05	
WF1639	2220	4.10	0.21	7.12	4.25	173	103	0.03	
WF1640	2250	3.05	0.11	3.63	3.55	119	116	0.03	
WF1641	2280	1.84	0.05	1.93	2.58	104	140	0.03	
WF1301	2310	1.32	0.17	1.24	1.38	94	105	0.12	
WF1302	2400	1.12	0.28	1.32	1.38	118	123	0.17	
WF1303	2490	1.46	0.21	1.40	3.62	96	248	0.13	
WF1304	2580	1.31	0.19	1.37	1.47	105	112	0.12	
WF1305	2670	1.14	0.21	0.98	1.20	86	105	0.18	
WF1306	2760	1.19	0.13	1.17	2.02	98	170	0.10	
WF1307	2850	0.57	0.09	0.57	1.80	100	316	0.14	
WF1308	2940	1.44	0.28	1.44	2.32	100	161	0.16	
WF1309	3030	2.50	0.25	2.66	3.16	106	126	0.09	
WF1310	3120	1.41	0.21	1.27	2.01	90	143	0.14	
WF1311	3210	1.48	0.33	1.00	1.92	68	130	0.25	
WF1312	3300	2.52	0.30	2.54	2.58	101	102	0.11	
WF1313	3390	0.96	0.23	0.79	1.38	82	144	0.23	
WF1314	3480	2.05	0.17	1.13	2.03	55	99	0.13	
WF1315	3570	0.65	0.07	0.53	0.90	82	138	0.12	
WF1316	3660	0.84	0.33	0.67	1.45	80	173	0.33	
WF1317	3750	0.39	0.33	0.31	0.53	79	136	0.52	
WF1318	3840	1.19	0.28	1.64	1.14	138	96	0.15	
WF1319	3930	1.20	0.20	1.64	1.50	137	125	0.11	
WF1320	4020	0.40	0.17	0.37	0.75	93	188	0.31	

WF1321	4110	0.94	0.15	[illegible]	1.24	[illegible]	[illegible]	[illegible]
WF1322	4200	0.87	0.17	0.89	1.43	102	164	0.16
WF1323	4290	1.14	0.39	1.16	2.29	102	201	0.25
WF1324	4380	1.03	0.41	1.02	2.39	99	232	0.29
WF1325	4470	1.25	0.29	1.46	1.93	117	154	0.17
WF1326	4560	1.21	0.38	1.10	2.22	91	183	0.26
WF1327	4650	2.23	0.31	1.83	2.74	82	123	0.14
WF1328	4740	1.43	0.25	1.30	2.08	91	145	0.16
WF1329	4830	3.87	0.25	2.78	3.59	72	93	0.08
WF1330	4920	3.86	0.21	2.08	4.17	54	108	0.09
WF1331	5010	2.30	0.19	1.41	2.81	61	122	0.12
WF1332	5100	1.06	0.15	0.88	1.35	83	127	0.15
WF1333	5190	0.66	0.19	0.57	1.64	86	248	0.25
WF1334	5280	1.25	0.24	1.20	1.56	96	125	0.17
WF1335	5370	1.24	0.15	1.02	1.60	82	129	0.13
WF1336	5460	1.80	0.19	1.57	3.12	87	173	0.11
WF1337	5550	0.89	0.12	0.66	1.92	74	216	0.15
WF1338	5640	1.00	0.27	1.04	1.94	104	194	0.21
WF1339	5730	0.85	0.15	0.89	1.09	105	128	0.14
WF1340	5820	0.82	0.07	1.10	1.52	134	185	0.06
WF1341	5910	0.55	0.08	0.44	0.90	80	164	0.15
WF1342	6000	1.78	0.17	1.58	1.78	89	100	0.10
WF1343	6090	2.00	0.27	2.12	2.22	106	111	0.11
WF1344	6180	1.27	0.24	1.16	2.36	91	186	0.17
WF1345	6270	1.04	0.09	0.87	1.38	84	133	0.09
WF1346	6360	1.67	0.12	1.50	2.72	90	163	0.07
WF1347	6450	2.03	0.35	2.70	2.31	133	114	0.11
WF1348	6540	0.72	0.15	0.57	2.05	79	285	0.21
WF1349	6630	0.91	0.18	0.52	4.64	57	510	0.26
WF1350	6720	1.09	0.15	0.98	1.91	90	175	0.13
WF1351	6810	0.84	0.15	0.76	1.83	90	218	0.16
WF1352	6900	1.08	0.37	1.25	2.27	116	210	0.23
WF1353	6990	1.10	0.51	1.10	2.31	100	210	0.32
WF1354	7080	1.29	0.27	1.30	2.21	101	171	0.17
WF1355	7170	1.80	0.21	2.79	2.22	155	123	0.07
WF1356	7260	1.65	0.29	2.34	2.07	142	125	0.11
WF1357	7350	0.99	0.33	1.20	1.81	121	183	0.22
WF1358	7440	1.48	0.39	1.47	2.11	99	143	0.21
WF1359	7530	1.35	0.29	1.86	1.63	138	121	0.13
WF1360	7620	1.50	0.25	1.55	1.53	103	102	0.14
WF1361	7710	0.84	0.27	0.89	1.29	106	154	0.23
WF1362	7800	1.03	0.15	1.07	2.13	104	207	0.12
WF1363	7890	0.81	0.07	0.53	1.39	65	172	0.12
WF1364	7980	1.39	0.19	1.59	3.03	114	218	0.11
WF1365	8070	1.16	0.12	0.80	3.42	69	295	0.13
WF1366	8160	1.10	0.10	0.92	3.20	84	291	0.10
WF1367	8250	1.89	0.09	0.94	5.06	50	268	0.09
WF1368	8340	0.97	0.03	0.45	1.57	46	162	0.06
WF1369	8430	1.09	0.03	0.41	3.47	38	318	0.07
WF1370	8516	1.02	0.11	1.30	5.86	127	575	0.08
WF1371	8570	1.20	0.11	1.15	2.89	96	241	0.09
WF1372	8600	0.77	0.09	0.69	3.11	90	404	0.12
WF1373	8630	0.93	0.15	1.12	3.87	120	416	0.12
WF1374	8660	1.25	0.27	1.81	1.97	145	158	0.13
WF1375	8690	1.84	0.43	3.02	2.86	164	155	0.12
WF1376	8720	1.51	0.11	1.18	2.32	78	154	0.09
WF1642	8720	1.58	0.11	1.04	3.22	65	203	0.10
WF1643	8730	2.33	0.23	1.72	4.49	73	192	0.12
WF1644	8740	1.32	0.22	1.02	3.72	77	281	0.18
WF1377	8750	3.62	0.17	2.79	3.85	77	106	0.06
WF1645	8750	2.96	0.23	2.10	4.40	70	148	0.10

WF1647	8770	1.54	0.29	1.38	3.46	89	224	0.17	
WF1378	8780	1.52	0.15	1.61	2.14	106	141	0.09	
WF1379	8810	1.19	0.08	0.82	1.90	69	160	0.09	
WF1380	8840	0.69	0.25	0.90	1.55	130	225	0.22	
WF1381	8870	0.49	0.20	0.74	1.08	151	220	0.21	
WF1382	8900	0.59	0.05	0.51	1.68	86	285	0.09	
WF1383	8930	0.76	0.07	0.61	2.25	80	296	0.10	
WF1384	8960	0.43	0.07	0.45	0.89	105	207	0.13	
WF1385	8990	0.43	0.19	0.55	0.87	128	202	0.26	
WF1386	9020	0.53	0.20	0.72	1.06	136	200	0.22	
WF1387	9050	0.74	0.06	0.54	0.80	73	108	0.10	
WF1388	9080	1.23	0.13	1.53	0.83	124	67	0.08	
WF1389	9110	0.69	0.13	0.74	1.35	107	196	0.15	
WF1390	9140	0.54	0.18	0.60	1.40	111	259	0.23	
WF1391	9170	0.90	0.47	0.99	3.26	110	362	0.32	
WF1392	9200	0.99	0.23	1.33	2.42	134	244	0.15	
WF1393	9230	0.47	0.11	0.51	1.30	109	277	0.18	
WF1394	9260	0.73	0.23	1.14	1.89	156	259	0.17	
WF1395	9290	1.11	0.21	1.55	1.19	140	107	0.12	
WF1396	9320	0.86	0.09	0.79	1.53	92	178	0.10	
WF1397	9350	0.72	0.11	0.55	1.27	76	176	0.17	
WF1648	9350	0.92	0.19	0.71	2.53	77	275	0.21	
WF1649	9360	1.17	0.13	1.14	2.15	97	183	0.10	
WF1650	9370	1.95	0.23	1.92	2.99	98	153	0.11	
WF1398	9380	2.11	0.31	3.01	1.88	143	89	0.09	0.58
WF1651	9380	2.46	0.66	8.82	3.16	358	128	0.07	
WF1652	9390	1.33	0.13	1.76	2.50	132	187	0.07	
WF1653	9400	0.83	0.13	0.57	2.30	68	277	0.19	
WF1399	9410	0.72	0.19	0.77	1.76	107	244	0.20	
WF1654	9410	0.98	0.15	0.87	2.23	88	227	0.15	
WF1655	9420	1.00	0.37	0.93	2.67	93	267	0.28	
WF1656	9430	1.07	0.11	1.31	3.04	122	284	0.08	
WF1400	9440	0.99	0.23	1.28	1.63	129	165	0.15	
WF1657	9440	1.03	0.17	1.10	2.81	106	272	0.13	
WF1658	9450	1.15	0.18	1.02	2.52	88	219	0.15	
WF1659	9460	1.24	0.15	1.02	2.69	82	216	0.13	
WF1401	9470	1.50	0.27	2.27	1.86	151	124	0.11	
WF1660	9470	0.81	0.07	0.51	2.62	62	323	0.12	
WF1661	9480	0.85	0.11	0.49	2.40	57	282	0.18	
WF1402	9500	0.90	0.10	0.80	1.56	89	173	0.11	
WF1403	9530	0.84	0.17	0.74	2.30	88	274	0.19	
WF1404	9560	1.91	0.31	2.69	2.61	141	137	0.10	
WF1405	9590	0.95	0.24	0.94	2.04	99	215	0.20	
WF1406	9620	0.78	0.23	0.75	1.84	96	236	0.23	
WF1407	9650	1.00	1.25	1.35	2.36	135	236	0.48	
WF1408	9680	1.13	0.24	1.08	2.44	96	216	0.18	
WF1409	9710	1.18	0.53	1.51	3.33	128	282	0.26	
WF1410	9740	0.96	0.61	1.24	2.13	129	222	0.33	
WF1411	9770	1.17	0.45	1.23	2.71	105	232	0.27	
WF1412	9800	0.83	0.25	0.75	1.97	90	237	0.25	
WF1413	9830	0.70	0.17	0.59	1.39	84	199	0.22	
WF1414	9860	0.77	0.15	0.92	1.32	119	171	0.14	
WF1415	9890	0.80	0.15	0.65	2.42	81	303	0.19	
WF1416	9920	0.83	0.37	0.81	1.87	98	225	0.31	
WF1417	9950	0.74	0.23	0.69	1.71	93	231	0.25	
WF1418	9980	0.61	0.65	0.81	2.25	133	369	0.45	
WF1419	9990	0.73	0.43	0.71	1.97	97	270	0.38	

Corona (Alaska) Vitrinite Reflectance

Sample #	Depth	% Ro	No. Points
WF1285	870	0.19	22
WF1291	1410	0.25	21
WF1300	2220	0.27	21
WF1306	2760	0.25	12
WF1312	3300	0.31	25
WF1316	3660	0.36	24
WF1323	4290	0.34	15
WF1327	4650	0.34	24
WF1332	5100	0.36	20
WF1336	5460	0.41	12
WF1343	6090	0.43	20
WF1347	6450	0.43	20
WF1355	7170	0.43	16
WF1360	7620	0.47	15
WF1364	7980	0.49	15
WF1367	8250	0.43	20
WF1377	8750	0.45	23
WF1388	9080	0.44	20
WF1398	9380	0.51	21
WF1416	9920	0.48	7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2.02
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27.50
36.00
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minutes
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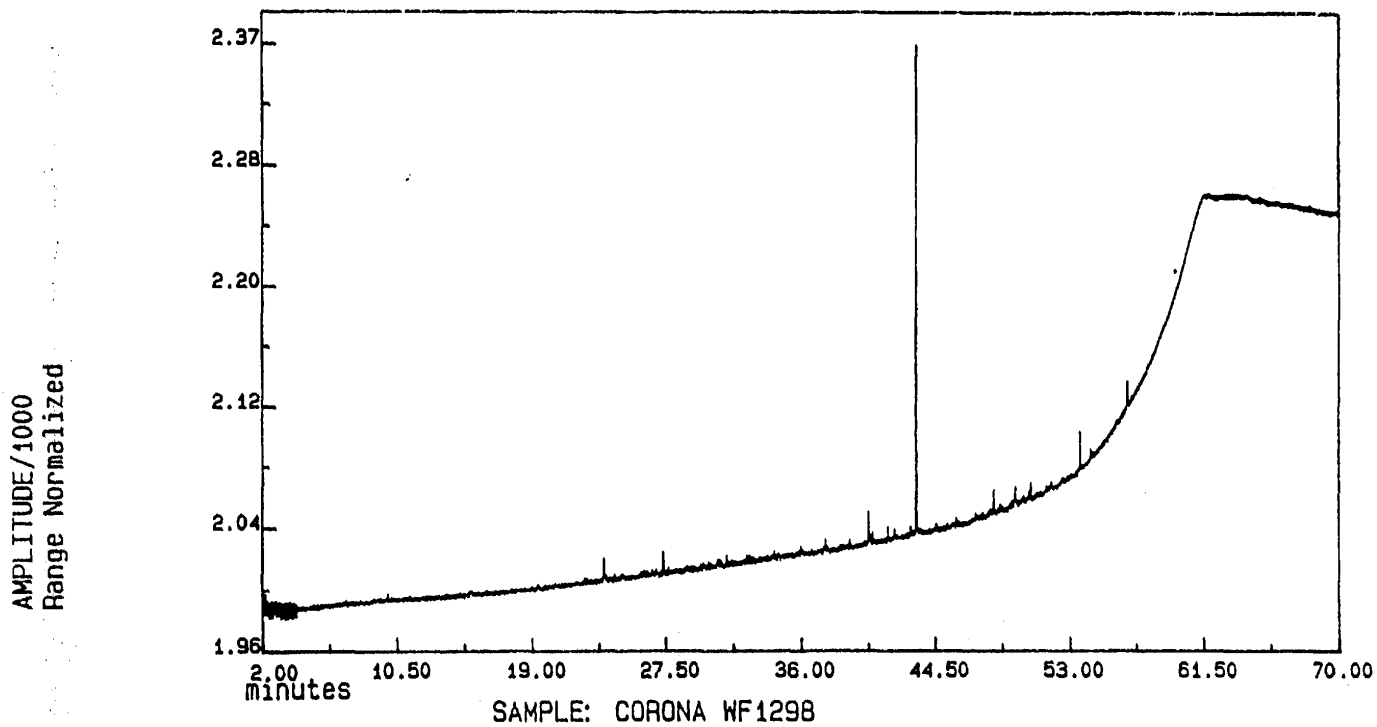
ANALYZED: Thu May 4, 1989 12:06:44 am
RESULT: /RESULT/WF1291 WHO.RES
METHOD: WHOLE GENIE JOHN



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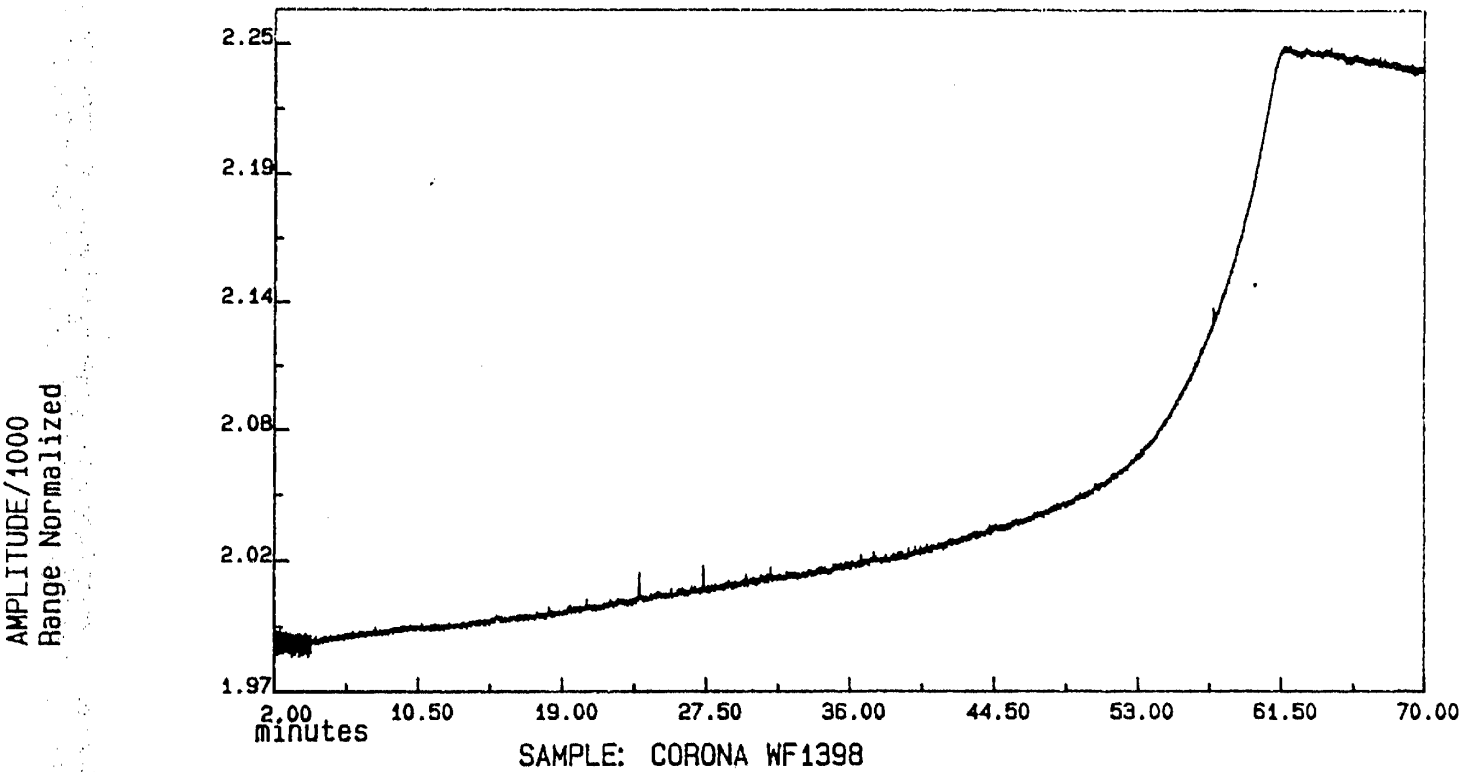

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ANALYZED: Thu May 4, 1989 2:52:30 am
RESULT: /RESULT/WF1398 WHO.RES METHOD: WHOLE GENIE JOHN

GMC Data Report No. 125 Supplement

Data from the U. S. Minerals Management Service

Total of 74 pages of data

DATE: MARCH 24, 1987

REQUESTOR: K. CUNNINGHAM

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

DEPTH, F	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS MEAN :95%CL	VKA SUMMARY ? SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
8108.00-8108.00	49289	1	SW	CP	CL	./	V	10 X 0.49±0.06 8 A 0.49±0.04			20	5	68	7					PNC-S-127A
8108.00-8108.00	49290	1	SW	KC	CL	./	V	54 X 0.49±0.02 36 A 0.52±0.02			20	5	68	7					PNC-S-127A
8449.00-8449.00	49291	1	SW	CP	CL	./	V	36 X 0.43±0.03 22 A 0.48±0.03			15	2	76	7					PNC-S-138A
8736.00-8736.00	49293	1	SW	CP	CL	./	V	13 X 0.47±0.04 9 A 0.51±0.04		<1	5	4	85	7					PNC-S-148A
8736.00-8736.00	49294	1	SW	KC	CL	./	V	50 X 0.44±0.02 36 A 0.47±0.02		<1	5	3	87	4					PNC-S-148A
8935.00-8935.00	49295	1	SW	CP	CL	./	V	12 X 0.44±0.02 10 A 0.45±0.02			5	1	91	3					PNC-S-162A
8935.00-8935.00	49296	1	SW	KC	CL	./	V	53 X 0.46±0.02 42 A 0.48±0.02		<1	5	2	88	4					PNC-S-162A
9214.00-9214.00	49297	1	SW	CP	CL	./	V	49 X 0.48±0.02 44 A 0.49±0.02		<1	2	1	87	10					PNC-S-177A
9243.00-9243.00	49298	1	SW	KC	CL	./	V	52 X 0.40±0.02 52 A 0.40±0.02		<1	10	3	83	4		<1			PNC-S-180A

RELEASED TO PUBLIC FILE
DATE OCT 16 1988 TRC

RECEIVED
OCS DISTRICT OFFICE
APR 17 1987
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

MOST CONFIDENTIAL

DATE: MARCH 24, 1987

REQUESTOR: K. CUNNINGHAM

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

DEPTH, F	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS MEAN :95%CL	VKA SUMMARY ? SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
9422.00-9422.00	49299	1	SW	CP	CL	./	V	13 X 0.45±0.06			5	1	87	7					PNC-S-195A
								10 A 0.49±0.06											
9422.00-9422.00	49300	1	SW	KC	CL	./	V	51 X 0.44±0.02			10	1	85	4					PNC-S-195A
								51 A 0.44±0.02											
9675.00-9675.00	49301	1	SW	CP	CL	./	V	11 X 0.48±0.06			2	2	91	5					PNC-S-220A
								8 A 0.52±0.05											
9675.00-9675.00	49302	1	SW	KC	CL	./	V	52 X 0.43±0.01			5	5	82	8					PNC-S-220A
								33 A 0.46±0.02											
9814.00-9814.00	49303	1	SW	CP	CL	./	V	52 X 0.49±0.02		<1	5	2	83	10					PNC-S-244A
								50 A 0.49±0.02											
9814.00-9814.00	49304	1	SW	CP	CL	./	V	53 X 0.50±0.02		<1	5	2	88	5					PNC-S-244A
								53 A 0.50±0.02											
9846.00-9846.00	49305	1	SW	CP	CL	./	V	53 X 0.47±0.01		<1	5	2	89	4	<1				PNC-S-249A
								53 A 0.48±0.01											
							VK	1 X 2.33±0.00											
9882.00-9882.00	49307	1	SW	CP	CL	./	V	54 X 0.51±0.02			1	1	94	4					PNC-S-257A
								50 A 0.52±0.02											
9882.00-9882.00	49308	1	SW	CP	CL	./	V	34 X 0.46±0.02			1	1	97	1					PNC-S-257A
								29 A 0.47±0.02											
9960.00-9960.00	49309	1	SW	CP	CL	./	V	10 X 0.53±0.02			2	1	92	5					PNC-S-268A
								10 A 0.53±0.02											
9960.00-9960.00	49310	1	SW	KC	CL	./	V	54 X 0.49±0.01		<1	15	1	76	8					PNC-S-268A
								54 A 0.49±0.01											

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DATE: MARCH 24, 1987

REQUESTOR: K. CUNNINGHAM

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

DEPTH, F	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS MEAN :95%CL	? SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
9997.00-9997.00	49311	1	SW	CP	CL	./	V	51 X 0.54±0.02 51 A 0.54±0.02		<1	1	1	95	3					PNC-S-274A
9997.00-9997.00	49312	1	SW	CP	CL	./	V	56 X 0.52±0.02 56 A 0.52±0.02		<1	3	2	90	5					PNC-S-274A
10000.00-10000.00	49313	1	SW	CP	CL	./	V	10 X 0.54±0.04 10 A 0.54±0.04			6	1	91	3	<1				PNC-S-276A
							VK	1 X 3.86±0.00											
10000.00-10000.00	49314	1	SW	KC	CL	./	V	56 X 0.49±0.02 56 A 0.49±0.02		<1	<1	1	90	7		1			PNC-S-276A

VKA SUMMARY

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

GMC Data Report 125

SAMPLE ORIGIN

CO = Core	JB = Junk Basket	OT = Outcrop
PD = Picked Ditch	MI = Mine	SW = Sidewall
UD = Unpicked Ditch	MS = Quarry	NA = Not Applicable
ND = Not Determinable	OB = Ocean Bottom	X = Extracted

PREPARATION TYPES

KC = Kerogen concentrate	RM = Rock Mount	RP = Rock Pellet
CP = Crushed Pellet or Coal Pellet		

GROUPINGS FOR VKA SUMMARY

SHC (TYPE ? - Solid Hydrocarbons)	= B,BI,BK,BM,B1,B2,B3,E,TH,XO,CN
1 (TYPE 1 - Alginites)	= A,AB,AC,AG,AL,AN,AS,AT
1/2 (TYPE 1 or 2 - Structureless Organic Matter)	= KU,KA,KI,KK,KM
2 (TYPE 2 - Liptinites)	= C,FL,LP,LD,PC,PI,PT,R,SP,SU,XL
3 (TYPE 3 - Humic)	= AR,BR,CC,CH,CL,CT,DC,DN,G,GC,GK,GL,GO,GR,GS, H,HC,HD,HT,TC,TL,TX,UL,V,VD,VK,VO,VR,VS,XH
4 (TYPE 4 - Inert)	= F,GI,GP,ID,IN,S,SC
COK (Coked Organic Matter)	= CN,BK,GK,KK,VK
ADD (Drilling Additive)	= AD
CAV (Caved Material)	= VC,LC,IC

MACERAL QUALITY CODES

C = Caved	M = Migrated (shc's)	R = Reworked
D = Degraded (liptinites)	O = Oxidized	S = Bad Surface
I = Few Measurable Particles	P = Overpressured Section	
L = Lipid Effect	Q = Questionable Maceral ID	

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

STANDARD COMMENTS REGARDING REFLECTED LIGHT ANALYSES

Preparation methods for reflected light analysis include the following: 1)Rock Mount (RM) - a piece of whole rock mounted perpendicular to bedding, 2)Crushed Pellet or Coal Pellet (CP) - crushed pieces of rock or coal, 3)Rock Pellet (RP) - randomly oriented pieces of uncrushed or only slightly crushed rock and 4) Kerogen Concentrate (KC) - the HF-HCl-insoluble portion of a rock in which organic matter is concentrated relative to the whole rock. All four sample types are mounted (or mixed) with epoxy and polished.

Sample preparation affects the visual kerogen analysis. Liptinites (sporinite, resinite, cutinite, alginite) which are visible in whole rock preparations can be washed away during preparation of a kerogen concentrate. Conversely, SOM which is observed in a kerogen concentrate, is often practically invisible or grossly underestimated in whole rock preparations. In the cases where VKA data are available from both types of preparations on the same sample, an interpreted VKA can be constructed to eliminate the bias of the preparations.

The standard measure of maturity is vitrinite (and graptolite) reflectance. Other measures of maturity are calibrated to vitrinite reflectance and expressed in terms of their vitrinite reflectance equivalent (VRE). The symbol "*" following a maceral type indicates an alternate maturity measurement was used. The reflectance value reported for the maceral with the "*" is the VRE.

The VRE for solid hydrocarbons is based on the tentative calibration of solid hydrocarbon reflectance with vitrinite reflectance which was established in samples where both macerals were present and clearly distinguishable. When the reflectance is greater than 2.0%, solid hydrocarbon and vitrinite have the same reflectance, and therefore the Ro of solid hydrocarbon can be used interchangeably with the Ro of vitrinite.

Where two or more mean reflectance values are presented for a particular maceral, the A mean is preferred and the X group refers to all the reflectance values measured on this maceral in the sample.

Visual kerogen analysis refers to the relative amounts of each type of kerogen to the total kerogen. It does not indicate quantitatively the amount of kerogen in the sample.

Liptinite attains a reflectance similar to that of vitrinite at about VRE 1.2-1.5% and can no longer be distinguished from vitrinite.

The mean reflectance values for macerals with fewer than ten (10) observations are reported for information only. They are not considered to be statistically valid measures of maturity.

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

STANDARD COMMENTS REGARDING REFLECTED LIGHT ANALYSES
(cont'd)

The VKA Summary reports macerals grouped according to kerogen type and qualifiers which may be used in the evaluation of the source potential of the examined samples. The columns 'SHC','1','1/2','2','3','4','ADD'and 'CAV' should sum to 100. Material listed as 'COK' has already been included under the appropriate kerogen type for the uncoked maceral.

The grouping scheme for the VKA summary appears in the table above. Maceral codes are defined following the detailed VKA report.

A V # of CONSOL indicates that the data reported for a given depth interval are consolidated from a number of samples. The line following the consolidated data indicates the number, date and author of the consolidation and the V #'s of the samples that contributed to the consolidation. Usually no VKA will be reported for a consolidated sample, but occasionally there will be an interpreted VKA which can be taken to apply to all samples in the consolidation.

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DETAILED VKA REPORT

SAMPLE	ID		SOLID HYDROCARBONS					ALGAE		STRUCT.	ORG. MAT.				LIPTIN.		VITRINITES						GRAPTOLITES				INERTS			OTHER	
V#	R#	%OM	B	BI	BR	BK	TH	A	AB	KA	KM	KI	KU	KK	RES	LPT	HUM	VS	V	VO	VK	CT	G	GS	GO	GK	SF	IN	CB	ADD	CAV
49289	1	10								20						5		5	62	1							5	2			
49290	1	35								20						5		25	41	2							5	2			
49291	1	5								15						2		1	75								5	2			
49293	1	5						<1		5					<1	3		3	81	1							5	2			
49294	1	30						<1		5						3		2	85	<1							2	2			
49295	1	5								5						1		5	85	1							1	2			
49296	1	35						<1		5						2		25	63	<1							2	2			
49297	1	5						<1		2						1		10	76	1							9	1			
49298	1	30						<1		10					<1	2		10	72	1							2	2		<1	
49299	1	5								5						1		5	81	1							5	2			
49300	1	30								10						1		15	69	1							2	2			
49301	1	4								2						2		1	89	1							3	2			
49302	1	25								5						5		25	56	1							5	3			
49303	1	8						<1		5					<1	2		5	78	<1							5	5			
49304	1	8						<1		5						2		5	83								3	2			
49305	1	8						<1		5						2		1	88		<1						3	1			
49307	1	10								1						1		2	92	<1							2	2			
49308	1	10								1						1		2	95	<1							1	<1			
49309	1	10								2						1		2	90								3	2			
49310	1	35						<1		15						1		5	71	<1							5	3			
49311	1	5						<1		1						1		1	94	<1							2	1			
49312	1	8						<1		3						2		<1	89	<1							3	2			
49313	1	8								5	1					1		<1	90		<1						2	1			
49314	1	20						<1			<1					1		10	80	<1							5	2		1	

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REQUESTOR: K. CUNNINGHAM

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

GMC Data Report 125

KEY TO ABBREVIATIONS IN DETAILED VKA REPORT

%OM = % Organic Matter in the Preparation
B = Indigenous Solid Hydrocarbons (B,BI,E)
B' = Other Solid Hydrocarbons (BM,B1,B2,B3,BK,XO)
BR = Reworked Solid Hydrocarbons
BK = Coked Solid Hydrocarbons
TH = Thucholites
A = Algae - Dominantly Marine (A,AC,AG,AL,AN,AS,AT)
AB = Botryococcus Algae - Nonmarine
KA = Amorphous Structureless Org. Matter
KM = Massive Structureless Org. Matter
KI = Micrinized Structureless Org. Matter
KU = Undifferentiated Structureless Org. Matter
KK = Coked Structureless Org. Matter
RES = Resinite and Fluorinite (R,FL)
LPT = Liptinitic Macerals (C,LP,LD,PA,PC,PI,PT,SP,SU,XL)
HUM = Huminitic Macerals (AR,CH,DN,GL,H,HC,HD,HT,TX,UL)
VS = Saprovitrinite
V = Vitrinite (V,GC,CC,CL,DC,TC,TL,VD,XH)
VO = Oxidized or Reworked Vitrinite (VO,VR)
VK = Coked Vitrinite
CT = Chitin
G = Graptolites
GS = Saprograptolites
GO = Oxidized or Reworked Graptolites (GO,GR)
GK = Coked Graptolites
SF = Semifusinite (S)
IN = Inerts (SC,F,GI,ID,IN,MA,MI)
CB = Carbon Forms (GP,CN)
ADD = Additive (AD)
CAV = Caved Material (VC,LC,IC)

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ANALYTICAL REPORT

To Geochemical Services/Files
For K. CUNNINGHAM

API Well NO. 92-001-00002

Date December 22, 1986

Book Number RELR 2043
File RRLB0186

Re.
Carbon isotopic analysis of 20 gas samples from a SWEPI coded well.

SAM NO	Depth(ft)	Delta C13‰ PDB Methane	Ethane	Propane
PNC-G-1A	3007	-51.3	-29.3	-22.1
PNC-G-2A	3260	-55.1	-----	----
PNC-G-3A	3337	-53.0	____	____
PNC-G-4A	3499	-51.0	-28.4	----
PNC-G-5A	4278	-49.6	-29.9	-27.6
PNC-G-6A	4294	-49.1	-----	----
PNC-G-7A	4365	-51.4	-----	----
PNC-G-8A	4990	-47.6	----	----
PNC-G-9A	5174	-47.4	-----	----
PNC-G-10A	7739	-44.8	-35.5*	-28.2
PNC-G-11A	6055	-44.4	-----	----
PNC-G-12A	8323	-41.2	-----	----
PNC-G-13A	8822	-40.1	-26.6	-25.4
PNC-G-14A	9647	-41.2	-----	----
PNC-G-15A	9938	-41.9	-----	----
PNC-G-16A	9975	-41.4	-----	----
PNC-G-17A	10000	-41.6	-28.4	-27.3
PNC-G-18A	10000	-41.8	-28.6	-28.2
PNC-G-19A	9755	-41.8	-28.5	-27.6
PNC-G-20A	3759	This sample seems to be mostly air.		

* This sample was small 5 um and ran poorly.

INTERPRETATION: Samples PNC-G-1A through 9A, and to a lesser extent 10A and 11A, are mixed thermal and bacterial gases as indicated by the methane isotope values and (where availiable) methane to ethane ratio. The remaining samples (PNC-G-12A through 20A) are primary thermal gas of indeterminant source.

(Our S5849-5868)

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MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

A.N. Fuex
J.A. Thompson
D.L. Roose

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SWEPI Coded Well, API Well No. 92-001-00002, 3007 ft.

SAMPLE NAME: WRC 180494 PNC-G-1A S5849

AIR	85.00
SULFUR DIOXIDE	0.04
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGE		1.07	0.11
HELIUM		0.00	0.00
METHANE	-51.3	61.94	48.23
ETHYLENE	C1/C2=61.9	0.01	0.01
ETHANE	-29.3	1.001.%	
PROPYLENE	C2/C3=4.4	0.00	0.01
PROPANE	-22.1	0.23	0.48
C4H8		0.00	0.00
ISOBUTANE		0.21	0.60
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.01	0.05
ISOPENTANE		0.13	0.45
PENTANE		0.00	0.00
C6H12 (GEN)		0.01	0.03
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.02	0.12
C7H16 (M1)		0.03	0.03
BENZENE		0.00	0.01
TOLUENE		0.00	0.00
ARGON		0.61	1.18
NITROGEN		34.72	47.23
CARBON DIOXIDE		0.00	0.00
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.7109
MOLECULAR WEIGHT	20.6
BTUS/FT3, NET	602.9385
RATIO H2 TO CARBON	0.3286
ERROR AS % OF RIC=	8.8

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SWEPI Coded Well, API Well No. 92-001-00002, 3260 ft.

SAMPLE NAME: WRC 182108 PNC-G-2A S5850

AIR	93.62
SULFUR DIOXIDE	0.05
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		1.83	0.15
HELIUM		0.00	0.00
METHANE	-55.1	33.02	21.79
ETHYLENE	C1/C2=121	0.04	0.05
ETHANE		0.272.%	
PROPYLENE		0.36	0.62
PROPANE		0.00	0.00
C4H8		0.00	0.00
ISOBUTANE		0.00	0.00
BUTANE		0.70	1.66
C5H8 +C6H10		0.00	0.01
C5H10 (M1)		0.00	0.00
ISOPENTANE		0.08	0.24
PENTANE		0.18	0.53
C6H12 (GEN)		0.10	0.33
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.13	0.52
C7H16 (M1)		0.10	0.09
BENZENE		0.03	0.08
TOLUENE		0.01	0.03
ARGON		1.10	1.82
NITROGEN		61.91	71.38
CARBON DIOXIDE		0.09	0.17
1,4-DIMETHYLBENZENE		0.05	0.20
TOTAL		100.00	

GAS GRAVITY	0.8389
MOLECULAR WEIGHT	24.3
BTUS/FT3, NET	365.0015
RATIO H2 TO CARBON	0.3122
ERROR AS % OF RIC=	10.1

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SWEPI Coded Well, API Well No. 92-001-00002, 3337 ft.

SAMPLE NAME: WRC 181051 PNC-G-3A S5851

AIR	90.38
SULFUR DIOXIDE	0.03
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		2.41	0.22
HELIUM		0.00	0.00
METHANE	-53.0	44.76	32.10
ETHYLENE	C1/C2=165	3.79	4.75
ETHANE		0.272.%	
PROPYLENE		0.07	0.12
PROPANE		0.14	0.28
C4H8		0.00	0.00
ISOBUTANE		0.26	0.66
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.00	0.00
ISOPENTANE		0.12	0.38
PENTANE		0.00	0.00
C6H12 (GEN)		0.00	0.00
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.00	0.02
C7H16 (M1)		0.02	0.02
BENZENE		0.01	0.02
TOLUENE		0.00	0.00
ARGON		0.90	1.61
NITROGEN		46.98	58.88
CARBON DIOXIDE		0.29	0.57
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.7717
MOLECULAR WEIGHT	22.3
BTUS/FT3, NET	493.6404
RATIO H2 TO CARBON	0.3098
ERROR AS % OF RIC=	8.5

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SWEPI Coded Well, API Well No. 92-001-00002, 3499 ft.

SAMPLE NAME: WRC 180569 PNC-G-4 S5852

AIR	86.47
SULFUR DIOXIDE	0.05
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.87	0.08
HELIUM		0.00	0.00
METHANE	-51.0	61.33	47.49
ETHYLENE	C1/C2=77.5	0.00	0.00
ETHANE	-28.4	0.791.%	
PROPYLENE		0.00	0.00
PROPANE		0.00	0.00
C4H8		0.08	0.21
ISOBUTANE		0.03	0.10
BUTANE		0.14	0.39
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.04	0.15
ISOPENTANE		0.08	0.28
PENTANE		0.02	0.07
C6H12 (GEN)		0.00	0.00
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.00	0.02
C7H16 (M1)		0.01	0.01
BENZENE		0.00	0.01
TOLUENE		0.00	0.00
ARGON		0.64	1.24
NITROGEN		35.76	48.38
CARBON DIOXIDE		0.20	0.42
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.7149
MOLECULAR WEIGHT	20.7
BTUS/FT3, NET	587.3816
RATIO H2 TO CARBON	0.3286

ERROR AS % OF RIC= 9.2

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SWEPI Coded Well, API Well No. 92-001-00002, 4278 ft.

SAMPLE NAME: WRC 181051 PNC-G-5A S5853

AIR	93.23
SULFUR DIOXIDE	0.02
HYDROGEN SULFIDE	0.01

		MS MOL PCT	WT. %
HYDROGEN		0.43	0.04
HELIUM		0.00	0.00
METHANE	-49.6	50.91	34.45
ETHYLENE	C1/C2=14.1	0.00	0.00
ETHANE	-29.9	3.600.%	
PROPYLENE	C2/C3=1.8	0.00	0.00
PROPANE	-27.6	2.02	3.76
C4H8		0.65	1.54
ISOBUTANE		1.66	4.06
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.08	0.24
ISOPENTANE		1.36	4.13
PENTANE		0.00	0.00
C6H12 (GEN)		0.10	0.37
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.01	0.02
C7H16 (M1)		0.07	0.06
BENZENE		0.00	0.00
TOLUENE		0.00	0.00
ARGON		0.53	0.89
NITROGEN		38.25	45.23
CARBON DIOXIDE		0.35	0.65
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.8179
MOLECULAR WEIGHT	23.7
BTUS/FT3, NET	700.4614
RATIO H2 TO CARBON	0.2885

ERROR AS % OF RIC= 10.7

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SWEPI Coded Well, API Well No. 92-001-00002, 4294 ft.

SAMPLE NAME: WRC 181051 PNC-G-6A S5854

AIR	91.99
SULFUR DIOXIDE	0.01
HYDROGEN SULFIDE	0.01

		MS MOL PCT	WT. %
HYDROGEN		0.86	0.07
HELIUM		0.00	0.00
METHANE	-49.1	51.28	34.76
ETHYLENE	C1/C2=14.8	0.00	0.00
ETHANE		3.471.%	
PROPYLENE	C2/C3=1.3	0.23	0.40
PROPANE		2.70	5.04
C4H8		0.73	1.72
ISOBUTANE		1.90	4.66
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.08	0.24
ISOPENTANE		1.13	3.44
PENTANE		0.00	0.00
C6H12 (GEN)		0.00	0.00
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.01	0.03
C7H16 (M1)		0.02	0.02
BENZENE		0.01	0.03
TOLUENE		0.00	0.00
ARGON		0.77	1.31
NITROGEN		36.46	43.18
CARBON DIOXIDE		0.37	0.69
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	
GAS GRAVITY		0.8166	
MOLECULAR WEIGHT		23.6	
BTUS/FT3, NET		720.7595	
RATIO H2 TO CARBON		0.2875	
ERROR AS % OF RIC=		10.1	

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SWEPI Coded Well, API Well No. 92-001-00002, 4365 ft.

SAMPLE NAME: WRC 181051 PNC-G-7A S5855

AIR	93.27	
SULFUR DIOXIDE	0.01	
HYDROGEN SULFIDE	0.00	

		MS MOL PCT	WT. %
HYDROGEN		0.74	0.06
HELIUM		0.00	0.00
METHANE	-51.4	57.26	38.40
ETHYLENE	C1/C2=17.0	0.00	0.00
ETHANE		3.371.%	
PROPYLENE	C2/C3=1.6	0.00	0.00
PROPANE		2.09	3.86
C4H8		1.30	3.05
ISOBUTANE		2.28	5.54
BUTANE		1.17	2.84
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.17	0.50
ISOPENTANE		1.87	5.63
PENTANE		0.00	0.00
C6H12 (GEN)		0.05	0.16
C6H14 (M1)		0.20	0.71
C7H14 (GEN)		0.01	0.04
C7H16 (M1)		0.01	0.01
BENZENE		0.01	0.03
TOLUENE		0.00	0.00
ARGON		0.78	1.31
NITROGEN		28.69	33.62
CARBON DIOXIDE		0.00	0.00
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.8254
MOLECULAR WEIGHT	23.9
BTUS/FT3, NET	860.3499
RATIO H2 TO CARBON	0.2804

ERROR AS % OF RIC= 11.6

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 4990 ft.

SAMPLE NAME: WRC 181051 PNC-G-8A S5856

AIR	93.59
SULFUR DIOXIDE	0.02
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.64	0.04
HELIUM		0.00	0.00
METHANE	-47.6	43.64	23.74
ETHYLENE	C1/C2=8.9	3.16	3.00
ETHANE		4.881.%	
PROPYLENE	C2/C3=1.8	0.00	0.00
PROPANE		2.69	4.03
C4H8		0.31	0.58
ISOBUTANE		1.09	2.15
BUTANE		4.82	9.50
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.09	0.21
ISOPENTANE		4.40	10.76
PENTANE		1.82	4.46
C6H12 (GEN)		0.04	0.11
C6H14 (M1)		2.18	6.38
C7H14 (GEN)		0.31	1.02
C7H16 (M1)		0.05	0.03
BENZENE		0.02	0.04
TOLUENE		0.00	0.00
ARGON		0.54	0.73
NITROGEN		28.72	27.30
CARBON DIOXIDE		0.63	0.93
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	
GAS GRAVITY		1.0174	
MOLECULAR WEIGHT		29.5	
BTUS/FT3, NET		1128.0950	
RATIO H2 TO CARBON		0.2444	
ERROR AS % OF RIC=		11.3	

RELEASED TO PUBLIC FILE
DATE

SWEPI Coded Well, API Well No. 92-001-00002, 5174 ft.

SAMPLE NAME: WRC 182108 PNC-G-9A S5857

AIR	93.27	
SULFUR DIOXIDE	0.03	
HYDROGEN SULFIDE	0.00	

		MS MOL PCT	WT. %
HYDROGEN		0.94	0.08
HELIUM		0.00	0.00
METHANE	-47.4	31.32	19.95
ETHYLENE	C1/C2=12.2	0.01	0.01
ETHANE		2.561.%	
PROPYLENE	C2/C3=2.8	0.00	0.00
PROPANE		0.92	1.60
C4H8		0.07	0.15
ISOBUTANE		0.05	0.11
BUTANE		0.66	1.53
C5H8 +C6H10		0.00	0.01
C5H10 (M1)		0.06	0.17
ISOPENTANE		0.57	1.64
PENTANE		0.05	0.14
C6H12 (GEN)		0.17	0.58
C6H14 (M1)		0.10	0.33
C7H14 (GEN)		0.15	0.60
C7H16 (M1)		0.10	0.09
BENZENE		0.02	0.05
TOLUENE		0.01	0.05
ARGON		0.96	1.52
NITROGEN		61.18	68.11
CARBON DIOXIDE		0.08	0.14
1,4-DIMETHYLBENZENE		0.02	0.10
TOTAL		100.00	

GAS GRAVITY	0.8688
MOLECULAR WEIGHT	25.2
BTUS/FT3, NET	422.9866
RATIO H2 TO CARBON	0.2927

ERROR AS % OF RIC= 9.8

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 7739 ft.

SAMPLE NAME: WRC 180494 PNC-6-10A S5858

AIR	94.82
SULFUR DIOXIDE	0.05
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.37	0.03
HELIUM		0.00	0.00
METHANE	-44.8	60.58	44.99
ETHYLENE	C1/C2=12.6	0.06	0.08
ETHANE	-35.5	4.810.%	
PROPYLENE	C2/C3=3.8	0.00	0.00
PROPANE	-28.2	1.27	2.60
C4H8		0.00	0.00
ISOBUTANE		0.69	1.87
BUTANE		0.05	0.13
C5H8 +C6H10		0.01	0.04
C5H10 (M1)		0.08	0.26
ISOPENTANE		0.33	1.10
PENTANE		0.00	0.00
C6H12 (GEN)		0.02	0.08
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.16	0.72
C7H16 (M1)		0.12	0.12
BENZENE		0.02	0.06
TOLUENE		0.00	0.00
ARGON		0.66	1.22
NITROGEN		30.71	39.85
CARBON DIOXIDE		0.05	0.11
1,4-DIMETHYLBENZENE		0.00	0.01
TOTAL		100.00	

GAS GRAVITY	0.7453
MOLECULAR WEIGHT	21.6
BTUS/FT3, NET	711.6536
RATIO H2 TO CARBON	0.3072
ERROR AS % OF RIC=	11.5

PLACED TO PUBLIC FILE

SWEPI Coded Well, API Well No. 92-001-00002, 6055 ft.

SAMPLE NAME: WRC 181051 PNC-G-11A S5859

AIR	93.58
SULFUR DIOXIDE	0.01
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		1.03	0.10
HELIUM		0.00	0.00
METHANE	-44.4	83.12	64.22
ETHYLENE	C1/C2=20.4	0.10	0.13
ETHANE		4.081.%	
PROPYLENE	C2/C3=2.1	0.00	0.00
PROPANE		1.94	4.13
C4H8		0.99	2.66
ISOBUTANE		2.43	6.80
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.29	0.98
ISOPENTANE		2.26	7.85
PENTANE		0.00	0.00
C6H12 (GEN)		0.04	0.16
C6H14 (M1)		0.51	2.10
C7H14 (GEN)		0.01	0.04
C7H16 (M1)		0.10	0.11
BENZENE		0.01	0.04
TOLUENE		0.02	0.07
ARGON		0.72	1.39
NITROGEN		2.18	2.95
CARBON DIOXIDE		0.18	0.37
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.7164
MOLECULAR WEIGHT	20.7
BTUS/FT3, NET	1098.6519
RATIO H2 TO CARBON	0.2912
ERROR AS % OF RIC=	12.2

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 8323 ft.

SAMPLE NAME: WRC 182108 PNC-G-12A S5860

AIR	94.32
SULFUR DIOXIDE	0.02
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		1.16	0.10
HELIUM		0.00	0.00
METHANE	-41.2	42.92	29.84
ETHYLENE	C1/C2=15.1	0.00	0.00
ETHANE		2.851.%	
PROPYLENE		0.12	0.22
PROPANE		0.04	0.08
C4H8		0.00	0.00
ISOBUTANE		0.00	0.00
BUTANE		0.36	0.90
C5H8 +C6H10		0.00	0.02
C5H10 (M1)		0.00	0.00
ISOPENTANE		0.05	0.16
PENTANE		0.09	0.28
C6H12 (GEN)		0.02	0.06
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.13	0.55
C7H16 (M1)		0.10	0.10
BENZENE		0.01	0.05
TOLUENE		0.01	0.04
ARGON		0.96	1.66
NITROGEN		51.10	62.07
CARBON DIOXIDE		0.05	0.09
1,4-DIMETHYLBENZENE		0.02	0.08
TOTAL		100.00	

GAS GRAVITY	0.7963
MOLECULAR WEIGHT	23.1
BTUS/FT3, NET	470.7727
RATIO H2 TO CARBON	0.3166
ERROR AS % OF RIC=	11.3

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 8822 ft.

SAMPLE NAME: WRC 180569 PNC-6-13A S5861

AIR	89.21
SULFUR DIOXIDE	0.06
HYDROGEN SULFIDE	0.01

		MS MOL PCT	WT. %
HYDROGEN		0.83	0.09
HELIUM		0.00	0.00
METHANE	-40.1	72.47	59.27
ETHYLENE	C1/C2=23.8	0.00	0.00
ETHANE	-26.6	3.041.%	
PROPYLENE	C2/C3=6.5	0.02	0.05
PROPANE	-25.4	0.47	1.06
C4H8		0.17	0.47
ISOBUTANE		0.29	0.86
BUTANE		0.02	0.06
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.07	0.25
ISOPENTANE		0.13	0.47
PENTANE		0.03	0.10
C6H12 (GEN)		0.03	0.11
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.01	0.03
C7H16 (M1)		0.01	0.01
BENZENE		0.00	0.00
TOLUENE		0.00	0.00
ARGON		0.46	0.93
NITROGEN		21.74	31.07
CARBON DIOXIDE		0.23	0.52
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.6768
MOLECULAR WEIGHT	19.6
BTUS/FT3, NET	747.7671
RATIO H2 TO CARBON	0.3205
ERROR AS % OF RIC=	10.5

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 9938 ft.

SAMPLE NAME: WRC 181051 PNC-G-15A S5863

AIR	98.09
SULFUR DIOXIDE	0.01
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		3.25	0.27
HELIUM		0.00	0.00
METHANE	-41.9	69.62	45.64
ETHYLENE	C1/C2=11.7	2.34	2.68
ETHANE		5.953.%	
PROPYLENE	C2/C3=3.4	0.41	0.71
PROPANE		1.73	3.12
C4H8		2.26	5.19
ISOBUTANE		4.92	11.67
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.12	0.34
ISOPENTANE		5.63	16.60
PENTANE		0.00	0.00
C6H12 (GEN)		0.00	0.00
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.04	0.17
C7H16 (M1)		0.19	0.16
BENZENE		0.00	0.01
TOLUENE		0.00	0.00
ARGON		1.38	2.26
NITROGEN		0.00	0.00
CARBON DIOXIDE		2.15	3.86
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.8446
MOLECULAR WEIGHT	24.5
BTUS/FT3, NET	1262.5002
RATIO H2 TO CARBON	0.2639
ERROR AS % OF RIC=	13.4

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 9975 ft.

SAMPLE NAME: WRC 181051 PNC-G-16A S5864 10/22/86

AIR	94.95
SULFUR DIOXIDE	0.00
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		3.22	0.31
HELIUM		0.00	0.00
METHANE	-41.4	55.06	41.62
ETHYLENE	C1/C2=15.8	0.24	0.32
ETHANE		3.483.%	
PROPYLENE	C2/C3=4.1	0.10	0.20
PROPANE		0.84	1.74
C4H8		0.01	0.02
ISOBUTANE		0.55	1.51
BUTANE		0.00	0.00
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.00	0.00
ISOPENTANE		0.32	1.07
PENTANE		0.00	0.00
C6H12 (GEN)		0.00	0.00
C6H14 (M1)		0.00	0.00
C7H14 (GEN)		0.01	0.04
C7H16 (M1)		0.03	0.03
BENZENE		0.00	0.00
TOLUENE		0.00	0.00
ARGON		0.82	1.55
NITROGEN		35.32	46.66
CARBON DIOXIDE		0.00	0.00
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	
GAS GRAVITY		0.7323	
MOLECULAR WEIGHT		21.2	
BTUS/FT3, NET		622.5667	
RATIO H2 TO CARBON		0.3196	
ERROR AS % OF RIC=		11.5	

SWEPI Coded Well, API Well No. 92-001-00002, 10000 ft.

SAMPLE NAME: WRC 180494 PNC-6-17A S5865

AIR	85.65
SULFUR DIOXIDE	0.04
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.07	0.01
HELIUM		0.00	0.00
METHANE	-41.6	88.58	74.03
ETHYLENE	C1/C2=14.8	0.00	0.00
ETHANE	-28.4	5.990.%	
PROPYLENE	C2/C3=3.3	0.00	0.00
PROPANE	-27.3	1.80	4.13
C4H8		0.25	0.73
ISOBUTANE		0.03	0.10
BUTANE		1.23	3.73
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.22	0.81
ISOPENTANE		0.61	2.28
PENTANE		0.36	1.36
C6H12 (GEN)		0.32	1.38
C6H14 (M1)		0.35	1.56
C7H14 (GEN)		0.05	0.27
C7H16 (M1)		0.09	0.10
BENZENE		0.02	0.07
TOLUENE		0.00	0.00
ARGON		0.03	0.06
NITROGEN		0.00	0.00
CARBON DIOXIDE		0.00	0.00
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.6623
MOLECULAR WEIGHT	19.2
BTUS/FT3, NET	1069.9778
RATIO H2 TO CARBON	0.3015
ERROR AS % OF RIC=	10.5

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 10000 ft.

SAMPLE NAME: WRC 180494 PNC-6-18A S5866

AIR	26.37
SULFUR DIOXIDE	0.02
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.00	0.00
HELIUM		0.00	0.00
METHANE	-41.8	89.89	76.91
ETHYLENE	C1/C2=17.5	0.00	0.00
ETHANE	-28.6	5.150.%	
PROPYLENE	C2/C3=2.9	0.00	0.00
PROPANE	-28.2	1.75	4.12
C4H8		0.00	0.00
ISOBUTANE		0.36	1.12
BUTANE		0.58	1.79
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.13	0.50
ISOPENTANE		0.67	2.58
PENTANE		0.13	0.50
C6H12 (GEN)		0.23	1.05
C6H14 (M1)		0.28	1.27
C7H14 (GEN)		0.16	0.84
C7H16 (M1)		0.08	0.09
BENZENE		0.01	0.03
TOLUENE		0.00	0.00
ARGON		0.04	0.09
NITROGEN		0.50	0.74
CARBON DIOXIDE		0.04	0.08
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.6469
MOLECULAR WEIGHT	18.7
BTUS/FT3, NET	1038.6628
RATIO H2 TO CARBON	0.3060
ERROR AS % OF RIC=	3.9

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 9755 ft.

SAMPLE NAME: WRC 180494 PNC-6-19A S5867

AIR	4.98
SULFUR DIOXIDE	0.00
HYDROGEN SULFIDE	0.00

		MS MOL PCT	WT. %
HYDROGEN		0.00	0.00
HELIUM		0.00	0.00
METHANE	-41.8	90.67	79.21
ETHYLENE	C1/C2=18.1	0.00	0.00
ETHANE	-28.5	5.010.%	
PROPYLENE	C2/C3=2.9	0.00	0.00
PROPANE	-27.6	1.72	4.12
C4H8		0.00	0.00
ISOBUTANE		0.27	0.85
BUTANE		0.59	1.86
C5H8 +C6H10		0.00	0.00
C5H10 (M1)		0.09	0.34
ISOPENTANE		0.39	1.52
PENTANE		0.17	0.66
C6H12 (GEN)		0.15	0.70
C6H14 (M1)		0.22	1.04
C7H14 (GEN)		0.08	0.44
C7H16 (M1)		0.05	0.06
BENZENE		0.00	0.01
TOLUENE		0.00	0.00
ARGON		0.03	0.07
NITROGEN		0.48	0.74
CARBON DIOXIDE		0.07	0.17
1,4-DIMETHYLBENZENE		0.00	0.00
TOTAL		100.00	

GAS GRAVITY	0.6336
MOLECULAR WEIGHT	18.4
BTUS/FT3, NET	1019.2595
RATIO H2 TO CARBON	0.3096
ERROR AS % OF RIC=	3.2

RELEASED TO PUBLIC FILE
DATE _____

SWEPI Coded Well, API Well No. 92-001-00002, 3759 ft.

SAMPLE NAME: WRC 180494 PNC-6-20A S5868

AIR	99.30	Poor sample, all air.
SULFUR DIOXIDE	0.04	
HYDROGEN SULFIDE	0.00	

	MS MOL PCT	WT. %
HYDROGEN	3.20	0.20
HELIUM	0.00	0.00
METHANE	0.06	0.03
ETHYLENE	2.12	1.81
ETHANE	0.093.%	
PROPYLENE	0.00	0.00
PROPANE	1.45	1.95
C4H8	0.00	0.00
ISOBUTANE	3.80	6.75
BUTANE	0.00	0.00
C5H8 +C6H10	0.00	0.00
C5H10 (M1)	0.00	0.00
ISOPENTANE	4.10	9.01
PENTANE	0.00	0.00
C6H12 (GEN)	0.37	0.95
C6H14 (M1)	0.57	1.49
C7H14 (GEN)	0.81	2.41
C7H16 (M1)	0.57	0.37
BENZENE	0.08	0.18
TOLUENE	0.00	0.00
ARGON	6.03	7.36
NITROGEN	73.15	62.55
CARBON DIOXIDE	3.62	4.86
1,4-DIMETHYLBENZENE	0.00	0.00
TOTAL	100.00	

GAS GRAVITY	1.1311
MOLECULAR WEIGHT	32.8
BTUS/FT3, NET	435.3022
RATIO H2 TO CARBON	0.1942
ERROR AS % OF RIC=	10.8

DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DEPTH	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS	MEAN ±95%CL	VKA SUMMARY 7 SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
2718.00-2718.00	48871	1	SW	KC	CL	./	V	57	X 0.35±0.02			25	5	65	5	<1				PNC-S-60A
								39	A 0.31±0.02											
							VK	1	X 1.78±0.00											
2951.00-2951.00	48872	1	SW	KC	CL	./	V	55	X 0.30±0.02			7	4	85	4	<1				PNC-S-61A
								47	A 0.28±0.01											
							VK	1	X 3.53±0.00											
2951.00-2951.00	48873	1	SW	CP	CL	./	V	10	X 0.33±0.05			5	2	78	15					PNC-S-61A
								9	A 0.31±0.03											
3058.00-3058.00	48874	1	SW	CP	CL	./	V	30	X 0.31±0.03			5	2	78	15					PNC-S-62A
								23	A 0.29±0.02											
3347.00-3347.00	48875	1	SW	KC	CL	./	V	56	X 0.32±0.01			15	4	77	4					PNC-S-63A
								48	A 0.31±0.01											
3347.00-3347.00	48876	1	SW	CP	CL	./	V	13	X 0.29±0.04			4	3	89	4					PNC-S-63A
3493.00-3493.00	48877	1	SW	CP	SS	./	V	57	X 0.34±0.02			5	1	89	5					PNC-S-64A
								42	A 0.31±0.01											
3587.00-3587.00	48878	1	SW	CP	CLAY	./	V	56	X 0.33±0.02			5	2	89	4					PNC-S-83A
								45	A 0.31±0.01											
3650.00-3650.00	48879	1	SW	CP	CLAY	./	V	56	X 0.30±0.01			2	2	92	4					PNC-S-84A
3760.00-3760.00	48880	1	SW	KC	SLST	./	V	47	X 0.26±0.02			12	1	84	3					PNC-S-65A
								43	A 0.25±0.01											

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DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DEPTH	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS	REFLECTANCE MEAN ±95%CL	VKA SUMMARY ? SHC	OIL PRONE 1	OIL PRONE 1/2	OIL PRONE 2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
3760.00-3760.00	48881	1	SW	CP	SLST	./	V	15	X 0.29±0.03			5	<1	92	3					PNC-S-65A
								14	A 0.28±0.02											
3914.00-3914.00	48882	1	SW	CP	CLAY	./	V	57	X 0.33±0.02			5	2	88	5					PNC-S-85A
								38	A 0.29±0.01											
3975.00-3975.00	48883	1	SW	CP	CLAY	./	V	53	X 0.31±0.02			5	1	84	10					PNC-S-86A
4284.00-4284.00	CONSOL	-					V	104	X 0.34±0.01	SEE INDIVIDUAL SAMPLES FOR VKA										C1-860912JAT
								92	A 0.33±0.01											
C1-860912JAT = 48884 + 48885																				
4284.00-4284.00	48884	1	SW	KC	SLST	./	V	53	X 0.37±0.02			15	4	76	5					PNC-S-66A
4284.00-4284.00	48885	1	SW	CP	SLST	./	V	51	X 0.31±0.01			5	1	89	5					PNC-S-66A
4367.00-4367.00	48886	1	SW	CP	CLAY	./	V	54	X 0.34±0.02			5	2	90	3					PNC-S-87A
								43	A 0.32±0.01											
4463.00-4463.00	48887	1	SW	CP	CLAY	./	V	54	X 0.34±0.02			5	2	91	2					PNC-S-88A
								47	A 0.35±0.01											
4699.00-4699.00	48888	1	SW	KC	CL	./	V	54	X 0.32±0.02			25	3	67	5					PNC-S-67A
								49	A 0.30±0.01											
4699.00-4699.00	48889	1	SW	CP	CL	./	V	11	X 0.32±0.05			10	2	84	4					PNC-S-67A
4979.00-4979.00	48890	1	SW	CP	CLAY	./	V	55	X 0.34±0.02			5	1	91	3					PNC-S-89A
								54	A 0.33±0.01											

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DEPTH	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS	REFLECTANCE MEAN ±95%CL	? SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
5200.00-5213.00	48892	1	SW	CP	CLAY	./	V	57	X 0.33±0.02		<1		2	96	2					PNC-S-91A
5213.00-5213.00	48891	1	SW	CP	CLAY	./	V	54	X 0.33±0.01			7	1	89	3					PNC-S-90A
5386.00-5386.00	48893	1	SW	CP	CLAY	./	V	50 47	X 0.34±0.02 A 0.33±0.01			5	2	91	2					PNC-S-92A
5773.00-5773.00	48894	1	SW	CP	CLAY	./	V	56 53	X 0.40±0.01 A 0.40±0.01			5	1	92	2					PNC-S-93A
6005.00-6005.00	48895	1	SW	KC	CL	./	V	48 42	X 0.39±0.02 A 0.38±0.02				1	95	4					PNC-S-68A
6005.00-6005.00	48896	1	SW	CP	CL	./	V	12	X 0.40±0.02			2	1	95	2					PNC-S-68A
6141.00-6141.00	48897	1	SW	CP	CLAY	./	V	55 53	X 0.36±0.02 A 0.36±0.01			5	2	89	4					PNC-S-94A
6187.00-6187.00	48898	1	SW	KC	CL	./	V	52	X 0.38±0.02			15	3	80	2					PNC-S-69A
6187.00-6187.00	48899	1	SW	CP	CL	./	V	16	X 0.35±0.03			5	1	93	1					PNC-S-69A
6429.00-6429.00	48900	1	SW	KC	CL	./	V	52	X 0.38±0.02				3	95	3					PNC-S-70A
6429.00-6429.00	48901	1	SW	CP	CL	./	V	12	X 0.40±0.03			5	1	92	2					PNC-S-70A
6463.00-6463.00	48902	1	SW	CP	CL	./	V	53	X 0.41±0.02			5	1	92	2					PNC-S-71A
6827.00-6827.00	48903	1	SW	KC	CL	./	V VK	50 2	X 0.39±0.02 X 4.13±4.64			30	4	63	3	<1				PNC-S-72A
6827.00-6827.00	48904	1	SW	CP	CL	./	V	11	X 0.37±0.03			3	1	95	1					PNC-S-72A

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DEPTH	V #	R#	ORIG	PREP	LITH	AGE/FM	Ro	REFLECTANCE OBS	MEAN :95%CL	? SHC	OIL 1	PRONE 1/2	2	GAS 3	NON 4	QUALIFIERS COK	ADD	CAV	MAC QUAL	SAM #
7090.00-7090.00	48905	1	SW	CP	CL	./	V	57 X	0.38±0.02			3	1	92	4					PNC-S-73A
7118.00-7118.00	48906	1	SW	KC	CL	./	V	54 X	0.41±0.02			15	3	76	6					PNC-S-74A
								48 A	0.43±0.02											
7118.00-7118.00	48907	1	SW	CP	CL	./	V	18 X	0.40±0.04			3	1	95	1					PNC-S-74A
7242.00-7242.00	48908	1	SW	CP	CL	./	V	52 X	0.38±0.02			4	1	92	3					PNC-S-75A
								44 A	0.40±0.02											
7294.00-7294.00	48909	1	SW	CP	CL	./	V	52 X	0.40±0.02			3	1	92	4					PNC-S-76A
7377.00-7377.00	48910	1	SW	CP	CL	./	V	53 X	0.41±0.02			5	<1	92	3					PNC-S-77A
								46 A	0.43±0.02											
7420.00-7420.00	48911	1	SW	CP	CL	./	V	52 X	0.46±0.02			5	1	93	1	<1				PNC-S-78A
								51 A	0.46±0.02											
							VK	1 X	2.88±0.00											
7425.00-7425.00	48912	1	SW	KC	SH	./	V	53 X	0.39±0.02		<1	25	4	69	3	<1				PNC-S-79A
								43 A	0.38±0.01											
							VK	1 X	3.52±0.00											
7425.00-7425.00	48913	1	SW	CP	SH	./	V	10 X	0.39±0.04			3	2	94	2					PNC-S-79A
7432.00-7432.00	48914	1	SW	CP	SLST	./	V	53 X	0.39±0.02			5	1	92	2					PNC-S-80A
								47 A	0.40±0.02											
7565.00-7565.00	48915	1	SW	CP	CLAY	./	V	55 X	0.41±0.02			5	1	90	4					PNC-S-95A
								53 A	0.41±0.02											
7608.00-7608.00	48916	1	SW	KC	CLAY	./	V	54 X	0.42±0.02			25	3	68	5					PNC-S-81A
								50 A	0.43±0.02											
7608.00-7608.00	48917	1	SW	CP	CLAY	./	V	18 X	0.39±0.03			3	1	94	2					PNC-S-81A
7648.00-7648.00	48918	1	SW	CP	CLAY	./	V	55 X	0.44±0.02			5	2	88	5					PNC-S-82A
								51 A	0.45±0.02											

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

SAMPLE ORIGIN

CO = Core	JB = Junk Basket	OT = Outcrop
PD = Picked Ditch	MI = Mine	SW = Sidewall
UD = Unpicked Ditch	MS = Quarry	NA = Not Applicable
ND = Not Determinable	OB = Ocean Bottom	X = Extracted

PREPARATION TYPES

KC = Kerogen concentrate	RM = Rock Mount	RP = Rock Pellet
CP = Crushed Pellet or Coal Pellet		

GROUPINGS FOR VKA SUMMARY

SHC	(TYPE ? - Solid Hydrocarbons)	= B,B1,BK,BM,B1,B2,B3,E,TH,XO,CN
1	(TYPE 1 - Alginites)	= A,AB,AC,AG,AL,AN,AS,AT
1/2	(TYPE 1 or 2 - Structureless Organic Matter)	= KU,KA,KI,KK,KM
2	(TYPE 2 - Liptinites)	= C,FL,LP,LD,PC,PI,PT,R,SP,SU,XL
3	(TYPE 3 - Humic)	= AR,BR,CC,CH,CL,CT,DC,DN,G,GC,GK,GL,GO,GR,GS, H,HC,HD,HT,TC,TL,TX,UL,V,VD,VK,VO,VR,VS,XH
4	(TYPE 4 - Inert)	= F,GI,GP,ID,IN,S,SC
COK	(Coked Organic Matter)	= CN,BK,GK,KK,VK
ADD	(Drilling Additive)	= AD
CAV	(Caved Material)	= VC,LC,IC

MACERAL QUALITY CODES

C = Caved	M = Migrated (shc's)	R = Reworked
D = Degraded (liptinites)	O = Oxidized	S = Bad Surface
I = Few Measurable Particles	P = Overpressured Section	
L = Lipid Effect	Q = Questionable Maceral ID	

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MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

STANDARD COMMENTS REGARDING REFLECTED LIGHT ANALYSES

Preparation methods for reflected light analysis include the following: 1)Rock Mount (RM) - a piece of whole rock mounted perpendicular to bedding, 2)Crushed Pellet or Coal Pellet (CP) - crushed pieces of rock or coal, 3)Rock Pellet (RP) - randomly oriented pieces of uncrushed or only slightly crushed rock and 4) Kerogen Concentrate (KC) - the HF-HCl-insoluble portion of a rock in which organic matter is concentrated relative to the whole rock. All four sample types are mounted (or mixed) with epoxy and polished.

Sample preparation affects the visual kerogen analysis. Liptinites (sporinite, resinite, cutinite, alginite) which are visible in whole rock preparations can be washed away during preparation of a kerogen concentrate. Conversely, SOM which is observed in a kerogen concentrate, is often practically invisible or grossly underestimated in whole rock preparations. In the cases where VKA data are available from both types of preparations on the same sample, an interpreted VKA can be constructed to eliminate the bias of the preparations.

The standard measure of maturity is vitrinite (and graptolite) reflectance. Other measures of maturity are calibrated to vitrinite reflectance and expressed in terms of their vitrinite reflectance equivalent (VRE). The symbol "*" following a maceral type indicates an alternate maturity measurement was used. The reflectance value reported for the maceral with the "*" is the VRE.

The VRE for solid hydrocarbons is based on the tentative calibration of solid hydrocarbon reflectance with vitrinite reflectance which was established in samples where both macerals were present and clearly distinguishable. When the reflectance is greater than 2.0%, solid hydrocarbon and vitrinite have the same reflectance, and therefore the Ro of solid hydrocarbon can be used interchangeably with the Ro of vitrinite.

Where two or more mean reflectance values are presented for a particular maceral, the A mean is preferred and the X group refers to all the reflectance values measured on this maceral in the sample.

Visual kerogen analysis refers to the relative amounts of each type of kerogen to the total kerogen. It does not indicate quantitatively the amount of kerogen in the sample.

Liptinite attains a reflectance similar to that of vitrinite at about VRE 1.2-1.5% and can no longer be distinguished from vitrinite.

The mean reflectance values for macerals with fewer than ten (10) observations are reported for information only. They are not considered to be statistically valid measures of maturity.

DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

STANDARD COMMENTS REGARDING REFLECTED LIGHT ANALYSES
(cont'd)

The VKA Summary reports macerals grouped according to kerogen type and qualifiers which may be used in the evaluation of the source potential of the examined samples. The columns 'SHC','1','1/2','2','3','4','ADD'and 'CAV' should sum to 100. Material listed as 'COK' has already been included under the appropriate kerogen type for the uncoked maceral.

The grouping scheme for the VKA summary appears in the table above. Maceral codes are defined following the detailed VKA report.

A V # of CONSOL indicates that the data reported for a given depth interval are consolidated from a number of samples. The line following the consolidated data indicates the number, date and author of the consolidation and the V #'s of the samples that contributed to the consolidation. Usually no VKA will be reported for a consolidated sample, but occasionally there will be an interpreted VKA which can be taken to apply to all samples in the consolidation.

COMMENTS REGARDING THESE SAMPLES

THE REFLECTANCE TREND THROUGH THE SIDEWALL CORE DATA IS CONSTRUCTED TO AVOID BOTH HIGHER REFLECTING REWORKED MATERIAL IN THE TOP OF THE WELL AND SLIGHTLY FLUORESCING, LOW REFLECTING MATERIAL IN THE BOTTOM OF THE WELL.

JAT 11/12/86

ANF/JAT/LFHP

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DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DETAILED VKA REPORT

SAMPLE ID			SOLID HYDROCARBONS					ALGAE		STRUCT. ORG. MAT.					LIPTIN.			VITRINITES					GRAPTOLITES				INERTS			OTHER	
V#	R#	%OM	B	B!	BR	BK	TH	A	AB	KA	KM	KI	KU	KK	RES	LPT	HUM	VS	V	VO	VK	CT	G	GS	GO	GK	SF	IN	CB	ADD	CAV
48871	1	75								25						5		<1	59	5	<1						3	2			
48872	1	70								7						4		2	81	2	<1						2	2			
48873	1	25								5						2			78								10	5			
48874	1	15								5						2			78								10	5			
48875	1	70								15						4		<1	77								2	2			
48876	1	10								4						3			89								2	2			
48877	1	15								5						1			86	3							3	2			
48878	1	15								5						2			87	2							2	2			
48879	1	15								2						2		1	91								1	3			
48880	1	60								12						1			84								1	2			
48881	1	3										5				<1			92								1	2			
48882	1	15								5						2		<1	88								3	2			
48883	1	25								5					<1	1		1	83								5	5			
48884	1	70								15						4			76	<1							3	2			
48885	1	25								5						1		1	88								3	2			
48886	1	15								5						2			90								2	1			
48887	1	15								5						2			91	<1							1	1			
48888	1	70								25						3		1	66	<1							3	2			
48889	1	15								10						2		1	83								2	2			
48890	1	15								5						1			91								2	1			
48892	1	80						<1								2	40	1	55								1	1			
48891	1	25								5		2			<1	1		<1	89								1	2			
48893	1	20								5						2			91								1	1			
48894	1	15								5						1			92	<1							1	1			
48895	1	80														1	40	1	53	1							2	2			
48896	1	15								2						1			95								1	1			
48897	1	25								5		<1			<1	1			89								2	2			
48898	1	80								15					<1	3		1	79	<1							1	1			
48899	1	20								5		<1			<1	1			93								1	<1			
48900	1	70														3	40	2	53	<1							1	2			

DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

DETAILED VKA REPORT

SAMPLE ID			SOLID HYDROCARBONS					ALGAE		STRUCT. ORG. MAT.					LIPTIN.		VITRINITES						GRAPTOLITES				INERTS			OTHER	
V#	R#	%OM	B	B!	BR	BK	TH	A	AB	KA	KM	KI	KU	KK	RES	LPT	HUM	VS	V	VO	VK	CT	G	GS	GO	GK	SF	IN	CB	ADD	CAV
48901	1	15								5						1			92								1	1			
48902	1	15								5						1		1	90	1							1	1			
48903	1	65								30					<1	4		<1	62	<1	<1						2	1			
48904	1	10								3						1			95								<1	1			
48905	1	15								3						1			92								2	2			
48906	1	65								15						3		75		1							4	2			
48907	1	20								3		<1			<1	1			95								<1	1			
48908	1	15								4						1			92								2	1			
48909	1	10								3						1			92	<1							2	2			
48910	1	10								5		<1				<1			92								2	1			
48911	1	15								5		<1			<1	1		5	87	<1	<1						1	<1			
48912	1	70						<1		25					<1	4		2	66	<1	<1						2	1			
48913	1	15								3						2		2	92								1	1			
48914	1	15								5		<1			<1	1		3	89								1	1			
48915	1	10								5						1		2	88								2	2			
48916	1	65								25						3		2	66	<1							3	2			
48917	1	15								3						1		<1	94								1	1			
48918	1	15								5		<1			<1	1			88								3	2			

DATE: NOVEMBER 14, 1986

MATURITY/VKA REPORT
SHELL WESTERN E&P INC.
CODED WELL
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

KEY TO ABBREVIATIONS IN DETAILED VKA REPORT

%OM = % Organic Matter in the Preparation
B = Indigenous Solid Hydrocarbons (B,BI,E)
B' = Other Solid Hydrocarbons (BM,B1,B2,B3,BK,XO)
BR = Reworked Solid Hydrocarbons
BK = Coked Solid Hydrocarbons
TH = Thucholites
A = Algae - Dominantly Marine (A,AC,AG,AL,AN,AS,AT)
AB = Botryococcus Algae - Nonmarine
KA = Amorphous Structureless Org. Matter
KM = Massive Structureless Org. Matter
KI = Micrinized Structureless Org. Matter
KU = Undifferentiated Structureless Org. Matter
KK = Coked Structureless Org. Matter
RES = Resinite and Fluorinite (R,FL)
LPT = Liptinitic Macerals (C,LP,LD,PA,PC,PI,PT,SP,SU,XL)
HUM = Huminitic Macerals (AR,CH,DN,GL,H,HC,HD,HT,TX,UL)
VS = Saprovitrinite
V = Vitrinite (V,GC,CC,CL,DC,TC,TL,VD,XH)
VO = Oxidized or Reworked Vitrinite (VO,VR)
VK = Coked Vitrinite
CT = Chitin
G = Graptolites
GS = Saprograptolites
GO = Oxidized or Reworked Graptolites (GO,GR)
GK = Coked Graptolites
SF = Semifusinite (S)
IN = Inerts (SC,F,GI,ID,IN,MA,MI)
CB = Carbon Forms (GP,CN)
ADD = Additive (AD)
CAV = Caved Material (VC,LC,IC)

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DATE: DECEMBER 5, 1986

RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNGINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH	AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
8449.00-8449.00	PNC-S-138A	ASIS	Y	PO	SW	CL DK GRY	./	0.00	0.02	0.18	0.20	<1.05	475	1.31	38867	1
9846.00-9846.00	PNC-S-249A	ASIS	Y	PO	SW	CL DK GRY MUDDY	./	0.00	0.03	0.15	0.18	<1.05	480	1.36	38896	1
9960.00-9960.00	PNC-S-268A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.03	0.15	0.18	<1.05	480	1.44	38901	1

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ANCHORAGE, ALASKA

STANDARD COMMENTS REGARDING P-FID

FID PEAK TEMPERATURE IS NOT OUR MOST RELIABLE INDICATOR OF MATURITY. OTHER METHODS (ESPECIALLY VR) SHOULD BE USED TO CONFIRM THE VRE IF AT ALL POSSIBLE. THE MOST RELIABLE RANGE FOR P-FID IS VRE OF 1-2%. BELOW A VRE OF 1% THE CALIBRATION IS NOT USEABLE AND ABOVE A VRE OF 2% THE YIELDS ARE OFTEN SO LOW THAT THE MATURITY INDICATED MAY BE IN CONSIDERABLE ERROR. SALTS AND MINERALS WHEN PRESENT INTERFERE WITH THE PYROLYSIS PEAK AND MAY PRODUCE AN UNRELIABLE VRE DETERMINATION BY P-FID.

ORIGIN

CO = Core
PD = Picked Ditch
UD = Unpicked Ditch
ARTI = Artificial
HEAD = Wellhead
SEPR = Separator
DST = Drill Stem Test
WELL = to be used only if spling location at well not known

JB = Junk Basket
MI = Mine
MS = Quarry
ADD = Additive
MPT = Mudpit
MFT = Mud Filtrate
SEEP = Seep Sample
FIT = Fluid Test

OT = Outcrop
SW = Sidewall
OB = Ocean Bottom
BLLN = Blooey Line
FLLN = Flowline
TANK = Tank Farm
RFT = Reservoir Fluid Test
MGAS = Mud gas

SAMPLE PREP

ASIS = As Received
CENT = Centrifuged
COMB = Combined/Composited
DIAL = Dialyzed
EXPT = Experimental(If prep is not defined for artificial samples)
EXTR = Extracted in analytical with chloroform-methanol
HLS = Heavy Liquid Separation
light fraction
Heavy fraction
ZON? = Ill defined depth
ODRY = Oven Dried

FDRY = Freeze Dried
FROZ = Frozen
PYRO = Pyrolyzed
HEAT = Heated
ADSB = Adsorted Organics
WASH = Washed with Solvent

EXTC = Extracted in GCS w/chlorothene
EXTH = Extracted in analytical w/cyclo-hexane
DISA = Disaggregation-heated at 345 deg C for 3 wks
LCHD = Leached
OGAS = Oil gas ratio (PFID)

FID PREP

ASIS = As Received
CG = Coarse Grained
CHIP = 1 Chip (not powdered)
DIAL = Dialyzed
OG = Oil gas ratio

EXTC= Extracted w-chlorothene
FROZ = Frozen
PO = Powdered
OS = Oil and sand mix

Q (QUALITY)

Y = Yes, sample is appropriate for well interpretation.
N = No, sample is not appropriate for well interpretation.

DATE: SEPTEMBER 29, 1986

RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
2951.00-2951.00	PNC-S-61A	ASIS	Y	PO	SWC	CL ./ SH LT TO M GRY	0.00	0.03	0.16	0.19	<1.05	475	2.24	38419	1
3058.00-3058.00	PNC-S-62A	ASIS	Y	PO	SWC	CL ./ SH LT TO M GRY	0.00	0.03	0.13	0.16	<1.05	470	1.76	38420	1
3347.00-3347.00	PNC-S-63A	ASIS	Y	PO	SWC	CL ./ SH M GRY	0.00	0.09	0.18	0.27	<1.05	470	1.84	38421	1
3587.00-3587.00	PNC-S-83A	ASIS	Y	PO	SWC	CLSH ./ LT TO M GRY W/PLANT FRAG	0.02	0.27	0.24	0.53	<1.05	455	1.81	38440	1
3650.00-3650.00	PNC-S-84A	ASIS	Y	PO	SWC	CLSH ./ SANDY LT TO MD GRY W/PLANT FRAG	0.02	0.24	0.21	0.47	<1.05	460	1.98	38441	1
3760.00-3760.00	PNC-S-65A	ASIS	Y	PO	SWC	SLST ./ SS LT GRY	0.11	0.60	0.13	0.84	<1.05	455	1.24	38422	1
3914.00-3914.00	PNC-S-85A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY	0.00	0.04	0.25	0.29	<1.05	475	2.25	38442	1
3975.00-3975.00	PNC-S-86A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY W/PLANT FRAG	0.00	0.04	0.18	0.22	<1.05	470	2.18	38443	1
4284.00-4284.00	PNC-S-66A	ASIS	Y	PO	SWC	SLST ./ LT GRY W/PLANT FRAG	0.01	0.18	0.19	0.38	<1.05	465	1.90	38423	1
4367.00-4367.00	PNC-S-87A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY W/PLANT FRAG	0.00	0.09	0.33	0.42	<1.05	470	1.97	38444	1
4463.00-4463.00	PNC-S-88A	ASIS	Y	PO	SWC	CLSH ./ M GRY	0.00	0.05	0.22	0.27	<1.05	470	1.89	38445	1
4699.00-4699.00	PNC-S-67A	ASIS	Y	PO	SWC	CL ./ SH LT TO M GRY	0.00	0.03	0.20	0.23	<1.05	475	1.64	38424	1
[illegible]00-4979.00	PNC-S-89A	ASIS	Y	PO	SWC	CLSH ./ M GRY	0.00	0.05	0.23	0.28	<1.05	475	1.72	38446	1

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MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA
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RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
5213.00-5213.00	PNC-S-90A	ASIS	Y	PO	SWC	CLSH ./ MD TO MD DRK GRY W/PLANT FRAG	0.00	0.04	0.21	0.25	<1.05	475	2.08	38447	
5386.00-5386.00	PNC-S-92A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY	0.00	0.04	0.22	0.26	<1.05	470	1.69	38448	1
5773.00-5773.00	PNC-S-93A	ASIS	Y	PO	SWC	CLSH ./ M GRY W/PLANT FRAG	0.00	0.04	0.19	0.23	<1.05	470	1.84	38449	1
6005.00-6005.00	PNC-S-68A	ASIS	Y	PO	SWC	CL ./ SH LT TO M GRY	0.00	0.03	0.20	0.23	<1.05	475	1.81	38425	1
6141.00-6141.00	PNC-S-94A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY W/TRACE PLANT FRAG	0.00	0.04	0.26	0.30	<1.05	470	2.09	38450	1
6187.00-6187.00	PNC-S-69A	ASIS	Y	PO	SWC	CL ./ SH SLTY LT TO M GRY W/PLANT FRAG	0.00	0.04	0.28	0.32	<1.05	475	2.32	38426	1
6429.00-6429.00	PNC-S-70A	ASIS	Y	PO	SWC	CL ./ SH LT TO M GRY	0.00	0.03	0.23	0.26	<1.05	475	1.90	38427	1
6463.00-6463.00	PNC-S-71A	ASIS	Y	PO	SWC	CLSH ./ LT TO M GRY	0.00	0.03	0.21	0.24	<1.05	475	1.83	38428	1
6827.00-6827.00	PNC-S-72A	ASIS	Y	PO	SWC	CLSH ./ SLTY LT TO M GRY W/PLANT FRAG	0.00	0.04	0.27	0.31	<1.05	475	1.71	38429	1
7090.00-7090.00	PNC-S-73A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY	0.00	0.04	0.30	0.34	<1.05	475	2.01	38430	1
7118.00-7118.00	PNC-S-74A	ASIS	Y	PO	SWC	CLSH ./ SLTY TO MD GRY W/PLANT FRAG	0.00	0.04	0.34	0.38	<1.05	470	2.33	38431	1
7242.00-7242.00	PNC-S-75A	ASIS	Y	PO	SWC	CLSH ./ LT TO MD GRY	0.00	0.03	0.21	0.24	<1.05	475	1.61	38432	1
7294.00-7294.00	PNC-S-76A	ASIS	Y	PO	SWC	CLSH ./ MD GRY	0.00	0.06	0.33	0.39	<1.05	475	1.82	38433	

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RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH	AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
7377.00-7377.00	PNC-S-77A	ASIS	Y	PO	SWC	CLSH	./ LT TO MD GRY	0.00	0.02	0.21	0.23	<1.05	480	1.90	38434	1
7420.00-7420.00	PNC-S-78A	ASIS	Y	PO	SWC	CLSH	./ LT TO MD GRY	0.00	0.08	0.28	0.36	<1.05	475	1.75	38435	1
7425.00-7425.00	PNC-S-79A	ASIS	Y	PO	SWC	SLSH	./ M GRY W/PLANT FRAG	0.00	0.11	0.39	0.50	<1.05	475	2.43	38436	1
7432.00-7432.00	PNC-S-80A	ASIS	Y	PO	SWC	SLST	./ SLST-SS LT GRY W/PLANT FRAG	0.00	0.11	0.33	0.44	<1.05	475	1.85	38437	1
7565.00-7565.00	PNC-S-95A	ASIS	Y	PO	SWC	CLSH	./ LT TO MD GRY MUDDY	0.00	0.03	0.24	0.27	<1.05	475	1.71	38451	1
7608.00-7608.00	PNC-S-81A	ASIS	Y	PO	SWC	CLSH	./ LT TO M GRY	0.00	0.03	0.22	0.25	<1.05	480	1.70	38438	1
7648.00-7648.00	PNC-S-82A	ASIS	Y	PO	SWC	CLSH	./ LT TO M GRY	0.00	0.03	0.19	0.22	<1.05	480	1.57	38439	1
8025.00-8025.00	PNC-S-33A	ASIS	Y	PO	CORE	SH	./ DK GRY TO BRN GRY	0.00	0.01	0.15	0.16	<1.05	475	1.55	38267	1

STANDARD COMMENTS REGARDING P-FID

FID PEAK TEMPERATURE IS NOT OUR MOST RELIABLE INDICATOR OF MATURITY. OTHER METHODS (ESPECIALLY VR) SHOULD BE USED TO CONFIRM THE VRE IF AT ALL POSSIBLE. THE MOST RELIABLE RANGE FOR P-FID IS VRE OF 1-2%. BELOW A VRE OF 1% THE CALIBRATION IS NOT USEABLE AND ABOVE A VRE OF 2% THE YIELDS ARE OFTEN SO LOW THAT THE MATURITY INDICATED MAY BE IN CONSIDERABLE ERROR. SALTS AND MINERALS WHEN PRESENT INTERFERE WITH THE PYROLYSIS PEAK AND MAY PRODUCE AN UNRELIABLE VRE DETERMINATION BY P-FID.

ORIGIN

CO = Core	JB = Junk Basket	OT = Outcrop
PD = Picked Ditch	MI = Mine	SW = Sidewall
UD = Unpicked Ditch	MS = Quarry	OB = Ocean Bottom
ARTI = Artificial	ADD = Additive	BLLN = Blooey Line
HEAD = Wellhead	MPT = Mudpit	FLLN = Flowline
SEPR = Separator	MFT = Mud Filtrate	TANK = Tank Farm
DST = Drill Stem Test	SEEP = Seep Sample	RFT = Reservoir Fluid Test
WELL = to be used only if spling location at well not known		

SAMPLE PREP

ASIS = As Received	FDRY = Freeze Dried
CENT = Centrifuged	FROZ = Frozen
COMB = Combined/Composited	PYRO = Pyrolyzed
DIAL = Dialyzed	HEAT = Heated
EXPT = Experimental(If prep is not defined for artificial samples)	ADSB = Adsorted Organics
	WASH = Washed with Solvent
EXTR = Extracted in analytical with chloroform-methanol	EXTC = extracted in GCS with chlorothene
HLS = Heavy Liquid Separation light fraction Heavy fraction	ODRY = Oven Dried
	DISA = Disaggregation-heated at 345 deg C for 3 wks
ZON? = Ill defined depth	

FID PREP

ASIS = As Received	EXTC= Extracted w-chlorothene
CG = Coarse Grained	FROZ = Frozen
CHIP = 1 Chip (not powdered)	PO = Powdered
DIAL = Dialyzed	OS = Oil and sand mix

Q (QUALITY)

Y = Yes, sample is appropriate for well interpretation.
N = No, sample is not appropriate for well interpretation.

RELEASED TO PUBLIC FILE
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DATE: NOVEMBER 24, 1986

RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNGINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH	AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
8108.00-8108.00	PNC-S-127A	ASIS	Y	PO	SW	CL	./ DK GRY TO BLK MUDDY	0.00	0.03	0.18	0.21	<1.05	475	1.51	38865	1
8266.00-8266.00	PNC-S-132A	ASIS	Y	PO	SW	CL	./ M GRY	0.00	0.02	0.11	0.13	<1.05	480	1.10	38866	1
8551.00-8551.00	PNC-S-142A	ASIS	Y	PO	SW	CL	./ LT TO M GRY	0.00	0.02	0.18	0.20	<1.05	475	1.64	38868	1
8620.00-8620.00	PNC-S-144A	ASIS	Y	PO	SW	CL	./ LT TO M GRY	0.00	0.02	0.14	0.16	<1.05	475	1.29	38869	1
8736.00-8736.00	PNC-S-148A	ASIS	Y	PO	SW	CL	./ LT TO M GRY	0.00	0.03	0.20	0.23	<1.05	480	1.53	38870	1
8811.00-8811.00	PNC-S-155A	ASIS	Y	PO	SW	CL	./ LT TO M GRY	0.00	0.02	0.17	0.19	<1.05	485	1.52	38871	1
8910.00-8910.00	PNC-S-160A	ASIS	Y	PO	SW	CL	./ M TO M DK GRY MUDDY	0.00	0.02	0.21	0.23	<1.05	480	1.33	38872	1
8935.00-8935.00	PNC-S-162A	ASIS	Y	PO	SW	CL	./ LT TO M GRY TR PLANT FRAG	0.00	0.03	0.23	0.26	<1.05	480	1.62	38873	1
8958.00-8958.00	PNC-S-164A	ASIS	Y	PO	SW	CL	./ SILTY LT TO M GRY	0.01	0.05	0.19	0.25	<1.05	480	1.16	38874	1
9020.00-9020.00	PNC-S-167A	ASIS	Y	PO	SW	CL	./ LT M GRY MUDDY	0.00	0.03	0.25	0.28	<1.05	480	1.43	38875	1

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ANCHORAGE, ALASKA
OCS DISTRICT OFFICE

DATE: NOVEMBER 24, 1986

RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNGINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
9130.00-9130.00	PNC-S-173A	ASIS	Y	PO	SW	SLST ./ LT TO M GRY MUDDY	0.00	0.03	0.22	0.25	<1.05	480	1.40	38876	1
9214.00-9214.00	PNC-S-177A	ASIS	Y	PO	SW	CL ./ DK GRY	0.00	0.03	0.20	0.23	<1.05	480	1.45	38877	1
9243.00-9243.00	PNC-S-180A	ASIS	Y	PO	SW	CL ./ M GRY	0.00	0.03	0.19	0.22	<1.05	480	1.52	38878	1
9256.00-9256.00	PNC-S-182A	ASIS	Y		SW	CL ./ M GRY	0.00	0.02	0.21	0.23	<1.05	480	1.48	38879	.
9306.00-9306.00	PNC-S-186A	ASIS	Y	PO	SW	CL ./ M TO M DK GRY	0.00	0.03	0.21	0.24	<1.05	480	1.41	38880	1
9330.00-9330.00	PNC-S-188A	ASIS	Y	PO	SW	CL ./ DK GRY	0.00	0.03	0.19	0.22	<1.05	480	1.48	38881	1
9392.00-9392.00	PNC-S-192A	ASIS	Y	PO	SW	CL ./ LT AND DK GRY	0.00	0.03	0.19	0.22	<1.05	480	1.44	38882	1
9422.00-9422.00	PNC-S-195A	ASIS	Y	PO	SW	CL ./ DK GRY	0.00	0.03	0.16	0.19	<1.05	480	1.42	38883	1
9446.00-9446.00	PNC-S-197A	ASIS	Y	PO	SW	CL ./ DK GRY	0.00	0.02	0.27	0.29	<1.05	480	1.38	38884	1
9540.00-9540.00	PNC-S-205A	ASIS	Y	PO	SW	CL ./ M TO M DK GRY	0.00	0.05	0.18	0.23	<1.05	480	1.17	38885	1

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RICHNESS REPORT
SHELL WESTERN E&P INC.
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API # 92001000020000

REQUESTOR: K. CUNNGINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH	AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
9575.00-9575.00	PNC-S-208A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.02	0.22	0.24	<1.05	485	1.52	38886	1
9608.00-9608.00	PNC-S-212A	ASIS	Y		SW	M DK TO DK GRY	./	0.00	0.02	0.20	0.22	<1.05	480	1.52	38887	.
9645.00-9645.00	PNC-S-215A	ASIS	Y	PO	SW	CL DK GRY MUDDY	./	0.00	0.02	0.22	0.24	<1.05	480	1.40	38888	1
9675.00-9675.00	PNC-S-220A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.03	0.19	0.22	<1.05	480	1.19	38889	1
9722.00-9722.00	PNC-S-224A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.02	0.20	0.22	<1.05	480	1.34	38890	1
9754.00-9754.00	PNC-S-228A	ASIS	Y	PO	SW	CL DK GRY	./	0.00	0.02	0.19	0.21	<1.05	485	1.47	38891	1
9772.00-9772.00	PNC-S-233A	ASIS	Y	PO	SW	CL DK GRY MUDDY	./	0.00	0.02	0.14	0.16	<1.05	480	1.09	38892	1
9784.00-9784.00	PNC-S-236A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.02	0.18	0.20	<1.05	480	1.34	38893	1
9790.00-9790.00	PNC-S-238A	ASIS	Y	PO	SW	CL M DK TO DK GRY	./	0.00	0.02	0.20	0.22	<1.05	480	1.33	38894	1
9814.00-9814.00	PNC-S-244A	ASIS	Y	PO	SW	CL M TO DK GRY	./	0.00	0.03	0.19	0.22	<1.05	480	1.39	38895	1

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DATE: NOVEMBER 24, 1986

RICHNESS REPORT
SHELL WESTERN E&P INC.
CODED WELL,NONE
API # 92001000020000

REQUESTOR: K. CUNNGINGHAM

ANALYSIS OF THE REQUESTED SAMPLES HAS BEEN COMPLETED. THE RESULTS ARE LISTED BELOW:

DEPTH, FT	SAM	SAMP PREP	Q	FID PREP	ORIG	LITH	AGE/FM	PYROLYSIS FID ANAL. 50-195 HC WT%	200-395 HC WT%	400+ HC WT%	TOTAL HC YLD WT%	VRE	PEAK TEMP	NCC WT%	FID NUMBER	FID RUN
9856.00-9856.00	PNC-S-250A	ASIS	Y	PO	SW	CL M DK TO DK GRY	./	0.00	0.02	0.17	0.19	<1.05	480	1.29	38897	1
9870.00-9870.00	PNC-S-253A	ASIS	Y	PO	SW	CL M TO M DK GRY	./	0.00	0.02	0.18	0.20	<1.05	480	1.43	38898	1
9882.00-9882.00	PNC-S-257A	ASIS	Y	PO	SW	CL SILTY M TO M DK GRY W-PLANT FRAG	./	0.00	0.02	0.17	0.19	<1.05	480	1.41	38899	1
9922.00-9922.00	PNC-S-263A	ASIS	Y	PO	SW	CL DK GRY	./	0.00	0.03	0.21	0.24	<1.05	480	1.28	38900	1
9970.00-9970.00	PNC-S-270A	ASIS	Y	PO	SW	CL M DK TO DK GRY	./	0.00	0.04	0.22	0.26	<1.05	480	1.65	38902	1
9997.00-9997.00	PNC-S-274A	ASIS	Y	PO	SW	CL M DK TO DK GRY MUDDY	./	0.00	0.09	0.18	0.27	<1.05	475	1.18	38903	1
10000.00-10000.00	PNC-S-276A	ASIS	Y	PO	SW	CL M DK GRY MUDDY	./	0.00	0.04	0.17	0.21	<1.05	480	1.32	38904	1

STANDARD COMMENTS REGARDING P-FID

FID PEAK TEMPERATURE IS NOT OUR MOST RELIABLE INDICATOR OF MATURITY. OTHER METHODS (ESPECIALLY VR) SHOULD BE USED TO CONFIRM THE VRE IF AT ALL POSSIBLE. THE MOST RELIABLE RANGE FOR P-FID IS VRE OF 1-2%. BELOW A VRE OF 1% THE CALIBRATION IS NOT USEABLE AND ABOVE A VRE OF 2% THE YIELDS ARE OFTEN SO LOW THAT THE MATURITY INDICATED MAY BE IN CONSIDERABLE ERROR. SALTS AND MINERALS WHEN PRESENT INTERFERE WITH THE PYROLYSIS PEAK AND MAY PRODUCE AN UNRELIABLE VRE DETERMINATION BY P-FID.

ORIGIN

CO = Core
PD = Picked Ditch
UD = Unpicked Ditch
ARTI = Artificial
HEAD = Wellhead
SEPR = Separator
DST = Drill Stem Test
WELL = to be used only if spling location at well not known

JB = Junk Basket
MI = Mine
MS = Quarry
ADD = Additive
MPT = Mudpit
MFT = Mud Filtrate
SEEP = Seep Sample
FIT = Fluid Test

OT = Outcrop
SW = Sidewall
OB = Ocean Bottom
BLLN = Blooey Line
FLLN = Flowline
TANK = Tank Farm
RFT = Reservoir Fluid Test
MGAS = Mud gas

SAMPLE PREP

ASIS = As Received
CENT = Centrifuged
COMB = Combined/Composited
DIAL = Dialyzed
EXPT = Experimental(If prep is not defined for artificial samples)
EXTR = Extracted in analytical with chloroform-methanol
HLS = Heavy Liquid Separation
light fraction
Heavy fraction
ZON? = Ill defined depth
ODRY = Oven Dried

FDRY = Freeze Dried
FROZ = Frozen
PYRO = Pyrolyzed
HEAT = Heated
ADSB = Adsorted Organics
WASH = Washed with Solvent

EXTC = Extracted in GCS w/chlorothene
EXTH = Extracted in analytical w/cyclo-hexane
DISA = Disaggregation-heated at 345 deg C for 3 wks
LCHD = Leached
OGAS = Oil gas ratio (PFID)

FID PREP

ASIS = As Received
CG = Coarse Grained
CHIP = 1 Chip (not powdered)
DIAL = Dialyzed
OG = Oil gas ratio

EXTC= Extracted w-chlorothene
FROZ = Frozen
PO = Powdered
OS = Oil and sand mix

Q (QUALITY)

Y = Yes, sample is appropriate for well interpretation.
N = No, sample is not appropriate for well interpretation.

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
CATION EXCHANGE CAPACITY

SEPTEMBER 19, 1986
SHELL WESTERN E&P INC.
PROSPECT CORONA

SAMPLE NO.	DEPTH (FT)	IDENTIFIER	POROSITY %	GRAIN DENSITY	CEC MEQ/100g	Qv MEQ/ml
1	3014'	15	28.0	2.694	8.68	0.60
3	3215'	198	34.3	2.700	1.93	0.10
5	3236'	196	29.6	2.706	3.58	0.23
6	3489'	30	30.8	2.688	9.75	0.59
9	3506'	32	34.8	2.590	13.30	0.65
10	3642'	35	32.7	2.694	4.85	0.27
13	3760'	39	31.9	2.688	2.83	0.16
14	4315'	176	33.8	2.705	11.85	0.63

ALL SAMPLES HAD BEEN GROUND FOR X-RAY ANAYLSIS

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NOV 04 1986
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

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0871, #1

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
CATION EXCHANGE CAPACITY

SEPTEMBER 2, 1986
SHELL WESTERN E&P INC.
PROSPECT CORONA

SAMPLE NO.	DEPTH (FT)	IDENTIFIER	POROSITY %	GRAIN DENSITY	CEC MEQ/100g	Qv MEQ/ml
1	3014'	15	28.0	2.694	8.60	0.60
3	3215'	198	34.3	2.700	1.45	0.08
5	3236'	196	29.6	2.706	2.93	0.19
6	3489'	30	30.8	2.688	4.05	0.24
9	3506'	32	34.8	2.590	6.82	0.33
10	3642'	35	32.7	2.694	4.29	0.24
13	3760'	39	31.9	2.688	1.37	0.08
14	4315'	176	33.8	2.705	12.48	0.66

PRIVATE & CONFIDENTIAL
PROPRIETARY
DATE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
CATION EXCHANGE CAPACITY

OCTOBER 13, 1986
SHELL WESTERN E&P INC.
PROSPECT CORONA

SAMPLE NO	DEPTH (FEET)	IDENTIFIER	C.E.C. (meq/100g)
1	3,749	37	7.99
2	3,755	38	6.30
3	4,018	259	6.92
4	4,073	257	8.71
5	4,177	73	10.97
6	4,271	48	9.99
7	4,284	49	8.99
8	4,475	171	10.39
9	4,602	252	11.29
10	4,965	83	11.60
11	5,193	89	8.63
12	5,336	229	9.00
13	5,748	157	10.20
14	5,773	61	11.08
15	6,434	115	9.85
16	6,660	118	8.72
17	7,377	145	12.70
18	7,540	273	9.40
19	7,715	66	9.56

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PROPRIETARY

U.S. DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

FILE UNDER:

ROUTING of this TELEPHONE CONVERSATION RECORD:		Date:
1	4	Time in office originating call ____
2	5	receiving call ____
3	6	

NOTE: Last reader discards this copy unless it is needed other than as referenced above.

Call to:	Call from:
Title & Organization → area or FTS ( ) -	Title & Organization → area or FTS ( ) -

SUBJECT:

[illegible]

GMC Data Report 125 Page A-53/74

[illegible]

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FORM MMS 2002 (Apr 1983) FILING COPY

DATE: 22 OCTOBER 1986

FROM: GEOCHEMICAL SERVICES

REQUESTOR: R. BAUGHMAN

ROCK-EVAL PYROLYSIS ANALYSIS
SWEPI
92-001-00002-00
ID NO. 92-001-00002-00

WELL CODE NO. F010400

THE SOURCE ROCK STUDY OF THE REQUESTED SAMPLES HAS BEEN PARTIALLY COMPLETED. ROCK-EVAL PYROLYSIS WAS RUN ON UNPICKED BULK DITCH OVER THE DEPTH INTERVAL 9010-10000 FEET. (99 SAMPLES).

ROCK-EVAL MEASURES MATERIAL IN THE DISTILLABLE RANGE (S1), THE PYROLYZABLE RANGE (S2) AND CO2 GENERATION FROM ORGANIC MATTER (S3). ALL VALUES ARE REPORTED IN MG/G. ROCK-EVAL TMAX VALUES ARE NOT EQUAL TO PFID TMAX VALUES.

THE DOW GEOCHEMICAL SERVICES, INC. ANALYTICAL REPORT IS PRESENTED ON THE ATTACHMENT.

A CHARGE OF $2475.00 WAS MADE TO YOUR ACCOUNT NO. 210-83442.FE FOR THE ANALYSIS. PLEASE REFER TO PURCHASE ORDER NO. RE29231LD

YOUR BILLING NUMBER FOR THIS WORK IS 266121

A. N. FUEX

ANF/JAT/AKK

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DEC 15 1986

MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

SHELL DEVELOPMENT COMPANY
P. O. Box 481
Houston, TX 77001

ATTN: A. Killi
WELL CODE: F010400 DGSI PROJECT 86336

DGSI NO.	DEPTH 1	DEPTH 2	S 1	S 2	S 3	TMAX
1	9010	9020	0.09	0.37	0.55	419
2	9020	9030	0.09	0.72	1.03	423
3	9030	9040	0.08	0.53	0.97	425
4	9040	9050	0.06	0.38	0.88	422
5	9050	9060	0.08	0.55	1.04	421
6	9060	9070	0.09	0.49	1.07	422
7	9070	9080	0.10	0.56	1.13	424
8	9080	9090	0.09	0.39	1.22	421
9	9090	9100	0.08	0.79	1.33	426
10	9100	9110	0.08	0.43	0.97	418
11	9110	9120	0.08	0.57	1.08	423
12	9120	9130	0.06	0.37	0.75	423
13	9130	9140	0.09	0.47	0.97	421
14	9140	9150	0.09	0.53	1.31	423
15	9150	9160	0.10	0.47	1.40	423
16	9160	9170	0.16	0.72	1.41	423
17	9170	9180	0.17	0.97	1.49	424
18	9180	9190	0.13	0.55	0.96	421
19	9190	9200	0.17	0.59	1.10	422
20	9200	9210	0.13	0.29	1.04	418
21	9210	9220	0.12	0.41	1.11	415
22	9220	9230	0.12	0.56	1.18	420
23	9230	9240	0.18	0.44	0.91	417
24	9240	9250	0.16	0.56	1.14	417
25	9250	9260	0.12	0.54	1.04	419
26	9260	9270	0.13	0.61	1.16	420
27	9270	9280	0.42	0.75	1.04	418
28	9280	9290	0.10	0.52	1.00	420
29	9290	9300	0.14	0.55	1.12	419
30	9300	9310	0.14	0.90	1.28	420
31	9310	9320	0.14	0.92	1.09	423
32	9320	9330	0.14	0.72	0.82	422
33	9330	9340	0.13	0.84	1.04	424
34	9340	9350	0.11	0.54	0.88	421
35	9350	9360	0.16	0.87	1.06	423
36	9360	9370	0.09	0.46	0.84	422
37	9370	9380	0.08	0.38	0.79	422
38	9380	9390	0.12	0.86	1.18	424
39	9390	9400	0.12	0.63	0.98	421
40	9400	9410	0.15	0.86	1.27	422

SHELL DEVELOPMENT COMPANY
P. O. Box 481
Houston, TX 77001

ATTN: A. Killi
WELL CODE: F010400 DGSI PROJECT 86336

DGSI NO.	DEPTH 1	DEPTH 2	S 1	S 2	S 3	TMAX
41	9410	9420	0.13	0.71	1.07	421
42	9420	9430	0.11	0.71	1.10	426
43	9430	9440	0.12	0.45	0.86	425
44	9440	9450	0.10	0.50	1.06	422
45	9450	9460	0.11	0.48	0.77	424
46	9460	9470	0.10	0.50	0.89	425
47	9470	9480	0.09	0.44	1.02	424
48	9480	9490	0.10	0.58	1.12	426
49	9490	9500	0.12	0.66	1.15	425
50	9500	9510	0.15	0.63	0.86	424
51	9510	9520	0.08	0.35	0.77	422
52	9520	9530	0.09	0.48	1.04	425
53	9530	9540	0.11	0.59	1.09	426
54	9540	9550	0.14	0.90	1.15	423
55	9550	9560	0.12	0.71	1.00	422
56	9560	9570	0.08	0.35	0.69	422
57	9570	9580	0.13	0.64	1.19	425
58	9580	9590	0.12	0.71	1.06	421
59	9590	9600	0.14	0.76	1.08	423
60	9600	9610	0.11	0.53	0.87	422
61	9610	9620	0.13	0.71	1.10	424
62	9620	9630	0.13	0.70	1.02	422
63	9630	9640	0.17	1.07	1.29	419
64	9640	9650	0.17	1.21	1.24	422
65	9650	9660	0.16	0.99	1.13	423
66	9660	9670	0.13	0.62	0.98	424
67	9670	9680	0.15	0.63	1.02	423
68	9680	9690	0.23	1.06	1.28	426
69	9690	9700	0.21	0.93	0.97	424
70	9700	9710	0.59	0.95	0.98	418
71	9710	9720	0.27	0.75	1.06	426
72	9720	9730	0.53	1.72	1.49	422
73	9730	9740	0.40	0.98	1.20	423
74	9740	9750	0.39	1.19	1.35	421
75	9750	9760	0.32	1.37	1.43	422
76	9760	9770	0.38	1.21	1.25	424
77	9770	9780	0.42	1.52	1.20	420
78	9780	9790	0.39	1.02	1.23	421
79	9790	9800	0.35	1.04	1.12	422
80	9800	9810	0.29	0.94	1.09	421

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SHELL DEVELOPMENT COMPANY
P. O. Box 481
Houston, TX 77001

ATTN: A. Killi
WELL CODE: F010400 DGSI PROJECT 86336

DGSI NO.	DEPTH 1	DEPTH 2	S 1	S 2	S 3	TMAX
81	9810	9820	0.28	1.09	1.07	419
82	9820	9830	0.30	0.78	1.33	419
83	9830	9840	0.22	1.00	1.03	423
84	9840	9850	0.21	0.84	0.95	421
85	9850	9860	0.21	1.04	1.01	422
86	9860	9870	0.18	0.85	1.04	420
87	9870	9880	0.22	1.13	1.02	419
88	9880	9890	0.18	0.86	0.95	423
89	9890	9900	0.22	1.10	1.14	418
90	9900	9910	0.18	0.97	1.09	419
91	9910	9920	0.21	1.03	1.10	420
92	9920	9930	0.19	0.97	1.12	424
93	9930	9940	0.22	0.96	1.02	425
94	9940	9950	0.29	1.36	1.24	420
95	9950	9960	0.19	1.03	1.03	422
96	9960	9970	0.23	1.26	1.26	421
97	9970	9980	0.22	1.10	1.08	424
98	9980	9990	0.26	1.02	1.11	427
99	9990	10000	0.23	1.02	1.24	422

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PROPRIETARY

DATE: 20 OCTOBER 1986

FROM: GEOCHEMICAL SERVICES

REQUESTOR: R. BAUGHMAN

ROCK-EVAL PYROLYSIS ANALYSIS
SWEPI
92-001-00002-00
ID NO. 92-001-00002-00

WELL CODE NO. F010400

THE SOURCE ROCK STUDY OF THE REQUESTED SAMPLES HAS BEEN PARTIALLY COMPLETED. ROCK-EVAL PYROLYSIS WAS RUN ON SELECTED SIDEWALL CORES OVER THE DEPTH INTERVAL 8076-10000 FEET. (151 SAMPLES).

THE DOW GEOCHEMICAL SERVICES, INC. ANALYTICAL REPORT IS PRESENTED ON THE ATTACHMENT.

A CHARGE OF $3775.00 WAS MADE TO YOUR ACCOUNT NO. 210-83442.FE FOR THE ANALYSIS. PLEASE REFER TO PURCHASE ORDER NO. RE29211LD

YOUR BILLING NUMBER FOR THIS WORK IS 266121

A. N. FUEX

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DEPTH IN FEET	SAMPLE TYPE SWC	LITH. PF=PLANT FRAGMENTS
8076	X	CLAY MED GRY
8108	X	CLAY DK GRY TO BLK MUDDY
8164	X	CLAY LT M GRY MUDDY
8204	X	CLAY LT GRY W/PF
8211	X	CLAY LT M GRY MUDDY
8240	X	CLAY LT TO M GRY
8266	X	CLAY M GRY
8298	X	CLAY LT GRY TR PF
8330	X	CLAY LT GRY TR PF
8398	X	CLAY LT GRY
8423	X	CLAY LT TO M GRY TR MUD
8429	X	CLAY LT GRY
8449	X	CLAY DK GRY
8452	X	CLAY LT GRY
8526	X	CLAY SILTY LT TO DK GRY
8540	X	MUD TR CLAY LT GRY
8551	X	CLAY LT TO M GRY
8567	X	CLAY LT TO M GRY
8620	X	CLAY LT TO M GRY
8684	X	CLAY LT TO M GRY
8694	X	CLAY LT TO M GRY MUDDY
8711	X	CLAY LT TO M GRY MUDDY
8736	X	CLAY LT TO M GRY
8743	X	CLAY SILTY M GRY
8755	X	CLAY LT TO M GRY
8761	X	CLAY M GRY
8766	X	CLAY LT TO M GRY
8775	X	CLAY LT TO M GRY
8795	X	CLAY M GRY MUDDY
8811	X	CLAY LT TO M GRY
8830	X	CLAY M GRY
8847	X	CLAY M DK GRY
8870	X	CLAY LT TO M GRY
8877	X	CLAY LT TO M GRY
8910	X	CLAY M TO M DK GRY MUDDY
8931	X	CLAY M GRY MUDDY
8935	X	CLAY LT TO M GRY TR PF
8940	X	CLAY M GRY
8958	X	CLAY SILTY LT TO M GRY
8988	X	CLAY M GRY MUDDY
9009	X	CLAY LT GRY MUDDY
9020	X	CLAY LT M GRY MUDDY
9025	X	CLAY LT TO M GRY MUDDY
9056	X	CLAY M DK GRY
9077	X	CLAY M TO M DK GRY
9098	X	CLAY M TO M DK GRY MUDDY
9114	X	CLAY M TO M DK GRY MUDDY
9130	X	SLTST L TO M GRY
9161	X	CLAY DK GRY
9169	X	CLAY M TO M DK GRY MUDDY
9182	X	CLAY LT GRY MUDDY

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PROPRIETARY

DEPTH IN FEET	SAMPLE TYPE SWC	LITH. PF=PLANT FRAGMENTS
9214	X	CLAY DK GRY
9220	X	CLAY M TO M DK GRY
9230	X	CLAY DK GRY MUDDY
9243	X	CLAY M GRY
9247	X	MUD TR CLAY LT GRY
9256	X	CLAY M GRY
9272	X	CLAY M DK GRY MUDDY
9277	X	CLAY LT TO M GRY V MUDDY
9293	X	CLAY M DK GRY
9306	X	CLAY M TO M DK GRY
9312	X	CLAY M GRY MUDDY
9330	X	CLAY DK GRY
9355	X	CLAY LT GRY MUDDY
9360	X	MUD W CLAY LT GRY
9380	X	CLAY M TO M DK GRY
9392	X	CLAY LT AND DK GRY
9409	X	CLAY M TO M DK GRY MUDDY
9420	X	CLAY M TO M DK GRY
9422	X	CLAY DK GRY
9435	X	CLAY M TO M DK GRY MUDDY
9446	X	CLAY DK GRY
9455	X	CLAY M TO M DK GRY MUDDY
9482	X	CLAY M TO DK GRY
9486	X	CLAY M TO M DK GRY MUDDY
9494	X	CLAY LT TO M GRY
9504	X	CLAY DK GRY TR MUD
9520	X	CLAY M GRY
9534	X	CLAY M TO DK GRY MUDDY
9540	X	CLAY M TO M DK GRY
9545	X	CLAY M TO DK GRY MUDDY
9558	X	CLAY M TO M DK GRY MUDDY
9575	X	CLAY M DK TO DK GRY
9580	X	CLAY LT GRY MUDDY
9584	X	CLAY M DK TO DK GRY MUDDY
9598	X	CLAY LT TO M GRY MUDDY
9608	X	CLAY M DK TO DK GRY
9620	X	CLAY DK GRY
9641	X	MUD W/CLAY DK GRY
9645	X	CLAY DK GRY MUDDY
9653	X	CLAY DK GRY MUDDY
9655	X	CLAY M GRY MUDDY
9657	X	CLAY M DK TO DK GRY
9666	X	CLAY M GRY
9675	X	CLAY M TO M DK GRY
9693	X	CLAY M GRY
9708	X	CLAY M TO M DK GRY V MUDDY

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DEPTH IN FEET	SAMPLE TYPE SWC	LITH. PF=PLANT FRAGMENTS
9714	X	CLAY M TO DK GRY MUDDY
9722	X	CLAY M TO M DK GRY
9726	X	CLAY M TO DK GRY
9736	X	CLAY M TO M DK GRY
9752	X	CLAY DK GRY
9754	X	CLAY DK GRY
9758	X	CLAY DK GRY
9760	X	CLAY DK GRY
9766	X	MUD W/CLAY LT GRY
9766A	X	CLAY M GRY
9772A	X	CLAY DK GRY MUDDY
9772	X	CLAY M GRY
9778	X	CLAY M GRY MUDDY
9784	X	CLAY M TO M DK GRY
9784A	X	CLAY M DK GRY MUDDY
9790	X	CLAY M DK TO DK GRY
9790A	X	CLAY M TO M DK GRY MUDDY
9796	X	CLAY M DK TO DK GRY TR COAL
9802	X	CLAY SILTY LT TO M GRY MUDD
9802A	X	CLAY M TO DK GRY
9808	X	CLAY DK GRY
9814	X	CLAY M TO DK GRY
9820	X	CLAY M GRY MUDDY
9826	X	MUD TR CLAY LT GRY
9832	X	MUD TR CLAY LT TO M GRY
9844	X	MUD TR CLAY LT GRY
9846	X	CLAY DK GRY MUDDY
9856	X	CLAY M DK TO DK GRY
9862	X	CLAY DK GRY MUDDY
9864	X	CLAY M TO DK GRY
9870	X	CLAY M TO M DK GRY
9874	X	CLAY M TO DK GRY MUDDY
9876	X	CLAY M TO M DK GRY
9880	X	CLAY M GRY
9882	X	CLAY SILTY M TO M DK GRY W/
9888	X	CLAY M TO M DK GRY
9892	X	CLAY M DK TO DK GRY MUDDY
9898	X	CLAY DK GRY MUDDY
9904	X	CLAY M DK TO DK GRY
9914	X	CLAY M DK TO DK GRY MUDDY
9922	X	CLAY DK GRY
9928	X	CLAY M DK TO DK GRY
9934	X	CLAY DK GRY MUDDY
9938	X	CLAY M GRY MUDDY
9948	X	CLAY DK GRY V MUDDY
9960	X	CLAY M TO M DK GRY

PROPRIETARY

DEPTH IN FEET	SAMPLE TYPE SWC	LITH. PF=PLANT FRAGMENTS
9965	X	CLAY M DK GRY MUDDY
9970	X	CLAY M DK TO DK GRY
9980	X	CLAY DK GRY MUDDY
9985	X	CLAY M DK TO DK GRY
9988	X	CLAY DK GRY MUDDY
9997A	X	CLAY M DK TO DK GRY MUDDY
9997B	X	CLAY M TO M DK GRY MUDDY
10000	X	CLAY M DK GRY MUDDY

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PROPRIETARY

Samples run from Shell Standard

Standard	Weight	S 1	S 2	S 3	TMAX
610	101.00	0.13	9.21	2.25	447
610	101.90	0.12	9.02	2.21	448
610	101.00	0.14	8.50	2.43	448

PROPRIETARY

		TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
	01.0	448	0.14	8.50	2.43	0.02	3.49	0.72			

DATE: 10-16-86 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
610	101.0	447	0.13	9.21	2.25	0.01	4.09	0.77			

DATE: 10-16-86 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
610	101.9	448	0.12	9.02	2.21	0.01	4.08	0.76			

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DATE

SHELL DEVELOPMENT CO.
P. O. Box 481
Houston, TX 77001

PROPRIETARY

ATTN: A. Killi
WELL CODE: F010400, DGSI PROJECT NO. 86335

SAMPLE ID	S 1	S 2	S 3	TMAX
8076	0.08	1.32	3.65	428
8108	0.17	1.43	1.32	429
8164	0.19	0.88	2.93	425
8204	0.15	1.44	3.66	426
8211	0.15	0.81	2.66	424
8240	0.09	1.11	4.33	427
8266	0.15	1.11	1.85	428
8298	0.14	0.93	3.87	429
8330	0.17	0.85	3.10	426
8398	0.13	0.76	2.41	428
8423	0.16	1.31	6.05	427
8429	0.12	0.79	2.45	429
8449	0.06	1.25	4.24	427
8452	0.09	1.04	4.82	427
8526	0.10	1.18	4.22	428
8540	0.22	0.72	1.99	422
8551	0.16	1.49	3.73	428
8567	0.15	0.84	2.08	432
8620	0.10	1.34	2.66	428
8684	0.16	1.17	2.81	425
8694	0.15	1.19	0.78	428
8711	0.22	0.94	2.60	426
8736	0.13	1.63	3.92	429
8743	0.13	1.45	4.90	429
8755	0.11	1.22	3.57	428
8761	0.12	1.25	4.68	429
8766	0.16	1.20	2.32	428
8775	0.17	1.23	3.04	427
8795	0.18	0.86	3.51	426
8811	0.17	1.64	4.31	429
8830	0.15	1.39	3.86	427
8847	0.14	1.32	4.33	431
8870	0.08	1.46	3.37	430
8877	0.12	1.34	4.60	428
8910	0.09	1.62	1.34	433
8931	0.12	0.75	2.51	428
8935	0.14	1.75	4.30	429
8940	0.15	0.87	3.84	427
8958	0.26	1.30	3.91	424
8988	0.17	0.86	3.95	424

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Houston, TX 77001

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ATTN: A. Killi
WELL CODE: F010400, DGSI PROJECT NO. 86335

SAMPLE ID	S 1	S 2	S 3	TMAX
9009	0.13	1.05	2.67	427
9020	0.15	2.06	1.93	430
9025	0.09	0.93	2.69	428
9056	0.09	1.31	4.05	426
9077	0.07	0.81	1.81	427
9098	0.11	0.47	0.83	422
9114	0.13	1.42	3.25	431
9130	0.17	1.65	3.62	429
9161	0.15	1.27	4.77	426
9169	0.10	1.44	3.50	430
9182	0.13	1.04	3.59	426
9214	0.20	1.54	3.58	428
9220	0.13	0.47	0.92	427
9230	0.20	1.50	1.26	430
9243	0.18	1.66	4.64	430
9247	0.19	1.02	2.84	426
9256	0.12	1.54	4.70	428
9272	0.15	0.82	3.20	426
9277	0.21	1.13	2.12	428
9293	0.22	1.41	2.53	430
9306	0.16	1.58	4.08	429
9312	0.18	0.65	1.50	429
9330	0.15	1.60	4.36	429
9355	0.23	1.49	3.02	428
9360	0.19	0.31	1.09	418
9380	0.20	1.64	3.81	428
9392	0.17	1.68	5.90	429
9409	0.19	1.45	2.93	428
9420	0.19	1.08	4.09	427
9422	0.20	1.55	4.02	430
9435	0.11	1.48	1.76	430
9446	0.07	2.11	3.52	432
9455	0.07	1.17	2.95	428
9482	0.10	0.87	0.76	428
9486	0.17	0.65	1.27	425
9494	0.07	1.06	1.84	429
9504	0.10	1.58	2.72	430
9520	0.16	1.57	2.21	429
9534	0.27	1.46	2.15	427
9540	0.31	1.82	1.50	431

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SAMPLE ID	S 1	S 2	S 3	TMAX
9545	0.20	1.50	1.73	430
9558	0.19	1.51	1.75	430
9575	0.12	1.80	4.18	430
9580	0.14	1.03	0.96	430
9584	0.08	1.04	2.78	430
9598	0.15	1.13	2.78	429
9608	0.16	1.84	4.55	429
9620	0.10	1.37	2.51	430
9641	0.14	0.80	1.54	430
9645	0.17	2.10	1.83	430
9653	0.14	1.57	3.96	431
9655	0.15	1.39	2.37	430
9657	0.14	1.31	2.63	430
9666	0.12	0.77	0.85	430
9675	0.18	1.38	2.54	432
9693	0.20	1.32	3.34	429
9708	0.22	1.10	3.04	427
9714	0.22	1.11	1.69	432
9722	0.14	1.51	2.22	433
9726	0.16	1.25	3.42	430
9736	0.18	1.35	4.15	431
9752	0.21	1.35	4.09	428
9754	0.13	1.54	2.75	433
9758	0.13	1.38	2.38	430
9760	0.13	1.47	5.34	432
9766	0.15	0.82	1.94	427
9766A	0.14	1.01	2.46	428
9772A	0.14	1.31	3.03	429
9772	0.12	1.16	2.06	430
9778	0.13	0.57	1.83	430
9784	0.08	1.46	2.49	434
9784A	0.12	1.01	1.42	431
9790	0.13	1.89	1.89	433
9790A	0.13	1.20	1.46	431
9796	0.13	1.35	1.83	433
9802	0.19	0.82	1.78	430
9802A	0.21	1.33	2.76	430
9808	0.17	0.96	2.81	430
9814	0.19	1.60	4.87	432
9820	0.15	0.94	1.96	429

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Houston, TX 77001

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ATTN: A. Kilii
WELL CODE: F010400, DGSI PROJECT NO. 86335

SAMPLE ID	S 1	S 2	S 3	TMAX
9826	0.44	1.19	1.64	428
9832	0.19	0.96	1.93	427
9844	0.27	0.65	2.42	422
9846	0.23	1.43	2.20	430
9856	0.20	1.56	2.24	431
9862	0.26	1.23	1.63	428
9864	0.23	1.38	2.25	431
9870	0.21	1.51	4.05	431
9874	0.16	0.96	3.44	428
9876	0.18	0.95	1.44	431
9880	0.13	1.22	2.56	431
9882	0.22	1.50	3.17	429
9888	0.18	0.70	1.46	428
9892	0.18	0.97	2.73	429
9898	0.25	1.38	3.64	429
9904	0.14	1.16	3.15	430
9914	0.17	1.60	3.82	430
9922	0.19	1.63	2.05	431
9928	0.19	1.43	2.78	431
9934	0.21	0.86	1.59	430
9938	0.18	0.99	1.85	429
9948	0.60	1.63	2.77	427
9960	0.21	1.45	2.62	432
9965	0.28	1.40	2.79	429
9970	0.26	1.82	3.47	432
9980	0.29	1.55	2.36	431
9985	0.24	1.47	3.50	431
9988	0.25	1.24	2.87	430
9997A	0.71	1.35	1.86	424
9997B	0.13	0.80	1.91	431
10000	0.25	1.38	2.39	429

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SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
CATION EXCHANGE CAPACITY

PROPRIETARY

OCTOBER 13, 1986
SHELL WESTERN E&P INC., OCS-Y-0871 #1
PROSPECT CORONA

SAMPLE NO	DEPTH (FEET)	IDENTIFIER	C.E.C. (meq/100g)
1	3,749	37	7.99
2	3,755	38	6.30
3	4,018	259	6.92
4	4,073	257	8.71
5	4,177	73	10.97
6	4,271	48	9.99
7	4,284	49	8.99
8	4,475	171	10.39
9	4,602	252	11.29
10	4,965	83	11.60
11	5,193	89	8.63
12	5,336	229	9.00
13	5,748	157	10.20
14	5,773	61	11.08
15	6,434	115	9.85
16	6,660	118	8.72
17	7,377	145	12.70
18	7,540	273	9.40
19	7,715	66	9.56

RECEIVED
COS DISTRICT OFFICE

0871 #1

Replacement for Data issued 9/2/86

SHELL DEVELOPMENT
PETROPHYSICAL SERVICES I
CATION EXCHANGE CA

SEPTEMBER 19, 1986
SHELL WESTERN E&P INC.
PROSPECT CORONA

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LOS DISTRICT OFFICE
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

SAMPLE NO.	DEPTH (FT)	IDENTIFIER	POROSITY %	GRAIN DENSITY	CEC MEQ/100g	Qv MEQ/ml
1	3014'	15	28.0	2.694	8.68	0.60
3	3215'	198	34.3	2.700	1.93	0.10
5	3236'	196	29.6	2.706	3.58	0.23
6	3489'	30	30.8	2.688	9.75	0.59
9	3506'	32	34.8	2.590	13.30	0.65
10	3642'	35	32.7	2.694	4.85	0.27
13	3760'	39	31.9	2.688	2.83	0.16
14	4315'	176	33.8	2.705	11.85	0.63

ALL SAMPLES HAD BEEN GROUND FOR X-RAY ANAYLSIS

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0871 #1
M T

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
CATION EXCHANGE CAPACITY

PRIVATE & CONFIDENTIAL
PROPRIETARY

SEPTEMBER 2, 1986
SHELL WESTERN E&P INC.
PROSPECT CORONA

SAMPLE NO.	DEPTH (FT)	IDENTIFIER	POROSITY %	GRAIN DENSITY	CEC MEQ/100g	Qv MEQ/ml
1	3014'	15	28.0	2.694	8.60	0.60
3	3215'	198	34.3	2.700	1.45	0.08
5	3236'	196	29.6	2.706	2.93	0.19
6	3489'	30	30.8	2.688	4.05	0.24
9	3506'	32	34.8	2.590	6.82	0.33
10	3642'	35	32.7	2.694	4.29	0.24
13	3760'	39	31.9	2.688	1.37	0.08
14	4315'	176	33.8	2.705	12.48	0.66

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SEP 8 1986
9-8-86
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

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M-T

DATE: AUGUST 22, 1986

SUBJECT: INTERIM REPORT-SOURCE ROCK STUDY
SWEPI
CODED WELL
ID #92-001-00002-00-00

FROM: GEOCHEMICAL SERVICES

PROPRIETARY

REQUESTOR: K. CUNNINGHAM

PRIVATE & CONFIDENTIAL

The source rock study of the requested samples has been partially completed. Hydrocarbon analysis by rapid pyrolysis (HARP) was run on unpicked bulk ditch samples over the depth interval 420-3870 feet (115 samples).

HARP is a technique used to screen samples for source rock quality. The HC% yield from HARP is roughly equivalent to the %HC yield by pyrolysis FID, and is a direct measure of the sample richness. The HARP report and source rock log are attached.

A. N. FUEX

ANF/MLW:inw

Attachments

cc: A. N. Fuex (no attachments)
M. L. Weiss (w/attachments)

SAMPLE TYPE
UD=UNPICKED BULK DITCH

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SEP 3 1986
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

HARP SHORT CYCLE FINAL REPORT

ELL = 92001000020000 SWEPI CODED WELL UNITS = F
REA = LOCATION = ???

SEQ #	DEPTHS	TYPE	HC%	LITHOLOGY	REMARKS
1	420.00 - 450.00	UD	0.06	SS LT GRY W/PLANT FRAG	PAINT CHIPS
2	450.00 - 480.00	UD	2.78	SS LT GRY W/PLANT FRAG/PEAT/LIGNITE/REWORK COAL	
3	480.00 - 510.00	UD	1.44	"	
4	510.00 - 540.00	UD	1.43	"	
5	540.00 - 570.00	UD	1.38	"	
6	570.00 - 600.00	UD	0.66	"	
7	600.00 - 630.00	UD	0.66	"	
8	630.00 - 660.00	UD	0.34	"	
9	660.00 - 690.00	UD	0.69	"	
10	690.00 - 720.00	UD	1.16	"	
11	720.00 - 750.00	UD	0.68	"	
12	750.00 - 780.00	UD	1.13	"	
13	780.00 - 810.00	UD	0.71	"	
14	810.00 - 840.00	UD	0.77	"	
15	840.00 - 870.00	UD	1.88	"	
16	870.00 - 900.00	UD	2.75	"	
17	900.00 - 930.00	UD	2.44	"	
18	930.00 - 960.00	UD	2.51	"	
19	960.00 - 990.00	UD	2.22	"	
20	990.00 - 1020.00	UD	0.35	"	
21	1020.00 - 1050.00	UD	0.52	"	
22	1050.00 - 1080.00	UD	0.58	"	
23	1080.00 - 1110.00	UD	1.16	"	
24	1110.00 - 1140.00	UD	1.08	"	
25	1140.00 - 1170.00	UD	0.35	"	
26	1170.00 - 1200.00	UD	0.34	CLAY & SS LT GRY W/PEAT/LIGNITE	
27	1200.00 - 1230.00	UD	1.02	"	
28	1230.00 - 1260.00	UD	0.14	"	
29	1260.00 - 1290.00	UD	0.04	"	
30	1290.00 - 1320.00	UD	0.27	"	
31	1320.00 - 1350.00	UD	0.07	"	
32	1350.00 - 1380.00	UD	0.27	"	
33	1380.00 - 1410.00	UD	0.09	"	
34	1410.00 - 1440.00	UD	0.80	"	
35	1440.00 - 1470.00	UD	0.86	"	
36	1470.00 - 1500.00	UD	0.00	"	
37	1500.00 - 1530.00	UD	0.01	"	
38	1530.00 - 1560.00	UD	0.08	"	
39	1560.00 - 1590.00	UD	0.16	"	
40	1590.00 - 1620.00	UD	0.19	"	
41	1620.00 - 1650.00	UD	0.07	SS LT GRY W/PEAT/LIGNITE	
42	1650.00 - 1680.00	UD	0.39	"	
43	1680.00 - 1710.00	UD	1.22	"	
44	1710.00 - 1740.00	UD	0.53	CLAY & SS LT TO M GRY W/PEAT/LIGNITE	
45	1740.00 - 1770.00	UD	0.61	"	
46	1770.00 - 1800.00	UD	0.03	"	
47	1800.00 - 1830.00	UD	0.07	"	
48	1830.00 - 1860.00	UD	0.02	"	
49	1860.00 - 1890.00	UD	0.04	"	
50	1890.00 - 1920.00	UD	0.15	"	
51	1920.00 - 1950.00	UD	0.35	"	

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52	1950.00	-	1980.00	UD	0.41	"
53	1980.00	-	2010.00	UD	0.23	"
54	2010.00	-	2040.00	UD	0.24	"
55	2040.00	-	2070.00	UD	0.16	"
56	2070.00	-	2100.00	UD	0.40	"
57	2100.00	-	2130.00	UD	0.44	SS LT GRY W/PEAT/LIGNITE
58	2130.00	-	2160.00	UD	0.58	"
59	2160.00	-	2190.00	UD	0.87	"
60	2190.00	-	2220.00	UD	0.73	"
61	2220.00	-	2250.00	UD	0.94	CLAY & SS LT TO M GRY W/VAR.AMOUNT LIGNITE
62	2250.00	-	2280.00	UD	0.68	"
63	2280.00	-	2310.00	UD	0.37	"
64	2310.00	-	2340.00	UD	0.35	"
65	2340.00	-	2370.00	UD	0.22	"
66	2370.00	-	2400.00	UD	0.20	"
67	2400.00	-	2430.00	UD	0.36	"
68	2430.00	-	2460.00	UD	0.47	"
69	2460.00	-	2490.00	UD	0.34	"
70	2490.00	-	2520.00	UD	0.32	"
71	2520.00	-	2550.00	UD	0.24	"
72	2550.00	-	2580.00	UD	0.23	"
73	2580.00	-	2610.00	UD	0.21	"
74	2610.00	-	2640.00	UD	0.29	"
75	2640.00	-	2670.00	UD	0.30	"
76	2670.00	-	2700.00	UD	0.52	"
77	2700.00	-	2730.00	UD	0.30	" CASING CMT
78	2730.00	-	2760.00	UD	0.15	"
79	2760.00	-	2790.00	UD	0.17	"
80	2790.00	-	2820.00	UD	0.28	"
81	2820.00	-	2850.00	UD	0.37	"
82	2850.00	-	2880.00	UD	0.16	"
83	2880.00	-	2910.00	UD	1.22	"
84	2910.00	-	2940.00	UD	0.59	"
85	2940.00	-	2970.00	UD	0.86	"
86	2970.00	-	3000.00	UD	0.57	"
87	3000.00	-	3030.00	UD	0.60	"
88	3030.00	-	3060.00	UD	0.36	"
89	3060.00	-	3090.00	UD	0.47	"
90	3090.00	-	3120.00	UD	0.51	"
91	3120.00	-	3150.00	UD	0.28	"
92	3150.00	-	3180.00	UD	0.19	"
93	3180.00	-	3210.00	UD	0.24	"
94	3210.00	-	3240.00	UD	0.38	"
95	3240.00	-	3270.00	UD	0.31	"
96	3270.00	-	3300.00	UD	0.26	"
97	3300.00	-	3330.00	UD	0.35	"
98	3330.00	-	3360.00	UD	0.33	"
99	3360.00	-	3390.00	UD	0.23	"
100	3390.00	-	3420.00	UD	0.20	"
101	3420.00	-	3450.00	UD	0.15	"
102	3450.00	-	3480.00	UD	0.17	"
103	3480.00	-	3510.00	UD	0.43	"
104	3510.00	-	3540.00	UD	0.44	"
105	3540.00	-	3570.00	UD	0.42	"
106	3570.00	-	3600.00	UD	0.29	"
107	3600.00	-	3630.00	UD	0.35	"
108	3630.00	-	3660.00	UD	0.25	"
109	3660.00	-	3690.00	UD	0.22	"
110	3690.00	-	3720.00	UD	0.27	"
111	3720.00	-	3750.00	UD	0.18	"
112	3750.00	-	3780.00	UD	0.29	"
113	3780.00	-	3810.00	UD	0.14	"
114	3810.00	-	3840.00	UD	0.25	"
115	3840.00	-	3870.00	UD	0.24	"

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