

~~31-27-38W~~

31-27-39W

ARCO OIL & GAS COMPANY
JUNGFERMAN # 2
GRANT COUNTY, KANSAS

CORE ANALYSIS

ARCO OIL & GAS

Well: JUNGFERMAN # 2
 County: GRANT COUNTY, KANSAS
 Field: PANOWA
 PLUG ANALYSIS WITH METHANOL LEACH

Location: 1250 FNL & FEL SEC 31 T27S R38W
 Elevations: GL 3131 KB 3142
 API No.: 15-067-21250
 Analyst: DAVID FLOYD
 Date: 01-03-94

SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS H2O	OIL	ROP	LITHOLOGY
1	2300 - 2301	TBFA	9.9	2.76	47.2	0.0	5	SH TAN - RD SLTY SL SDY
2	2301 - 2302	<.01	0.4	2.95	25.8	0.0	7	ANHY SL SHLY STYL DNS
	2302 - 2303		NO ANALYSIS				5	SH GYGN - RDBRN SLTY TR SDY
	2303 - 2304		NO ANALYSIS				5	SH RDBRN - GYGN SLTY TR SDY
3	2304 - 2305	0.01	0.4	2.95	50.3	0.0	5	ANHY SL SHLY STYL DNS
4	2305 - 2306	<.01	0.7	2.95	48.1	0.0	5	ANHY SL SHLY STYL DNS
	2306 - 2307		NO ANALYSIS				8	SH RDBRN SLTY TR SDY
5	2307 - 2308	0.03	1.2	2.93	58.0	0.0	4	ANHY SL SHLY STYL DNS
	2308 - 2309		NO ANALYSIS				7	SH RDBRN SLTY TR SDY
	2309 - 2310		NO ANALYSIS				6	SH RDBRN SLTY TR SDY
6	2310 - 2311	0.07	2.4	2.93	21.1	0.0	6	ANHY SL SHLY STYL DNS
7	2311 - 2312	0.12	0.2	2.94	39.4	0.0	9	ANHY SL SHLY STYL DNS
	2312 - 2313		NO ANALYSIS				10	SH RDBRN SLTY SL SDY
8	2313 - 2314	59.85	17.9	2.76	36.2	0.0	7	SH RDBRN SLTY SL SDY
9	2314 - 2315	0.03	7.9	2.80	12.1	0.0	7	DOL SLTY LAM STYL TR PPP
10	2315 - 2316	24.61	1.9	2.94	45.1	0.0	9	ANHY SL SHLY STYL DNS
11	2316 - 2317	<.01	0.8	2.94	52.5	0.0	6	ANHY SL SHLY STYL DNS
12	2317 - 2318	<.01	1.3	2.90	38.2	0.0	7	ANHY SL DOL SL SHLY STYL DNS
13	2318 - 2319	<.01	1.3	2.92	54.2	0.0	6	ANHY SL DOL SL SHLY STYL DNS
14	2319 - 2320	TBFA	6.2	2.76	35.4	0.0	7	SH GY - GYGN SLTY SL SDY
15	2320 - 2321	0.03	7.3	2.77	32.9	0.0	7	SH RDGY - GY SLTY SL SDY
16	2321 - 2322	TBFA	11.3	2.78	19.8	0.0	9	SH GY - GYGN SLTY SL SDY
17	2322 - 2323	<.01	0.6	2.92	85.0	0.0	10	ANHY SL DOL SL SHLY STYL DNS
18	2323 - 2324	TBFA	7.2	2.89	56.1	0.0	8	DOL ABNT ANHY TR SH TR POR
19	2324 - 2325	<.01	0.3	2.92	87.5	0.0	9	ANHY SL DOL SL SHLY STYL DNS
	2325 - 2326		NO ANALYSIS				9	SH RDBRN SLTY SL SDY
	2326 - 2327		NO ANALYSIS				7	SH RDBRN - GYGN SLTY SL SDY
20	2327 - 2328	TBFA	6.8	2.71	7.9	0.0	6	SH GYGN - GY SLTY SL SDY
21	2328 - 2329	0.04	10.8	2.76	22.3	0.0	6	SH SL DOL SLTY ANHY INCL
22	2329 - 2330	0.13	7.6	2.80	27.1	0.0	6	DOL SHLY TR - SL ANHY TR POR
23	2330 - 2331	33.52	10.4	2.75	16.3	0.0	6	SH SL DOL SLTY ANHY INCL

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 Elevations: GL 3131 KB 3142
 API No.: 15-067-21250
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SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS H2O	OIL	ROP	LITHOLOGY
24	2331 - 2332	0.11	9.6	2.76	35.1	0.0	6	SH SL DOL SLTY ANHY INCL
25	2332 - 2333	0.01	3.4	2.83	45.7	0.0	5	DOL ANHY INCL MOD SHLY TR POR
26	2333 - 2334	<.01	6.6	2.79	31.6	0.0	6	DOL SLTY SL ANHY TR POR
27	2334 - 2335	0.54	8.5	2.75	40.6	0.0	5	DOL SLTY SL ANHY TR POR
28	2335 - 2336	0.61	11.3	2.82	5.7	0.0	6	DOL MOD SLTY SME ANHY SCT POR
29	2336 - 2337	0.43	10.7	2.77	45.5	0.0	4	DOL SLTY SME ANHY SCT POR
30	2337 - 2338	0.09	9.6	2.77	14.9	0.0	5	DOL SLTY SME ANHY SCT POR
31	2338 - 2339	7.01	13.7	2.70	46.2	0.0	3	SH GY - GYGN SLTY SL DOL SL SDY
32	2339 - 2340	0.02	12.0	2.71	62.4	0.0	3	SH GY - GYGN SLTY SL DOL SL SDY
33	2340 - 2341	0.05	12.3	2.70	29.9	0.0	3	SH GY - GYGN SLTY SL DOL SL SDY
34	2341 - 2342		NO ANALYSIS				6	SH GY - GYGN SLTY SL DOL SL SDY
35	2342 - 2343	2.75	11.3	2.73	38.7	0.0	6	SH GY - GYGN SLTY SL DOL SL SDY
36	2343 - 2344	0.01	13.5	2.71	33.3	0.0	5	SH RDBRN SLTY SL SDY
37	2344 - 2345	<.01	6.4	2.69	58.4	0.0	6	SH RDBRN SLTY SL SDY
38	2345 - 2346	0.87	12.6	2.70	45.0	0.0	7	SH RDBRN SLTY SL SDY
39	2346 - 2347	0.36	11.7	2.70	38.1	0.0	7	SH RDBRN SLTY SL SDY
	2347 - 2348	TBFA	5.3	2.66	92.6	0.0	8	SH GNGY SL SLTY
	2348 - 2349		NO ANALYSIS				11	SH GNGY SL SLTY
	2349 - 2350		NO ANALYSIS				9	SH GNGY SL SLTY
	2350 - 2351		NO ANALYSIS				8	SH GNGY SL SLTY
40	2351 - 2352	0.01	11.2	2.69	38.6	0.0	5	SH RDBRN SLTY SL SDY
41	2352 - 2353	<.01	7.0	2.70	76.2	0.0	7	SH RDBRN SLTY SL SDY
42	2353 - 2354	<.01	7.3	2.68	44.2	0.0	8	SH RDBRN SLTY SL SDY
43	2354 - 2355	0.02	2.9	2.88	14.2	0.0	5	ANHY SL DOL SL SLTY
44	2355 - 2356	<.01	5.6	2.82	26.3	0.0	4	DOL TR ANHY SL SLTY TR POR
45	2356 - 2357	<.01	3.8	2.81	26.0	0.0	5	DOL TR ANHY SL SLTY TR POR
46	2357 - 2358	0.30	11.5	2.75	8.7	0.0	5	DOL V SLTY SL SHLY SLTY LAM SCT POR
47	2358 - 2359	0.10	9.3	2.72	37.4	0.0	5	DOL V SLTY SL SHLY SLTY LAM SCT POR
48	2359 - 2360	0.16	11.1	2.74	10.8	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
49	2360 - 2361	0.03	8.7	2.75	22.6	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
50	2361 - 2362	0.05	10.0	2.76	19.0	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR

Reservoirs

Date.

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51	2362 - 2363	0.22	8.6	2.74	22.7	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
52	2363 - 2364	0.27	10.5	2.73	20.6	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
53	2364 - 2365	0.24	10.0	2.76	16.9	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
54	2365 - 2366	0.12	9.5	2.77	16.7	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
55	2366 - 2367	0.30	12.5	2.78	5.9	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
56	2367 - 2368	0.20	10.6	2.77	10.7	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
57	2368 - 2369	0.28	9.4	2.76	16.4	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
58	2369 - 2370	0.06	9.2	2.75	18.1	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
59	2370 - 2371	0.10	8.3	2.83	8.3	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
60	2371 - 2372	0.11	9.5	2.82	9.3	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
61	2372 - 2373	<.01	6.8	2.79	18.6	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
62	2373 - 2374	0.45	11.0	2.83	7.9	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
63	2374 - 2375	0.16	10.8	2.83	10.0	0.0	5	DOL V SLTY SL SHLY SLTY LAM SCT POR
64	2375 - 2376	0.06	9.1	2.85	12.1	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
65	2376 - 2377	0.14	8.5	2.85	12.9	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
66	2377 - 2378	0.02	6.4	2.85	18.4	0.0	5	DOL V SLTY SL SHLY SLTY LAM SCT POR
67	2378 - 2379	0.01	4.3	2.82	51.6	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
68	2379 - 2380	0.04	10.2	2.73	38.2	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
69	2380 - 2381	0.04	8.7	2.79	21.5	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
70	2381 - 2382	0.06	9.2	2.83	17.1	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
71	2382 - 2383	0.08	5.1	2.84	25.1	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
72	2383 - 2384	0.42	10.6	2.84	10.5	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
73	2384 - 2385	0.17	9.7	2.83	11.5	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
74	2385 - 2386	0.42	10.2	2.84	13.6	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
75	2386 - 2387	1.20	9.0	2.83	10.7	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
76	2387 - 2388	0.28	8.9	2.84	10.2	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
77	2388 - 2389	0.74	9.2	2.84	10.0	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
78	2389 - 2390	0.01	8.2	2.82	21.2	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
79	2390 - 2391	6.81	11.7	2.84	6.3	0.0	4	DOL V SLTY SL SHLY SLTY LAM SCT POR
80	2391 - 2392	1.39	10.4	2.88	7.4	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR
81	2392 - 2393	4.02	14.3	2.84	4.9	0.0	3	DOL V SLTY SL SHLY SLTY LAM SCT POR

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					H2O	OIL		
82	2393 - 2394	0.01	10.7	2.77	28.9	0.0	3	DOL SLTY SHLY SCT POR
83	2394 - 2395	TBFA	13.8	2.70	17.5	0.0	3	SH GYGN - GY SL SLTY SL DOL
84	2395 - 2396	<.01	12.1	2.80	22.7	0.0	4	DOL SLTY SL SHLY SCT POR
85	2396 - 2397	<.01	11.2	2.78	38.4	0.0	5	DOL SLTY SL SHLY SCT POR
86	2397 - 2398	<.01	7.1	2.66	79.1	0.0	4	SH RDBRN SLTY MOD SDY
87	2398 - 2399	<.01	13.0	2.75	44.3	0.0	4	SH RDBRN SLTY SL SDY
88	2399 - 2400	<.01	13.5	2.73	46.0	0.0	5	SH RDBRN SLTY SL SDY
89	2400 - 2401	<.01	13.6	2.73	36.8	0.0	3	SH RDBRN SLTY SL SDY
90	2401 - 2402	<.01	13.9	2.73	26.0	0.0	4	SH RDBRN SLTY SL SDY
91	2402 - 2403	<.01	10.0	2.69	52.7	0.0	4	SH BRN - TANRD SLTY SL - MOD SDY
92	2403 - 2404	<.01	11.3	2.74	51.0	0.0	4	SH RDBRN SLTY SL SDY
93	2404 - 2405	<.01	10.4	2.73	50.1	0.0	3	SH RDBRN SLTY SL SDY
94	2405 - 2406	<.01	10.7	2.72	45.2	0.0	3	SH RDBRN SLTY SL SDY
95	2406 - 2407	<.01	12.1	2.67	50.1	0.0	3	SH RDBRN SLTY MOD - SL SDY
96	2407 - 2408	<.01	10.6	2.72	60.9	0.0	5	SH RDBRN SLTY SL SDY
97	2408 - 2409	<.01	10.9	2.73	41.2	0.0	3	SH RDBRN SLTY SL SDY
98	2409 - 2410	<.01	11.6	2.72	48.8	0.0	12	SH RDBRN SLTY SL SDY
99	2410 - 2411	<.01	12.5	2.69	60.9	0.0	5	SH GY - GYGN SL SLTY TR SDY
100	2411 - 2412	<.01	12.0	2.73	47.6	0.0	8	SH RDBRN SLTY SL SDY
101	2412 - 2413	TBFA	10.3	2.76	78.0	0.0	9	SH GY - GYGN SL SLTY TR SDY
102	2413 - 2414	<.01	8.2	2.68	75.8	0.0	10	SH GY - GYGN SL SLTY TR SDY
103	2414 - 2415	TBFA	6.4	2.65	68.0	0.0	3	SH GY - GYGN SL SLTY TR SDY
104	2415 - 2416	0.32	10.0	2.70	12.5	0.0	2	DOL SLTY SHLY SH LAM SCT POR
105	2416 - 2417	<.01	12.2	2.70	53.3	0.0	3	DOL SLTY SHLY SH LAM SCT POR
106	2417 - 2418	<.01	12.3	2.70	66.6	0.0	2	DOL SLTY SHLY SH LAM SCT POR
	2418 - 2419		NO ANALYSIS				2	SH RDBRN - GYGN SL SLTY TR SDY
	2419 - 2420		NO ANALYSIS				2	SH RDBRN - GYGN SL SLTY TR SDY
107	2420 - 2421	0.19	13.4	2.69	27.5	0.0	2	DOL SLTY SHLY SH LAM SCT POR
108	2421 - 2422	0.02	11.4	2.72	45.9	0.0	1	DOL SLTY SHLY SH LAM SCT POR
109	2422 - 2423	0.79	16.2	2.70	24.0	0.0	1	DOL SLTY SHLY SH LAM SCT POR
110	2423 - 2424	<.01	12.3	2.72	66.4	0.0	1	DOL SLTY SHLY SH LAM SCT POR

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					H2O	OIL		
111	2424 - 2425	0.49	15.1	2.70	28.6	0.0	1	DOL SLTY SHLY SH LAM SCT POR
112	2425 - 2426	<.01	9.1	2.66	51.2	0.0	1	SH GY - GYGN SL SLTY TR SDY
113	2426 - 2427	<.01	9.2	2.71	57.7	0.0	4	DOL SLTY SHLY TR ANHY SCT POR
114	2427 - 2428	<.01	7.1	2.70	84.4	0.0	4	DOL SLTY SHLY TR ANHY SCT POR
115	2428 - 2429	<.01	3.8	2.66	98.2	0.0	5	SH SL DOL SL SDY SLTY
116	2429 - 2430	<.01	4.0	2.68	74.6	0.0	5	SH SL DOL SL SDY SLTY
117	2430 - 2431	<.01	3.2	2.67	90.4	0.0	4	SH SL DOL SL SDY SLTY
118	2431 - 2432	<.01	4.3	2.67	42.3	0.0	4	SH SL DOL SL SDY SLTY
119	2432 - 2433	<.01	6.0	2.69	31.0	0.0	4	SH SL DOL SL SDY SLTY
120	2433 - 2434	0.06	5.4	2.69	46.8	0.0	4	SH SL DOL SL SDY SLTY
121	2434 - 2435	0.10	7.8	2.70	27.8	0.0	4	SH SL DOL SL SDY SLTY
122	2435 - 2436	<.01	4.3	2.75	30.2	0.0	4	SH SL - MOD DOL SL ANHY SLTY
123	2436 - 2437	<.01	3.0	2.66	68.2	0.0	3	SH GY - GYGN SL SLTY TR SDY
124	2437 - 2438	0.70	16.4	2.79	12.2	0.0	2	DOL SLTY SHLY SCT POR
125	2438 - 2439	17.25	14.4	2.76	12.6	0.0	2	DOL SLTY SHLY SCT POR
126	2439 - 2440	<.01	11.4	2.68	44.0	0.0	2	SH SL DOL SL SDY SLTY
127	2440 - 2441	3.19	19.4	2.70	13.3	0.0	3	SS VFGR SLTY TR SH LAM SCT POR
128	2441 - 2442	5.89	18.7	2.69	12.2	0.0	3	SS VFGR SLTY TR SH LAM SCT POR
129	2442 - 2443	2.40	17.9	2.70	14.3	0.0	2	SS VFGR SLTY TR SH LAM SCT POR
130	2443 - 2444	2.20	17.0	2.68	17.6	0.0	2	SS VFGR SLTY TR SH LAM SCT POR
131	2444 - 2445	2.10	19.2	2.68	14.3	0.0	2	SS VFGR SLTY TR SH LAM SCT POR
132	2445 - 2446	TBFA	11.0	2.65	33.5	0.0	3	SH GY SLTY SL SDY
133	2446 - 2447	<.01	12.5	2.72	48.1	0.0	3	SH RDBRN SLTY SL SDY
134	2447 - 2448	0.10	14.7	2.77	47.1	0.0	3	SH RDBRN SLTY SL SDY
135	2448 - 2449	TBFA	12.7	2.72	40.9	0.0	4	SH RDBRN SLTY SL SDY
136	2449 - 2450	2.40	10.0	2.69	59.6	0.0	5	SH RDBRN SLTY SL SDY
137	2450 - 2451	TBFA	TBFA	TBFA	TBFA	TBFA	7	SH GYGN - GY SLTY SL SDY
138	2451 - 2452	<.01	11.5	2.69	43.7	0.0	5	SH RDBRN SLTY SL SDY
139	2452 - 2453	1.95	13.3	2.77	43.7	0.0	6	DOL RDBRN SH SLTY SCT POR
140	2453 - 2454	0.51	15.4	2.77	39.6	0.0	3	DOL RDBRN SH SLTY SCT POR
141	2454 - 2455	0.34	15.5	2.69	42.8	0.0	3	SH RDBRN SLTY SL SDY

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					H2O	OIL		
142	2455 - 2456	<.01	11.9	2.71	56.5	0.0	5	SH RDBRN SLTY SL SDY
143	2456 - 2457	<.01	12.7	2.71	52.2	0.0	3	SH RDBRN SLTY SL SDY
144	2457 - 2458	0.03	13.6	2.73	49.5	0.0	4	SH RDBRN SLTY SL SDY
145	2458 - 2459	0.01	15.1	2.70	48.4	0.0	5	SH RDBRN SLTY SL SDY
146	2459 - 2460	1.39	10.3	2.72	45.7	0.0	8	SH RDBRN GY SH INCL SLTY SL SDY
147	2460 - 2461	<.01	10.9	2.69	47.8	0.0	3	SH RDBRN GY SH INCL SLTY SL SDY
148	2461 - 2462	TBFA	14.7	2.74	60.1	0.0	5	SH RDBRN SLTY SL SDY
149	2462 - 2463	0.34	14.6	2.73	46.3	0.0	4	SH RDBRN SLTY SL SDY
150	2463 - 2464	0.67	17.3	2.72	32.4	0.0	4	SH RDBRN SLTY SL SDY
151	2464 - 2465	0.04	12.0	2.72	60.3	0.0	4	SH RDBRN SLTY SL SDY
152	2465 - 2466	0.01	14.9	2.69	50.3	0.0	4	SH RDBRN GY SH INCL SLTY SL SDY
153	2466 - 2467	0.29	16.0	2.72	24.2	0.0	3	SH RDBRN SLTY SL SDY ANHY INCL
154	2467 - 2468	1.93	17.7	2.71	19.7	0.0	3	SH RDBRN SLTY SL SDY
155	2468 - 2469	1.12	17.7	2.71	33.4	0.0	3	SH RDBRN SLTY SL SDY
156	2469 - 2470	<.01	13.3	2.71	64.4	0.0	4	SH RDBRN SLTY SL SDY
157	2470 - 2471	0.01	15.3	2.70	55.8	0.0	3	SH RDBRN SLTY SL SDY
158	2471 - 2472	0.07	14.4	2.70	45.8	0.0	3	SH RDBRN SLTY SL SDY
159	2472 - 2473	0.14	15.2	2.70	43.1	0.0	4	SH RDBRN SLTY SL SDY
160	2473 - 2474	0.10	16.9	2.75	50.3	0.0	5	SH SLTY SL SDY DOL LAM TR ANHY
161	2474 - 2475	<.01	12.5	2.67	46.0	0.0	4	SS VFGR SLTY LAM SL SHLY SCT POR
162	2475 - 2476	0.02	11.9	2.69	55.8	0.0	3	SS VFGR SLTY LAM SL SHLY SCT POR
163	2476 - 2477	0.09	21.0	2.77	47.7	0.0	3	DOL SLTY SHLY SCT POR
164	2477 - 2478	0.03	17.6	2.77	54.9	0.0	3	DOL SLTY SHLY SCT POR
165	2478 - 2479	0.01	0.8	2.89	84.1	0.0	4	ANHY SL DOL SL SLTY DNS
166	2479 - 2480	20.24	5.5	2.81	55.5	0.0	4	ANHY SH GY - GYGN SLTY TR SDY
167	2480 - 2481	0.13	15.8	2.74	27.2	0.0	5	SLTST SL SDY TR SLTY LAM TR ANHY
168	2481 - 2482	<.01	6.5	2.71	28.7	0.0	5	SLTST SL SDY TR SLTY LAM
169	2482 - 2483	<.01	6.4	2.72	36.4	0.0	2	SLTST SL SDY TR SLTY LAM
170	2483 - 2484	<.01	5.8	2.71	37.7	0.0	3	SLTST SL SDY TR SLTY LAM
171	2484 - 2485	0.01	6.8	2.74	30.6	0.0	2	SLTST SL SDY TR SLTY LAM
172	2485 - 2486	0.01	8.3	2.74	32.0	0.0	2	SLTST SL SDY TR SLTY LAM

ARCO OIL & GAS

Well: JUNGFERMAN # 2
 County: GRANT COUNTY, KANSAS
 Field: PANOWA
 PLUG ANALYSIS WITH METHANOL LEACH

Location: 1250 FNL & FEL SEC 31 T27S R38W
 Elevations: GL 3131 KB 3142
 API No.: 15-067-21250
 Analyst: DAVID FLOYD
 Date: 01-03-94

SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS		ROP	LITHOLOGY
					H2O	OIL		
173	2486 - 2487	0.12	9.0	2.77	28.1	0.0	2	SLTST SL SLTY TR LAM LG ANHY INCL
174	2487 - 2488	0.13	15.4	2.78	41.9	0.0	3	DOL SL ANHY SLTY TR SH SCT POR
175	2488 - 2489	0.69	14.4	2.77	29.8	0.0	3	DOL SL ANHY SLTY TR SH SCT POR
176	2489 - 2490	0.55	13.0	2.74	23.7	0.0	3	DOL SL SLTY TR ANHY SCT POR
177	2490 - 2491	0.71	14.4	2.77	23.5	0.0	2	DOL SL SLTY TR ANHY SCT POR
178	2491 - 2492	0.34	13.2	2.79	15.8	0.0	2	DOL SL SLTY TR ANHY SCT POR
179	2492 - 2493	0.39	13.9	2.81	16.7	0.0	3	DOL SL SLTY TR ANHY SCT POR
180	2493 - 2494	0.68	14.8	2.82	12.3	0.0	2	DOL SL SLTY TR ANHY SCT POR
181	2494 - 2495	<.01	7.3	2.68	67.6	0.0	2	SH GY SL DOL SLTY TR SDY
	2495 - 2496		NO ANALYSIS				3	SH GY SL DOL SLTY TR SDY
182	2496 - 2497	<.01	8.5	2.71	43.0	0.0	3	SH GY SL DOL SL ANHY SLTY TR SDY
183	2497 - 2498	0.62	11.7	2.67	17.3	0.0	2	SS WFGR SLTY TR SH SCT POR
184	2498 - 2499	2.78	13.3	2.69	12.9	0.0	2	SS WFGR SLTY TR SH SCT POR
185	2499 - 2500	0.80	12.1	2.74	57.6	0.0	2	DOL SLTY SHLY SCT POR
186	2500 - 2501	0.07	14.6	2.76	56.4	0.0	4	DOL SLTY SHLY SCT POR
187	2501 - 2502	0.01	15.1	2.75	58.8	0.0	3	DOL SLTY SHLY SCT POR
188	2502 - 2503	0.70	15.9	2.71	22.3	0.0	4	DOL SLTY SHLY SCT POR
189	2503 - 2504	0.83	15.0	2.68	20.8	0.0	3	SS WFGR SHLY SLTY SCT POR
190	2504 - 2505	0.06	8.8	2.79	45.1	0.0	4	ANHY SH SLTY TR SDY
191	2505 - 2506	1.07	16.4	2.67	27.1	0.0	3	SS WFGR SLTY SCT POR
192	2506 - 2507	0.98	16.3	2.67	31.4	0.0	3	SS WFGR SLTY SCT POR
193	2507 - 2508	1.72	15.5	2.69	26.9	0.0	2	SS WFGR SLTY SCT POR
194	2508 - 2509	1.81	16.9	2.68	26.5	0.0	4	SS WFGR SLTY SL SHLY SCT POR
195	2509 - 2510	0.32	15.8	2.68	29.8	0.0	3	SS WFGR SLTY SL SHLY SCT POR
196	2510 - 2511	0.01	13.0	2.71	52.1	0.0	2	SH RDBRN SLTY SL SDY
197	2511 - 2512	0.18	15.1	2.68	43.5	0.0	3	SH RDBRN SLTY SL SDY
198	2512 - 2513	0.38	15.0	2.67	32.3	0.0	3	SH RDBRN SLTY SL SDY
199	2513 - 2514	<.01	12.3	2.68	59.0	0.0	3	SH RDBRN SLTY SL SDY
200	2514 - 2515	TBFA	10.4	2.69	65.1	0.0	3	SH GY - GYGN SLTY SL SDY
201	2515 - 2516	65.70	13.9	2.76	47.0	0.0	5	SH RDBRN SLTY SL SDY
202	2516 - 2517	0.90	15.1	2.68	39.9	0.0	3	SH RDBRN SLTY SL SDY

ARCO OIL & GAS

Well: JUNGFERMAN # 2

County: GRANT COUNTY, KANSAS

Field: PANOWA

PLUG ANALYSIS WITH METHANOL LEACH

Location: 1250 FNL & FEL SEC 31 T27S R38W

Elevations: GL 3131 KB 3142

API No.: 15-067-21250

Analyst: DAVID FLOYD

Date: 01-03-94

SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS H2O	OIL	ROP	LITHOLOGY
203	2517 - 2518	0.64	15.5	2.66	26.0	0.0	2	SS TAN-RDBRN WFGR SLTY SCT POR
204	2518 - 2519	1.90	18.6	2.71	20.4	0.0	2	SS TAN-RDBRN WFGR SLTY SCT POR
205	2519 - 2520	2.54	19.4	2.70	24.9	0.0	2	SS TAN-RDBRN WFGR SLTY SCT POR
206	2520 - 2521	5.91	18.4	2.67	20.0	0.0	2	SS TAN-RDBRN WFGR SLTY SCT POR
207	2521 - 2522	0.50	17.1	2.66	29.8	0.0	2	SS TAN-RDBRN WFGR SLTY SCT POR
208	2522 - 2523	0.23	15.7	2.72	26.8	0.0	3	SS GY-GYGN WFGR SLTY SCT POR
209	2523 - 2524	<.01	14.2	2.70	42.2	0.0	8	SS GY-GYGN WFGR SLTY SCT POR
210	2524 - 2525	<.01	7.0	2.74	61.9	0.0	7	SH ABNT ANHY SLTY SL SDY
211	2525 - 2526	<.01	6.7	2.73	73.9	0.0	5	SH ABNT ANHY SLTY SL SDY
212	2526 - 2527	8.06	10.1	2.75	22.5	0.0	3	DOL SLTY TR SH SCT POR
213	2527 - 2528	0.17	11.9	2.75	13.7	0.0	4	DOL SLTY TR SH SCT POR
214	2528 - 2529	<.01	9.8	2.75	23.4	0.0	3	DOL SLTY TR SH SCT POR
215	2529 - 2530	3.50	8.1	2.77	83.2	0.0	3	SH ABNT ANHY SLTY SL SDY
216	2530 - 2531	<.01	9.0	2.72	25.4	0.0	4	DOL SLTY SL SHLY SCT ANHY SCT POR
217	2531 - 2532	0.27	13.4	2.72	11.9	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
218	2532 - 2533	0.29	13.1	2.72	16.4	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
219	2533 - 2534	0.25	13.1	2.72	20.1	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
220	2534 - 2535	0.21	12.6	2.72	20.8	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
221	2535 - 2536	0.24	12.7	2.72	23.2	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
222	2536 - 2537	0.33	12.6	2.73	21.2	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
223	2537 - 2538	0.11	10.4	2.72	26.5	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
224	2538 - 2539	0.41	13.8	2.73	21.1	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
225	2539 - 2540	2.21	14.2	2.73	10.5	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
226	2540 - 2541	1.86	14.4	2.73	13.1	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
227	2541 - 2542	2.24	14.0	2.71	18.1	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
228	2542 - 2543	1.97	14.8	2.71	21.4	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
229	2543 - 2544	1.77	14.8	2.73	25.1	0.0	1	DOL SLTY SL SHLY SCT ANHY SCT POR
230	2544 - 2545	1.09	14.6	2.73	21.2	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
231	2545 - 2546	0.55	12.3	2.74	19.7	0.0	1	DOL SLTY SL SHLY SCT ANHY SCT POR
232	2546 - 2547	0.41	13.9	2.71	20.3	0.0	1	DOL SLTY SL SHLY SCT ANHY SCT POR
233	2547 - 2548	1.34	15.4	2.73	14.5	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR

ARCO OIL & GAS

Well: JUNGFERMAN # 2
 County: GRANT COUNTY, KANSAS
 Field: PANOWA
 PLUG ANALYSIS WITH METHANOL LEACH

Location: 1250 FNL & FEL SEC 31 T27S R38W
 Elevations: GL 3131 KB 3142
 API No.: 15-067-21250
 Analyst: DAVID FLOYD
 Date: 01-03-94

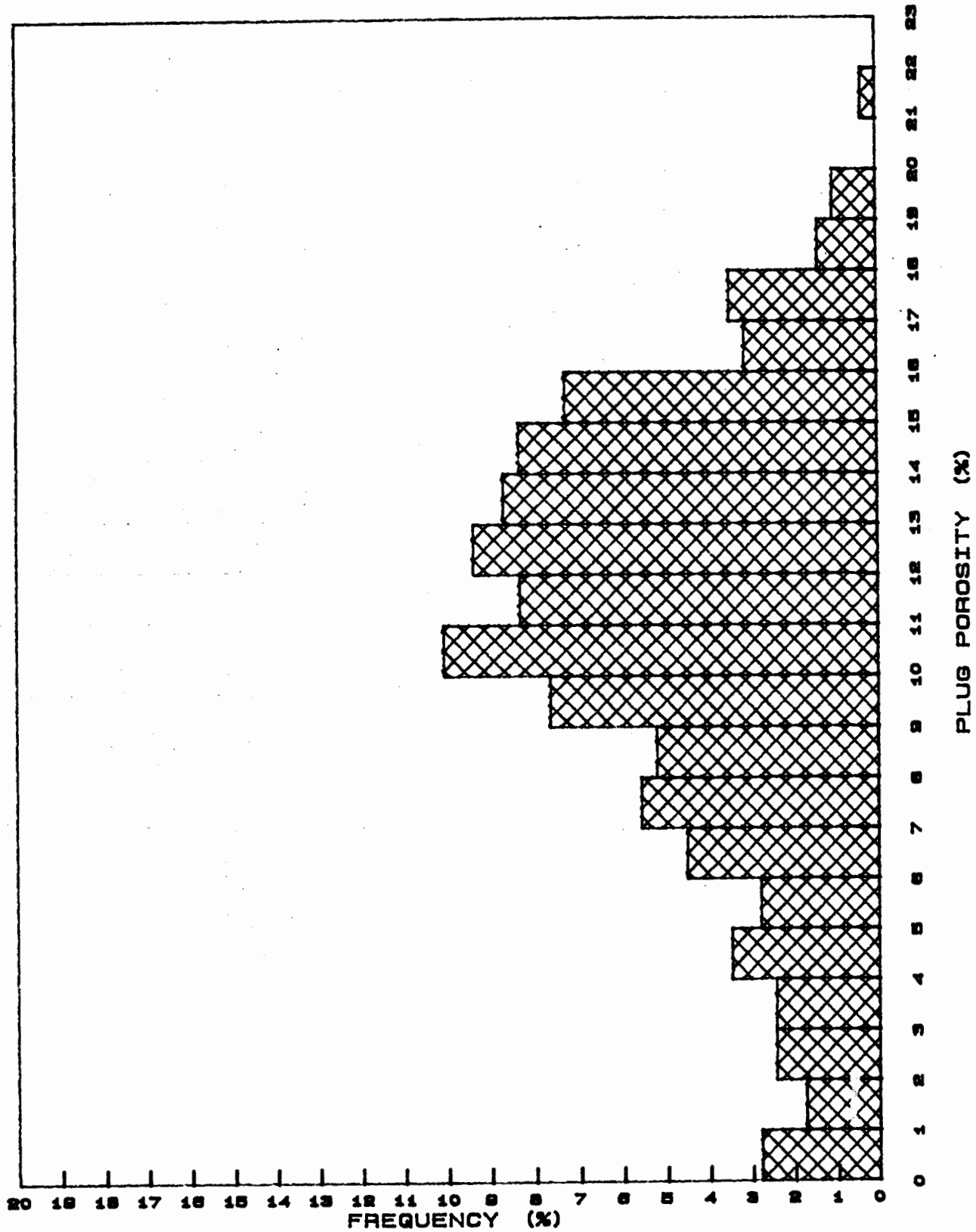
SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS		ROP	LITHOLOGY
					H2O	OIL		
234	2548 - 2549	0.19	12.3	2.71	18.6	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
235	2549 - 2550	0.48	14.2	2.71	20.8	0.0	1	DOL SLTY SL SHLY SCT ANHY SCT POR
236	2550 - 2551	2.87	16.4	2.73	21.1	0.0	1	DOL SLTY SL SHLY SCT ANHY SCT POR
237	2551 - 2552	0.80	15.8	2.71	20.4	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
238	2552 - 2553	0.18	12.7	2.71	20.8	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
239	2553 - 2554	0.17	11.1	2.70	19.5	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
240	2554 - 2555	0.21	12.1	2.71	16.4	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
241	2555 - 2556	0.03	9.0	2.71	23.6	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
242	2556 - 2557	<.01	7.4	2.71	27.2	0.0	2	DOL SLTY SL SHLY SCT ANHY SCT POR
243	2557 - 2558	<.01	7.2	2.72	34.0	0.0	3	DOL SLTY SL SHLY SCT ANHY SCT POR
244	2558 - 2559	<.01	2.2	2.66	91.9	0.0	3	SH SL DOL SLTY TR SDY
245	2559 - 2560	<.01	2.5	2.66	92.9	0.0	3	SH SL DOL SLTY TR SDY
246	2560 - 2561	<.01	2.5	2.66	86.5	0.0	3	SH SL - MOD DOL SLTY TR SDY
247	2561 - 2562	<.01	2.6	2.66	89.4	0.0	2	SH SL - MOD DOL SLTY TR SDY
248	2562 - 2563	<.01	4.0	2.67	95.2	0.0	2	SH SL - MOD DOL SLTY TR SDY
249	2563 - 2564	0.14	4.5	2.66	79.6	0.0	3	SH SL - MOD DOL SLTY TR SDY
250	2564 - 2565	<.01	4.0	2.60	83.2	0.0	2	SH GY SLTY SLTY LAM TR SDY
251	2565 - 2566	<.01	1.9	2.65	84.1	0.0	2	SH SL - MOD DOL SLTY TR SDY
252	2566 - 2567	<.01	2.3	2.67	76.9	0.0	2	SH SL - MOD DOL SLTY TR SDY
253	2567 - 2568	2.34	4.4	2.68	72.9	0.0	3	SH SL - MOD DOL SLTY TR SDY
254	2568 - 2569	0.75	13.3	2.73	23.5	0.0	2	SS VFGR SLTY SL SHLY SCT POR
255	2569 - 2570	10.67	17.7	2.72	24.1	0.0	2	SS VFGR SLTY SL SHLY SCT POR
256	2570 - 2571	4.10	17.3	2.74	23.6	0.0	3	SS VFGR SLTY SL SHLY SCT POR
257	2571 - 2572	3.28	18.0	2.74	17.5	0.0	3	SS VFGR SLTY SL SHLY SCT POR
258	2572 - 2573	8.30	16.6	2.72	19.7	0.0	3	SS VFGR SLTY SL SHLY SCT POR
259	2573 - 2574	0.73	14.0	2.70	26.4	0.0	2	SS VFGR SLTY SL SHLY SCT POR
260	2574 - 2575	2.35	15.0	2.71	22.7	0.0	3	SS VFGR SLTY SL SHLY SCT POR
261	2575 - 2576	1.58	14.8	2.71	25.5	0.0	3	SS VFGR SLTY SH LAM SCT POR
262	2576 - 2577	1.10	14.4	2.68	27.7	0.0	3	SS VFGR SLTY SH LAM SCT POR
263	2577 - 2578	0.01	11.2	2.69	59.2	0.0	1	SH SL - MOD DOL SLTY SDY LAM
264	2578 - 2579	0.06	11.7	2.68	49.9	0.0	1	SS VFGR SLTY SL SHLY SCT POR

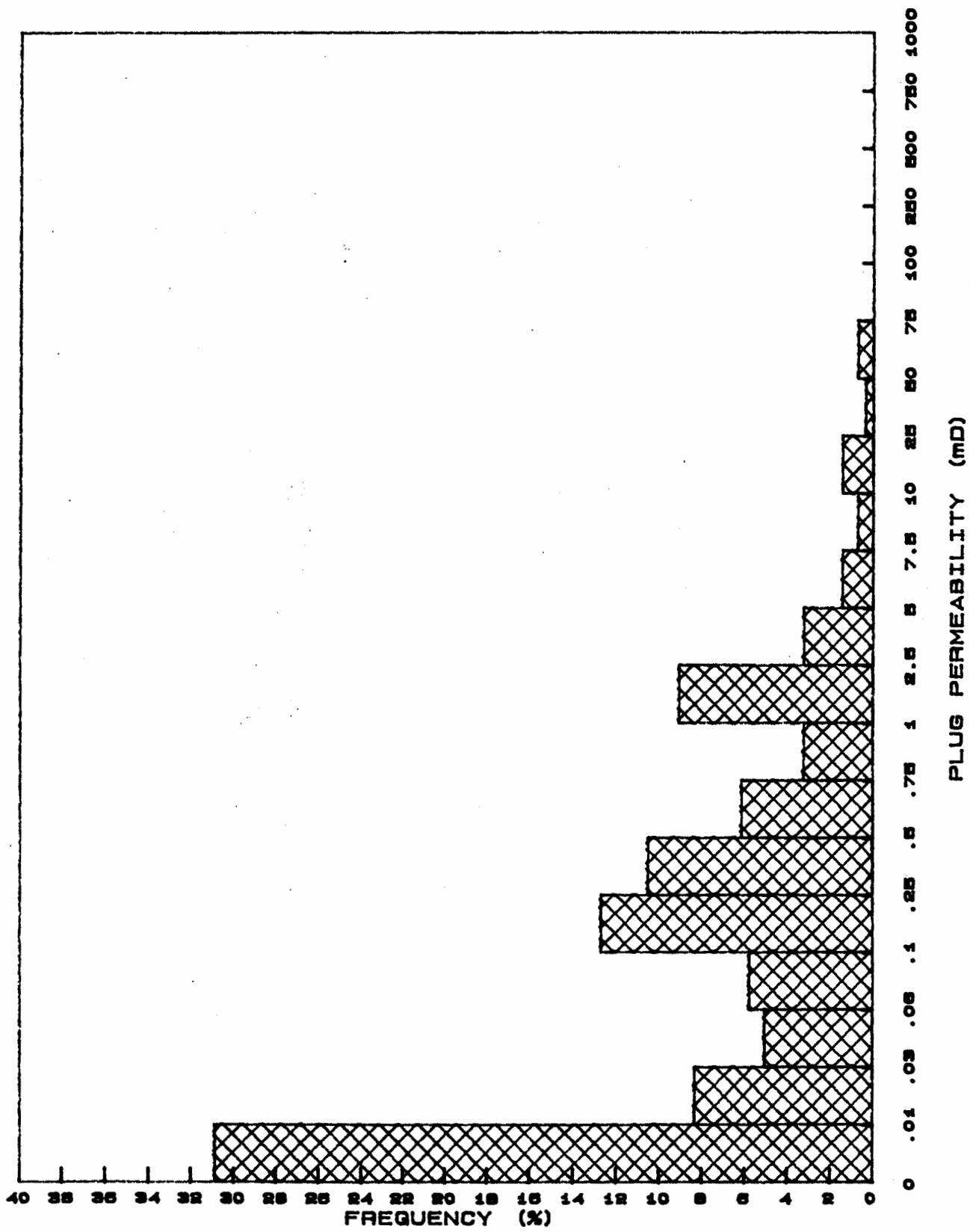
ARCO OIL & GAS

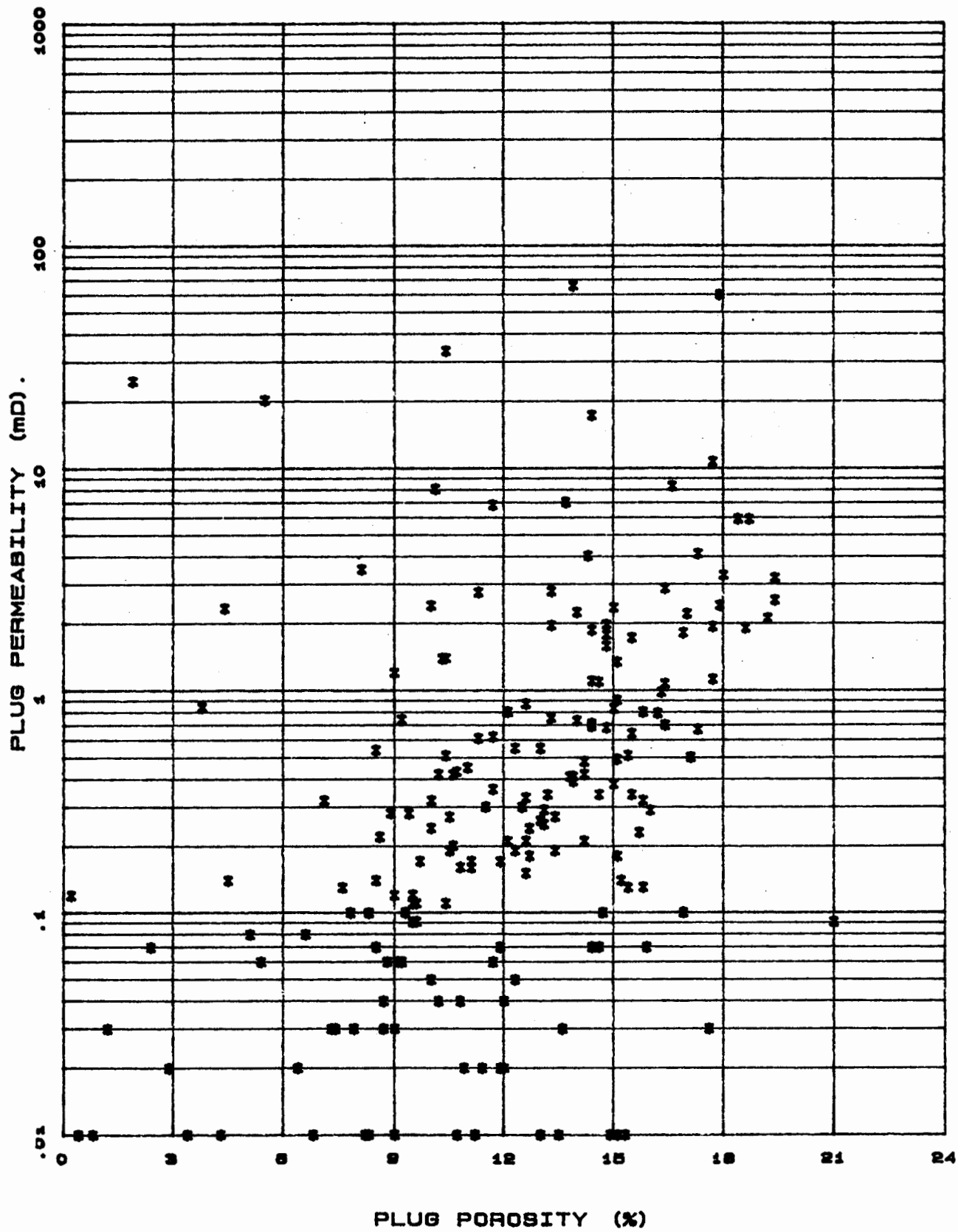
Well: JUNGFERMAN # 2
 County: GRANT COUNTY, KANSAS
 Field: PANOWA
 PLUG ANALYSIS WITH METHANOL LEACH

Location: 1250 FNL & FEL SEC 31 T27S R38W
 Elevations: GL 3131 KB 3142
 API No.: 15-067-21250
 Analyst: DAVID FLOYD
 Date: 01-03-94

SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS		ROP	LITHOLOGY
					H2O	OIL		
265	2579 - 2580	0.42	14.2	2.68	31.6	0.0	1	SS VFGR SLTY SL SHLY SCT POR
266	2580 - 2581	0.15	12.6	2.69	30.9	0.0	1	SS VFGR SLTY SL SHLY SCT POR
267	2581 - 2582	0.26	13.0	2.69	23.5	0.0	1	SS VFGR SLTY SL SHLY SCT POR
268	2582 - 2583	0.07	11.9	2.72	24.4	0.0	1	SS VFGR SLTY SL SHLY SCT POR
269	2583 - 2584	0.02	10.9	2.70	36.6	0.0	1	SS VFGR SLTY SL SHLY SCT POR
270	2584 - 2585	<.01	12.4	2.78	32.0	0.0	2	DOL MOD SDY SLTY TR SH SCT POR
271	2585 - 2586	0.51	10.4	2.71	51.3	0.0	4	SS VFGR SLTY SL SHLY SCT POR
272	2586 - 2587	0.03	7.4	2.71	61.5	0.0	4	SH RDBRN SLTY SL SDY
273	2587 - 2588	0.07	8.5	2.74	63.5	0.0	3	SH RDBRN SLTY SL SDY
274	2588 - 2589	0.09	9.5	2.74	61.6	0.0	4	SH RDBRN SLTY SL SDY
275	2589 - 2590		NO ANALYSIS				4	SH RDBRN GY - GYGN SLTY SL SDY
276	2590 - 2591	0.08	6.6	2.70	56.5	0.0	3	SH RDBRN GY - GYGN SLTY SL SDY
277	2591 - 2592	0.32	7.1	2.72	55.2	0.0	3	SH RDBRN SLTY SL SDY
278	2592 - 2593	0.84	3.8	2.67	79.8	0.0	4	SH RDBRN SLTY SL SDY
279	2593 - 2594	<.01	4.1	2.69	56.1	0.0	4	SH RDBRN - GYGN SLTY SL SDY
280	2594 - 2595	<.01	4.1	2.67	59.1	0.0	3	SH RDBRN - GYGN SLTY SL SDY
281	2595 - 2596	<.01	5.9	2.68	54.0	0.0	3	SH RDBRN - GYGN SLTY SL SDY
282	2596 - 2597	0.19	10.5	2.70	68.5	0.0	3	SH RDBRN SLTY SL SDY
283	2597 - 2598	<.01	7.2	2.71	54.2	0.0	2	SH RDBRN SLTY SL SDY
284	2598 - 2599	<.01	5.2	2.64	80.3	0.0	3	SH RDBRN SLTY SL SDY
285	2599 - 2600	TBFA	13.1	2.76	59.1	0.0	3	SH RDBRN SLTY SL SDY
286	2600 - 2601	0.01	9.0	2.79	47.2	0.0	3	SH RDBRN SLTY SL SDY
287	2601 - 2602	<.01	9.6	2.72	55.8	0.0	3	SH RDBRN SLTY SL SDY
288	2602 - 2603	<.01	8.7	2.74	52.3	0.0	3	SH RDBRN - GYGN SLTY SL SDY
289	2603 - 2604	<.01	3.3	2.67	85.2	0.0	3	SH RDBRN - GYGN SLTY SL SDY
	2604 - 2605	<.01	14.3	2.74	50.4	0.0	3	SH RDBRN SLTY SL SDY







NOMENCLATURE

a/a	As Above	fos	Fossil(iferous)
abnt	Abundant	frac	Fracture
ang	Angular	fri	Friable
anhy	Anhydrite(ic)		
aren	Arenaceous	glau	Glauconite
arg	Argillaceous	g	Good
		grdg	Grading
bcm	Becoming	gr	Grain
bit	Bitumenious	gy	Gray(ish)
blk	Black	gn	Green
blky	Blocky	gyp	Gypsum
bn	Brown	gld	Gold
bl	Blue		
bri	Bright	hal	Halite
buf	Buff	hd	Hard
bur	Burrowed	hvy	Heavy
		hz	Horizontal
calc	Calcareous		
carb	Carbonaceous	ip	In Part
cmt	Cement	incl	Inclusion
chlky	Chalky	incr	Increasing
cht	Chert(y)	intbd	Interbedded
cly	Clay(ey)	intxl	Intercrystalline
cln	Clean	intgr	Intergranular
clr	Clear		
c	coarse	lam	Laminated
conch	Conchoidal	lg	Large
cons	Consolidated	lt	Light(er)
crp	Crypto	lig	Lignite
xl(n)	Crystal(line)	ls	Limestone
		lse	Loose
dk	Dark		
dd	Dead	m	Medium
dns	Dense	mic	Mica
dia	Diameter	micxl	Microcrystalline
dism	Disseminated	mlky	Milky
dol	Dolomite(ic)	mnrl	Mineral
		mod	Moderate
erthy	Earthy	mott	Mottled
embd	Embedded	mdst	Mudstone
evap	Evaporite		
		n/s	No Show
fnt	Faint	nvp	No Visible Porosity
fr	Fair	nod	Nodules
f	Fine		
fis	Fissle	occ	Occasional
flu	Fluorescence	od	Odor

O	Oil	tex	Texture
ool	Oolitic	tr	Trace
opq	Opaque	transl	Translucent
orng	Orange	Transp	Transparent
		trip	Tripolitic
ptg	Parting		
plty	Platey	uncons	Unconsolidated
p	Poor	up	Upper
por	Porosity		
pos	Possible	vert	Vertical
pur	Purple	vis	Visible
pred	Predominant(ly)	v	Very
pyr	Pyrite	vit	Vitreous
		vug	Vug(gy)
qtz	Quartz		
		wxy	Waxy
rr	Rare(ly)	w/	With
rex1	Recrystalized	w/o	With Out
rd	Red	wh	White
res	Residual	wk	Weak
rnd	Round(ed)		
ROP	Rate of Penetration	yel	Yellow
		zn	Zone
sdv	Sand(y)		
ss	Sandstone		
sat	Saturated		
sct	Scattered		
sh	Shale		
shly	Shaley		
sil	Silica(iceous)		
slty	Silty		
sltst	Siltstone		
sl	Slight(ly)		
srt	Sorted(ing)		
sb	Sub		
suc	Sucrosic		
S	Sulfur(ous)		

RESERVOIRS, INCORPORATED

COMPANY: ARCO OIL & GAS
WELL: JUNGFERMAN # 2
FIELD: PANOWA
COUNTY: GRANT STATE: KANSAS
LOCATION: 1250 FNL 1250 FEL SEC 31 T27S R38W
API NO.: 15-067-21250

FILE NO.: RMC069
DATE: 01-03-94
ELEV.: 6L 3131, KB 3142
CORED BY: WEATHERFORD
ANALYST: DAVID FLOYD

GAMMA RAY.
CORING TIME.

POROSITY %.

PERMEABILITY.

H2O % PV. ■
OIL % PV. ■

