

SMITH ENERGY SERVICES

MWF^R COMPUTER REPORT

Measurement While Fracturing

J. P. MCHUGH

CARRACAS 27A #82

RIO ARriba COUNTY

NEW MEXICO

FEBRUARY 2, 1989

SMITH ENERGY SERVICES

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CARRACAS 27A #82

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SUMMARY DATA

ESTIMATED BOTTOM HOLE TEMPERATURE	250	(deg. F)
ESTIMATED RESERVOIR PRESSURE	3380	(psi)
ESTIMATED FRACTURE GRADIENT	0.66	
ESTIMATED CLOSURE STRESS	6300	(psi)

PERFORATION INTERVAL	9680-9790	(feet)
PERFORATION DIAMETERS	0.50	(inches)
NUMBER OF PERFORATIONS	56	

FLUSH	FRESH WATER	
FLUSH CAPACITY	130	(bbls)

PROPPANT	SAND	
PROPPANT MESH SIZE	20-40	
PROPPANT SPECIFIC GRAVITY	22.08	(ppg)

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SUMMARY DATA

TREATING FLUID DATA

FLUID	GEL LOADING (lbs/1000 gals)	DENSITY (ppg)
15 % HCL	0	8.37
FRESH WATER	0	8.34

TREATING STRING DATA

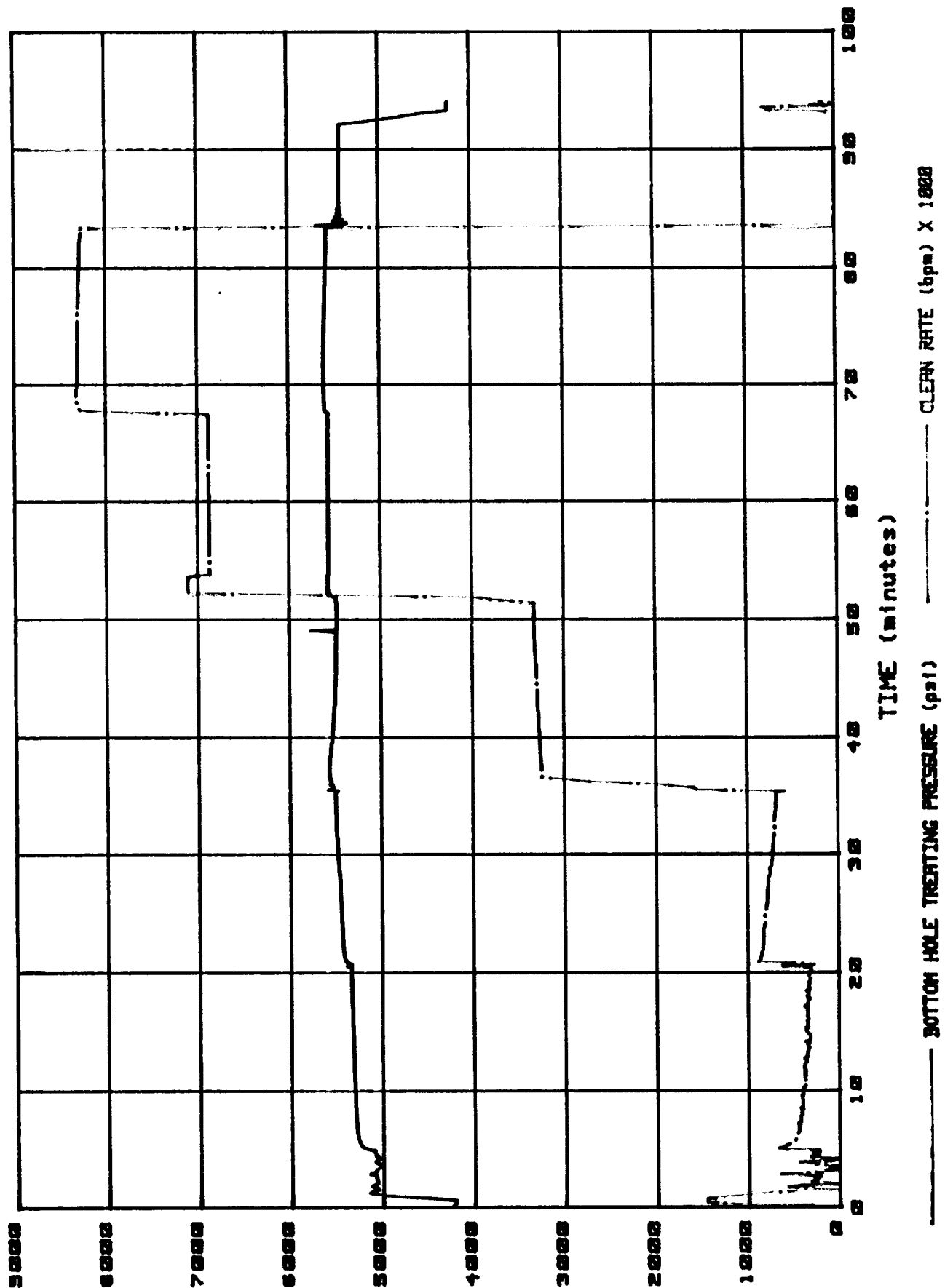
TYPE	WEIGHT (lbs/ft)	LENGTH (ft)	OD (in)	CAPACITY (bbl/ft)
TUBING	9.5	9427	3.50	0.01223
CASING	29	363	7.00	0.03940

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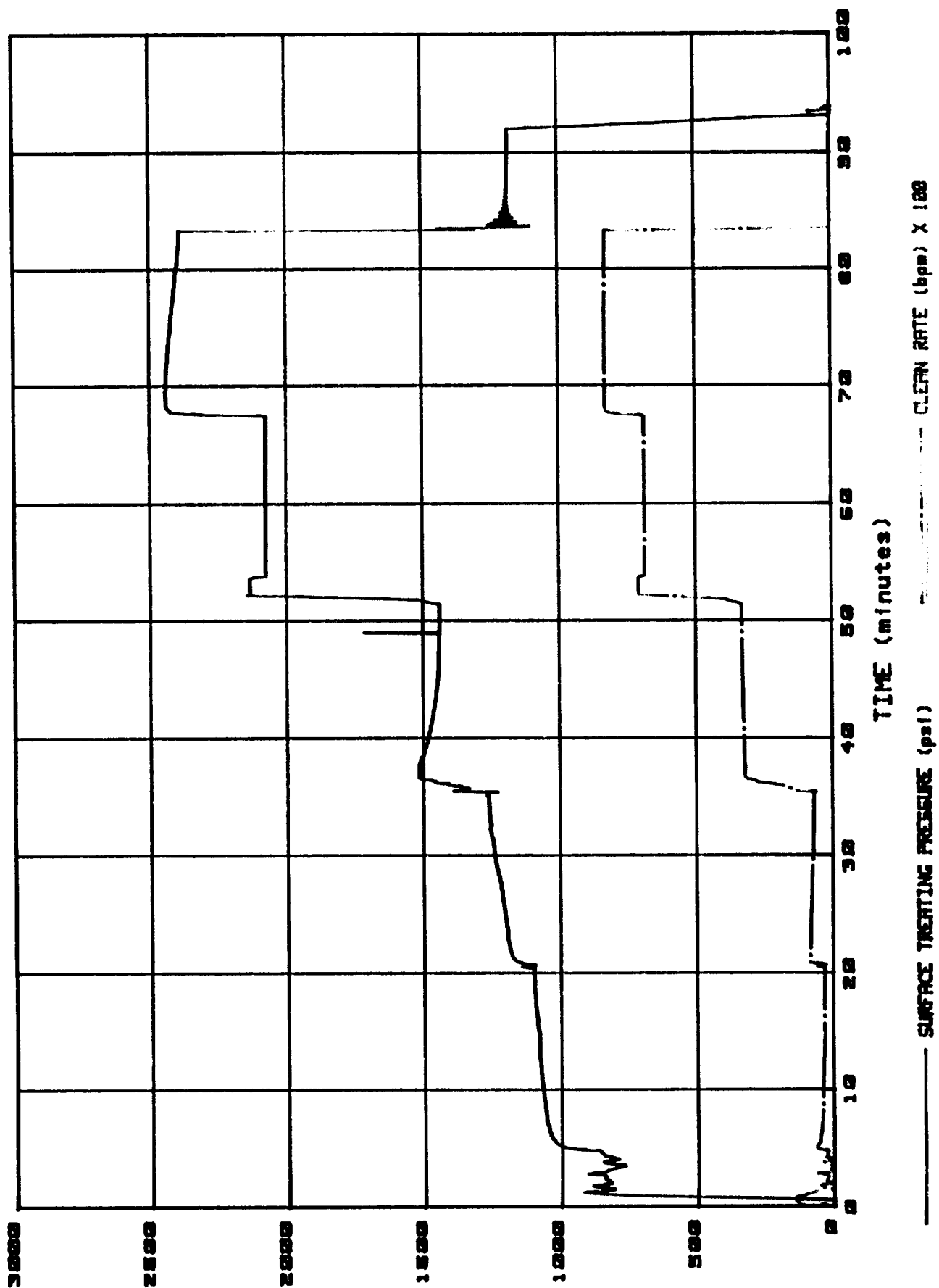
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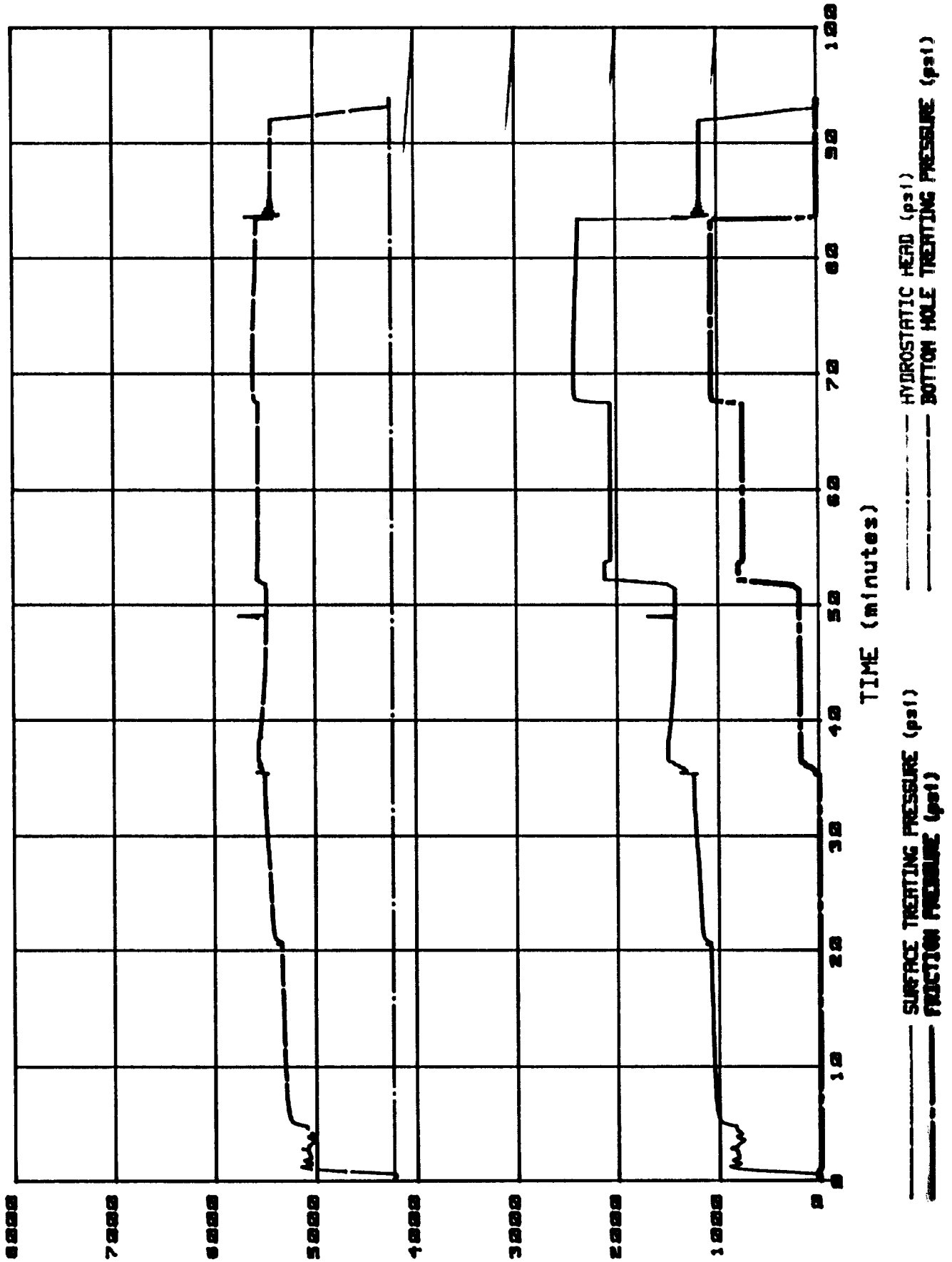
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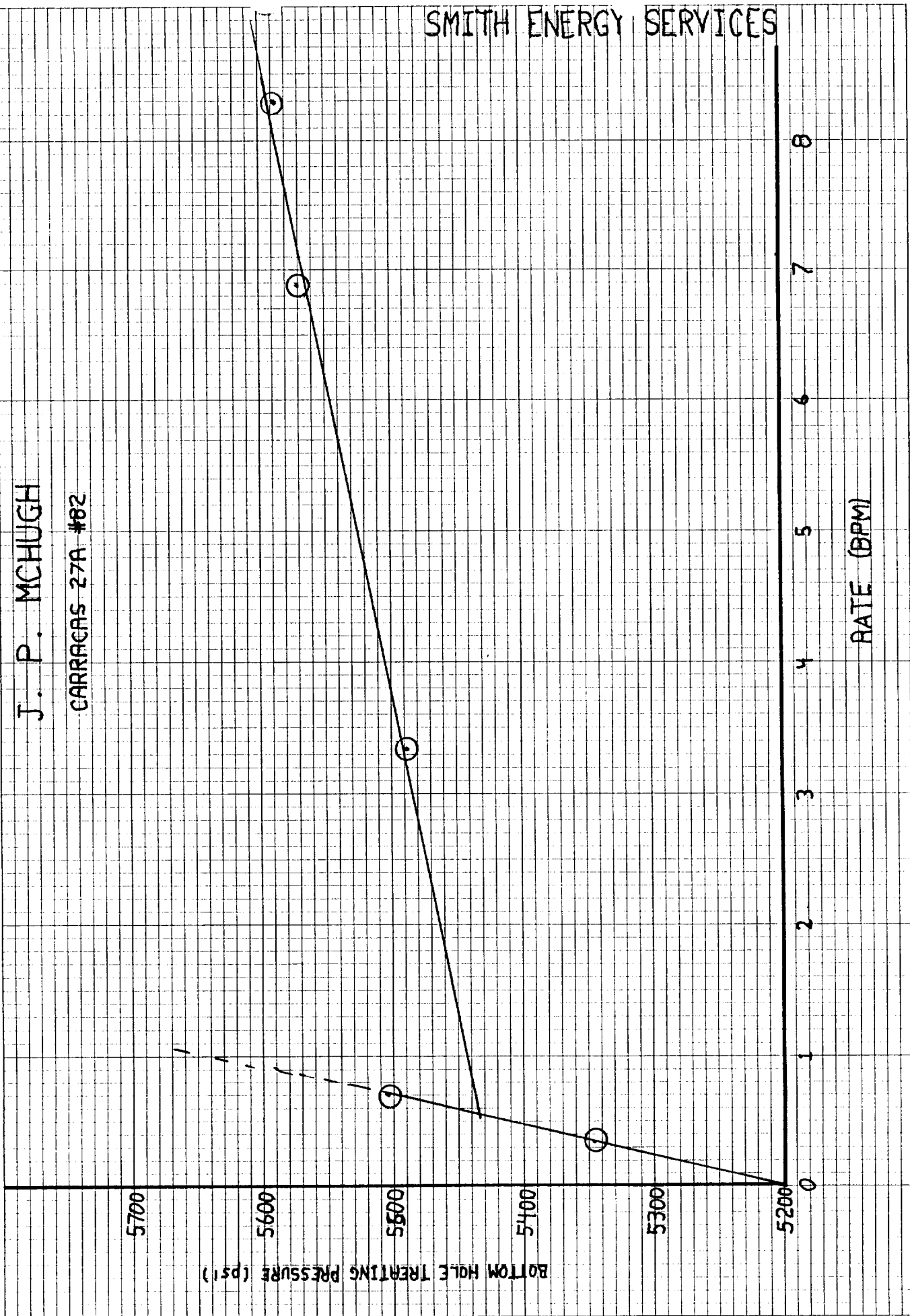
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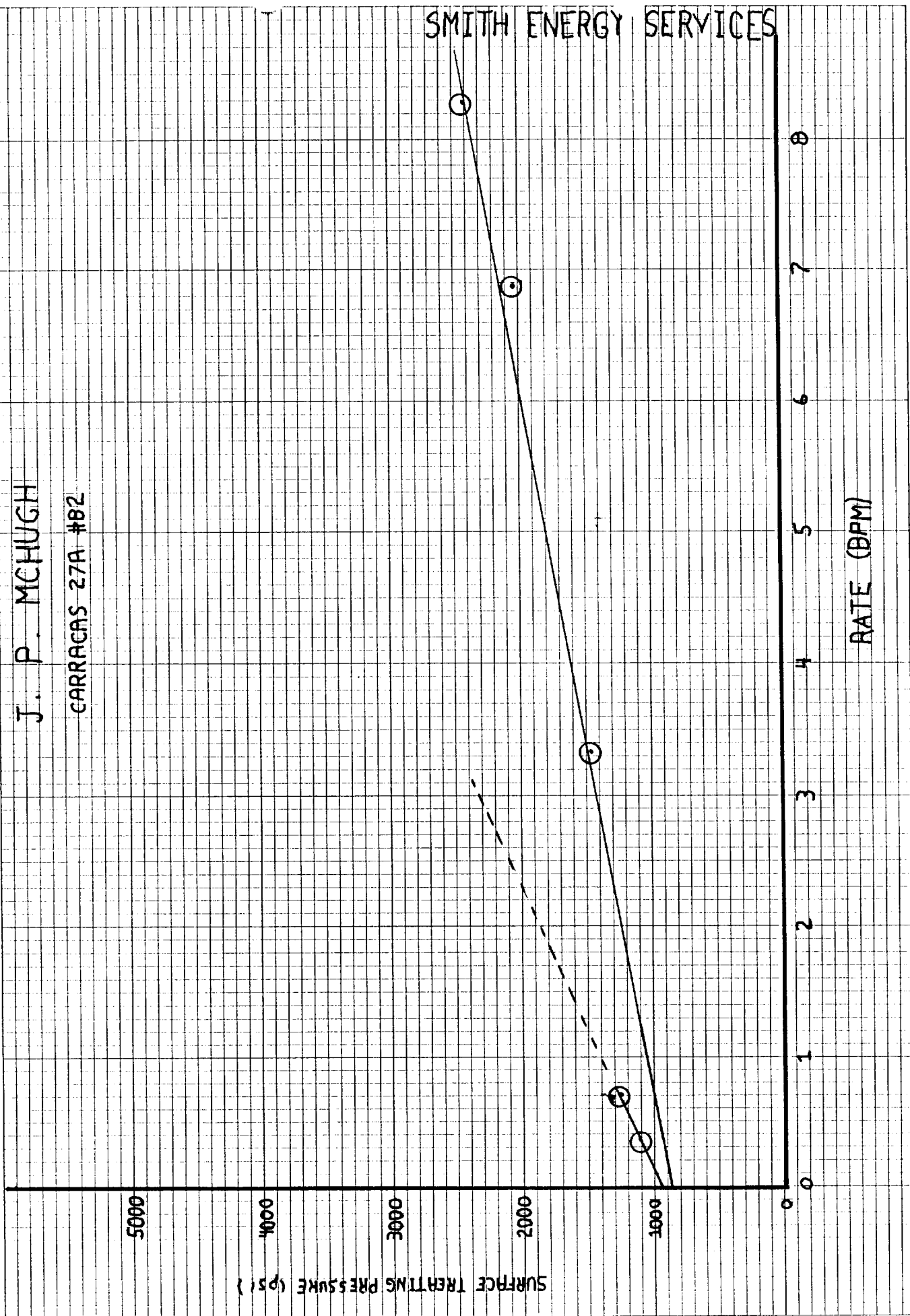
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ELAPSED TIME (min)	SURFACE TREATING PRESSURE	CLEAN RATE (bpm)	PROPANT CONC (ppg)	FLUID FRICTION PRESSURE	PERF FRICTION (psi)	HYDRO HEAD (psi)	BOTTOM HOLE PRESSURE	NET FRACTURE PRESSURE
0.1	2	0.31	0.00	0	0	4246	4247	0
0.4	3	1.39	0.00	41	0	4246	4208	0
0.5	8	1.46	0.00	45	0	4246	4209	0
0.7	205	1.46	0.00	45	0	4246	4405	0
0.9	658	1.13	0.00	28	0	4246	4876	0
1.1	882	0.85	0.00	0	0	4246	5128	0
1.3	874	0.09	0.00	0	0	4246	5119	0
1.5	807	0.29	0.00	0	0	4246	5052	0
1.7	873	0.59	0.00	0	0	4246	5119	0
1.9	847	0.00	0.00	0	0	4246	5092	0
2.1	826	0.33	0.00	0	0	4246	5072	0
2.3	838	0.26	0.00	0	0	4246	5084	0
2.5	845	0.23	0.00	0	0	4246	5090	0
2.7	855	0.36	0.00	0	0	4246	5100	0
2.9	882	0.07	0.00	0	0	4246	5127	0
3.1	832	0.17	0.00	0	0	4246	5078	0
3.3	804	0.03	0.00	0	0	4246	5049	0
3.5	769	0.00	0.00	0	0	4246	5014	0
3.7	817	0.33	0.00	0	0	4246	5062	0
3.9	848	0.11	0.00	0	0	4246	5094	0
4.1	794	0.04	0.00	0	0	4246	5040	0
4.3	825	0.22	0.00	0	0	4246	5070	0
4.5	853	0.31	0.00	0	0	4246	5099	0
4.7	862	0.22	0.00	0	0	4246	5108	0
4.9	916	0.59	0.00	0	0	4246	5161	0
5.1	993	0.62	0.00	0	0	4246	5239	0
5.3	1017	0.56	0.00	0	0	4246	5263	0
5.5	1029	0.50	0.00	0	0	4246	5274	0
5.7	1035	0.48	0.00	0	0	4246	5281	0
5.9	1043	0.48	0.00	0	0	4246	5289	0
6.1	1047	0.48	0.00	0	0	4246	5292	0
6.3	1048	0.45	0.00	0	0	4246	5293	0
6.5	1050	0.44	0.00	0	0	4246	5296	0
6.7	1054	0.46	0.00	0	0	4246	5300	0
6.9	1055	0.44	0.00	0	0	4246	5301	0
7.1	1060	0.47	0.00	0	0	4246	5306	0
7.3	1059	0.42	0.00	0	0	4246	5304	0
7.5	1061	0.44	0.00	0	0	4246	5306	0
7.7	1062	0.42	0.00	0	0	4246	5308	0
7.9	1064	0.42	0.00	0	0	4246	5309	0
8.1	1064	0.43	0.00	0	0	4246	5310	0
8.3	1065	0.42	0.00	0	0	4246	5311	0
8.5	1066	0.44	0.00	0	0	4246	5312	0
8.7	1066	0.41	0.00	0	0	4246	5312	0
8.9	1067	0.41	0.00	0	0	4246	5312	0
9.1	1069	0.41	0.00	0	0	4246	5315	0
9.3	1070	0.42	0.00	0	0	4246	5316	0
9.5	1070	0.40	0.00	0	0	4246	5315	0
9.7	1071	0.39	0.00	0	0	4246	5316	0
9.9	1072	0.39	0.00	0	0	4246	5318	0

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10.1	1074	0.41	0.00	0	0	4246	5320	0
10.3	1074	0.39	0.00	0	0	4246	5320	0
10.5	1075	0.37	0.00	0	0	4246	5321	0
10.7	1078	0.38	0.00	0	0	4246	5323	0
10.9	1077	0.37	0.00	0	0	4246	5323	0
11.1	1077	0.37	0.00	0	0	4246	5323	0
11.3	1078	0.36	0.00	0	0	4246	5323	0
11.5	1080	0.37	0.00	0	0	4246	5325	0
11.7	1080	0.36	0.00	0	0	4246	5325	0
11.9	1081	0.37	0.00	0	0	4246	5326	0
12.1	1082	0.38	0.00	0	0	4246	5328	0
12.3	1082	0.37	0.00	0	0	4246	5328	0
12.5	1082	0.35	0.00	0	0	4246	5328	0
12.7	1083	0.36	0.00	0	0	4246	5329	0
12.9	1083	0.34	0.00	0	0	4246	5328	0
13.1	1085	0.35	0.00	0	0	4246	5330	0
13.3	1085	0.34	0.00	0	0	4246	5330	0
13.5	1082	0.33	0.00	0	0	4246	5328	0
13.7	1080	0.32	0.00	0	0	4246	5326	0
13.9	1083	0.34	0.00	0	0	4246	5329	0
14.1	1084	0.32	0.00	0	0	4246	5330	0
14.3	1082	0.32	0.00	0	0	4246	5328	0
14.5	1083	0.32	0.00	0	0	4246	5329	0
14.7	1083	0.33	0.00	0	0	4246	5328	0
14.9	1085	0.35	0.00	0	0	4246	5330	0
15.1	1089	0.37	0.00	0	0	4246	5335	0
15.3	1091	0.37	0.00	0	0	4246	5337	0
15.5	1092	0.36	0.00	0	0	4246	5337	0
15.7	1091	0.34	0.00	0	0	4246	5336	0
15.9	1090	0.35	0.00	0	0	4246	5336	0
16.1	1091	0.33	0.00	0	0	4246	5336	0
16.3	1093	0.35	0.00	0	0	4246	5339	0
16.5	1096	0.36	0.00	0	0	4246	5342	0
16.7	1096	0.34	0.00	0	0	4246	5341	0
16.9	1095	0.33	0.00	0	0	4246	5340	0
17.1	1096	0.34	0.00	0	0	4246	5342	0
17.3	1097	0.34	0.00	0	0	4246	5343	0
17.5	1098	0.33	0.00	0	0	4246	5344	0
17.7	1096	0.35	0.00	0	0	4246	5342	0
17.9	1096	0.33	0.00	0	0	4246	5342	0
18.1	1099	0.35	0.00	0	0	4246	5345	0
18.3	1101	0.34	0.00	0	0	4246	5346	0
18.5	1103	0.37	0.00	0	0	4246	5348	0
18.7	1101	0.32	0.00	0	0	4246	5347	0
18.9	1102	0.34	0.00	0	0	4246	5348	0
19.1	1102	0.33	0.00	0	0	4246	5347	0
19.3	1098	0.30	0.00	0	0	4246	5344	0
19.5	1102	0.31	0.00	0	0	4246	5347	0
19.7	1104	0.33	0.00	0	0	4246	5349	0
19.9	1102	0.32	0.00	0	0	4246	5347	0

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20.1	1103	0.33	0.00	0	0	4246	5348	0
20.3	1103	0.32	0.00	0	0	4246	5349	0
20.5	1106	0.32	0.00	0	0	4246	5351	0
20.7	1096	0.27	0.00	0	0	4246	5342	0
20.9	1150	0.90	0.00	0	0	4246	5396	0
21.1	1174	0.86	0.00	0	0	4246	5419	0
21.3	1180	0.86	0.00	0	0	4246	5426	0
21.5	1185	0.84	0.00	0	0	4246	5431	0
21.7	1188	0.85	0.00	0	0	4246	5433	0
21.9	1190	0.83	0.00	0	0	4246	5436	0
22.1	1193	0.84	0.00	0	0	4246	5438	0
22.3	1194	0.84	0.00	0	0	4246	5440	0
22.5	1196	0.82	0.00	0	0	4246	5442	0
22.7	1198	0.83	0.00	0	0	4246	5444	0
22.9	1200	0.83	0.00	0	0	4246	5446	0
23.1	1198	0.82	0.00	0	0	4246	5444	0
23.3	1199	0.82	0.00	0	0	4246	5445	0
23.5	1200	0.83	0.00	0	0	4246	5446	0
23.7	1201	0.83	0.00	0	0	4246	5447	0
23.9	1202	0.81	0.00	0	0	4246	5448	0
24.1	1204	0.80	0.00	0	0	4246	5449	0
24.3	1206	0.81	0.00	0	0	4246	5452	0
24.5	1207	0.81	0.00	0	0	4246	5453	0
24.7	1207	0.81	0.00	0	0	4246	5453	0
24.9	1209	0.81	0.00	0	0	4246	5455	0
25.1	1211	0.80	0.00	0	0	4246	5457	0
25.3	1211	0.80	0.00	0	0	4246	5457	0
25.5	1212	0.79	0.00	0	0	4246	5457	0
25.7	1213	0.79	0.00	0	0	4246	5458	0
25.9	1214	0.78	0.00	0	0	4246	5460	0
26.1	1216	0.79	0.00	0	0	4246	5462	0
26.3	1217	0.78	0.00	0	0	4246	5463	0
26.5	1218	0.78	0.00	0	0	4246	5464	0
26.7	1219	0.78	0.00	0	0	4246	5465	0
26.9	1220	0.78	0.00	0	0	4246	5466	0
27.1	1221	0.78	0.00	0	0	4246	5467	0
27.3	1224	0.77	0.00	0	0	4246	5470	0
27.5	1222	0.77	0.00	0	0	4246	5467	0
27.7	1224	0.77	0.00	0	0	4246	5470	0
27.9	1227	0.77	0.00	0	0	4246	5472	0
28.1	1229	0.77	0.00	0	0	4246	5474	0
28.3	1230	0.75	0.00	0	0	4246	5476	0
28.5	1234	0.75	0.00	0	0	4246	5479	0
28.7	1234	0.75	0.00	0	0	4246	5480	0
28.9	1237	0.76	0.00	0	0	4246	5483	0
29.1	1239	0.73	0.00	0	0	4246	5484	0
29.3	1241	0.74	0.00	0	0	4246	5486	0
29.5	1243	0.74	0.00	0	0	4246	5489	0
29.7	1244	0.72	0.00	0	0	4246	5490	0
29.9	1247	0.73	0.00	0	0	4246	5493	0

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30.1	1247	0.72	0.00	0	0	4246	5493	0
30.3	1247	0.73	0.00	0	0	4246	5493	0
30.5	1247	0.72	0.00	0	0	4246	5493	0
30.7	1249	0.72	0.00	0	0	4246	5495	0
30.9	1251	0.71	0.00	0	0	4246	5497	0
31.1	1251	0.72	0.00	0	0	4246	5497	0
31.3	1252	0.71	0.00	0	0	4246	5498	0
31.5	1256	0.71	0.00	0	0	4246	5502	0
31.7	1256	0.70	0.00	0	0	4246	5502	0
31.9	1256	0.70	0.00	0	0	4246	5502	0
32.1	1262	0.70	0.00	0	0	4246	5508	0
32.3	1258	0.70	0.00	0	0	4246	5503	0
32.5	1254	0.70	0.00	0	0	4246	5500	0
32.7	1260	0.71	0.00	0	0	4246	5506	0
32.9	1262	0.70	0.00	0	0	4246	5507	0
33.1	1259	0.70	0.00	0	0	4246	5505	0
33.3	1262	0.70	0.00	0	0	4246	5508	0
33.5	1266	0.69	0.00	0	0	4246	5512	0
33.7	1261	0.68	0.00	0	0	4246	5507	0
33.9	1264	0.69	0.00	0	0	4246	5510	0
34.1	1262	0.69	0.00	0	0	4246	5508	0
34.3	1265	0.69	0.00	0	0	4246	5510	0
34.5	1265	0.69	0.00	0	0	4246	5510	0
34.7	1267	0.68	0.00	0	0	4246	5513	0
34.9	1266	0.68	0.00	0	0	4246	5512	0
35.1	1271	0.68	0.00	0	0	4246	5516	0
35.3	1270	0.67	0.00	0	0	4246	5516	0
35.5	1394	1.55	0.00	50	0	4246	5589	0
35.7	1338	1.59	0.00	53	0	4246	5530	0
35.9	1368	1.84	0.00	69	0	4246	5545	0
36.1	1407	2.34	0.00	107	0	4246	5546	0
36.3	1457	2.85	0.00	152	0	4246	5550	0
36.5	1511	3.15	0.00	182	0	4246	5575	0
36.7	1517	3.25	0.00	193	0	4246	5570	0
36.9	1519	3.25	0.00	193	0	4246	5572	0
37.1	1521	3.25	0.00	193	0	4246	5574	0
37.3	1520	3.25	0.00	193	0	4246	5572	0
37.5	1518	3.25	0.00	193	0	4246	5571	0
37.7	1519	3.25	0.00	193	0	4246	5571	0
37.9	1516	3.26	0.00	194	0	4246	5567	0
38.1	1512	3.25	0.00	194	0	4246	5564	0
38.3	1510	3.25	0.00	194	0	4246	5562	0
38.5	1500	3.26	0.00	195	0	4246	5551	0
38.7	1502	3.26	0.00	195	0	4246	5553	0
38.9	1499	3.26	0.00	194	0	4246	5550	0
39.1	1495	3.27	0.00	195	0	4246	5545	0
39.3	1492	3.27	0.00	195	0	4246	5542	0
39.5	1494	3.26	0.00	195	0	4246	5545	0
39.7	1487	3.27	0.00	195	0	4246	5537	0
39.9	1485	3.27	0.00	196	0	4246	5535	0

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40.1	1484	3.27	0.00	196	0	4246	5534	0
40.3	1482	3.27	0.00	196	0	4246	5531	0
40.5	1480	3.27	0.00	196	0	4246	5530	0
40.7	1477	3.28	0.00	196	0	4246	5526	0
40.9	1477	3.28	0.00	196	0	4246	5526	0
41.1	1475	3.28	0.00	196	0	4246	5524	0
41.3	1471	3.28	0.00	196	0	4246	5521	0
41.5	1470	3.28	0.00	196	0	4246	5519	0
41.7	1468	3.28	0.00	197	0	4246	5516	0
41.9	1466	3.28	0.00	196	0	4246	5515	0
42.1	1465	3.28	0.00	197	0	4246	5514	0
42.3	1464	3.29	0.00	197	0	4246	5512	0
42.5	1462	3.29	0.00	197	0	4246	5510	0
42.7	1460	3.29	0.00	197	0	4246	5509	0
42.9	1459	3.29	0.00	197	0	4246	5507	0
43.1	1458	3.29	0.00	197	0	4246	5506	0
43.3	1456	3.29	0.00	197	0	4246	5504	0
43.5	1455	3.29	0.00	198	0	4246	5503	0
43.7	1453	3.29	0.00	198	0	4246	5501	0
43.9	1453	3.29	0.00	198	0	4246	5500	0
44.1	1453	3.29	0.00	198	0	4246	5501	0
44.3	1451	3.29	0.00	198	0	4246	5498	0
44.5	1450	3.29	0.00	198	0	4246	5497	0
44.7	1448	3.29	0.00	198	0	4246	5496	0
44.9	1449	3.30	0.00	198	0	4246	5496	0
45.1	1447	3.29	0.00	198	0	4246	5495	0
45.3	1447	3.29	0.00	198	0	4246	5495	0
45.5	1448	3.30	0.00	198	0	4246	5495	0
45.7	1447	3.30	0.00	198	0	4246	5494	0
45.9	1445	3.30	0.00	198	0	4246	5493	0
46.1	1446	3.30	0.00	199	0	4246	5493	0
46.3	1448	3.31	0.00	200	0	4246	5493	0
46.5	1446	3.31	0.00	200	0	4246	5491	0
46.7	1446	3.31	0.00	200	0	4246	5492	0
46.9	1446	3.31	0.00	200	0	4246	5492	0
47.1	1446	3.31	0.00	200	0	4246	5491	0
47.3	1446	3.31	0.00	200	0	4246	5491	0
47.5	1444	3.31	0.00	200	0	4246	5490	0
47.7	1445	3.32	0.00	200	0	4246	5490	0
47.9	1444	3.31	0.00	200	0	4246	5489	0
48.1	1444	3.31	0.00	200	0	4246	5489	0
48.3	1443	3.32	0.00	200	0	4246	5488	0
48.5	1443	3.32	0.00	200	0	4246	5488	0
48.7	1443	3.32	0.00	201	0	4246	5488	0
48.9	1442	3.32	0.00	201	0	4246	5487	0
49.1	1442	3.32	0.00	201	0	4246	5487	0
49.3	1442	3.32	0.00	200	0	4246	5487	0
49.5	1441	3.32	0.00	201	0	4246	5486	0
49.7	1440	3.32	0.00	201	0	4246	5485	0
49.9	1445	3.32	0.00	201	0	4246	5490	0

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ELAPSED TIME (min)	SURFACE TREATING PRESSURE	CLEAN RATE (bpm)	PROPANT CONC (ppg)	FLUID FRICTION PRESSURE	PERF FRICTION (psi)	HYDRO HEAD (psi)	BOTTOM HOLE PRESSURE	NET FRACTURE PRESSURE
50.2	1444	3.32	0.00	201	0	4246	5489	0
50.3	1445	3.32	0.00	201	0	4246	5490	0
50.5	1444	3.32	0.00	201	0	4246	5489	0
50.7	1444	3.32	0.00	201	0	4246	5489	0
50.9	1444	3.32	0.00	201	0	4246	5489	0
51.1	1444	3.32	0.00	201	0	4246	5489	0
51.3	1445	3.32	0.00	201	0	4246	5490	0
51.5	1472	3.47	0.00	218	0	4246	5500	0
51.7	1513	3.80	0.00	257	0	4246	5502	0
51.9	1637	4.51	0.00	351	0	4246	5531	0
52.1	1947	6.24	0.00	634	1	4246	5558	0
52.3	2133	7.11	0.00	803	1	4246	5575	0
52.5	2140	7.11	0.00	803	1	4246	5582	0
52.7	2139	7.11	0.00	804	1	4246	5580	0
52.9	2138	7.11	0.00	804	1	4246	5580	0
53.1	2140	7.11	0.00	804	1	4246	5581	0
53.4	2137	7.11	0.00	804	1	4246	5578	0
53.5	2137	7.11	0.00	804	1	4246	5579	0
53.7	2120	7.03	0.00	788	1	4246	5577	0
53.9	2080	6.87	0.00	755	1	4246	5570	0
54.1	2080	6.87	0.00	754	1	4246	5571	0
54.3	2081	6.87	0.00	754	1	4246	5571	0
54.5	2080	6.87	0.00	754	1	4246	5571	0
54.7	2080	6.86	0.00	754	1	4246	5571	0
54.9	2081	6.87	0.00	754	1	4246	5572	0
55.1	2080	6.87	0.00	754	1	4246	5571	0
55.3	2081	6.87	0.00	755	1	4246	5571	0
55.5	2080	6.87	0.00	755	1	4246	5570	0
55.7	2079	6.87	0.00	755	1	4246	5569	0
55.9	2078	6.87	0.00	754	1	4246	5569	0
56.1	2079	6.87	0.00	754	1	4246	5569	0
56.3	2079	6.87	0.00	755	1	4246	5569	0
56.5	2079	6.87	0.00	755	1	4246	5569	0
56.7	2079	6.87	0.00	755	1	4246	5569	0
56.9	2079	6.87	0.00	755	1	4246	5569	0
57.1	2079	6.87	0.00	755	1	4246	5570	0
57.3	2080	6.87	0.00	755	1	4246	5570	0
57.5	2079	6.87	0.00	756	1	4246	5569	0
57.7	2079	6.87	0.00	755	1	4246	5569	0
57.9	2079	6.87	0.00	755	1	4246	5569	0
58.1	2079	6.87	0.00	755	1	4246	5569	0
58.3	2081	6.87	0.00	755	1	4246	5571	0
58.5	2080	6.87	0.00	755	1	4246	5570	0
58.7	2080	6.87	0.00	755	1	4246	5570	0
58.9	2080	6.87	0.00	755	1	4246	5570	0
59.1	2080	6.87	0.00	755	1	4246	5570	0
59.3	2080	6.87	0.00	756	1	4246	5570	0
59.5	2080	6.87	0.00	755	1	4246	5571	0
59.7	2080	6.87	0.00	755	1	4246	5570	0
59.9	2080	6.87	0.00	755	1	4246	5570	0

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ELAPSED TIME (min)	SURFACE TREATING PRESSURE	CLEAN RATE (bpm)	PROPANT CONC (ppg)	FLUID FRICTION PRESSURE	PERF FRICTION (psi)	HYDRO HEAD (psi)	BOTTOM HOLE PRESSURE	NET FRACTURE PRESSURE
60.2	2081	6.87	0.00	755	1	4246	5570	0
60.3	2080	6.87	0.00	755	1	4246	5570	0
60.5	2080	6.87	0.00	755	1	4246	5570	0
60.7	2081	6.88	0.00	756	1	4246	5570	0
60.9	2080	6.87	0.00	755	1	4246	5570	0
61.1	2080	6.87	0.00	756	1	4246	5570	0
61.3	2080	6.87	0.00	755	1	4246	5570	0
61.5	2080	6.87	0.00	755	1	4246	5570	0
61.7	2080	6.87	0.00	755	1	4246	5570	0
61.9	2080	6.87	0.00	756	1	4246	5570	0
62.1	2079	6.87	0.00	756	1	4246	5569	0
62.3	2079	6.88	0.00	756	1	4246	5568	0
62.5	2079	6.87	0.00	756	1	4246	5568	0
62.7	2079	6.87	0.00	756	1	4246	5569	0
62.9	2079	6.87	0.00	756	1	4246	5568	0
63.1	2078	6.87	0.00	756	1	4246	5568	0
63.3	2078	6.87	0.00	756	1	4246	5567	0
63.5	2077	6.87	0.00	756	1	4246	5567	0
63.7	2078	6.87	0.00	756	1	4246	5567	0
63.9	2078	6.87	0.00	756	1	4246	5567	0
64.1	2078	6.87	0.00	756	1	4246	5568	0
64.3	2078	6.87	0.00	756	1	4246	5567	0
64.5	2079	6.87	0.00	755	1	4246	5568	0
64.7	2077	6.87	0.00	755	1	4246	5567	0
64.9	2078	6.87	0.00	756	1	4246	5567	0
65.1	2078	6.88	0.00	756	1	4246	5567	0
65.3	2078	6.87	0.00	756	1	4246	5567	0
65.5	2078	6.87	0.00	756	1	4246	5567	0
65.7	2078	6.87	0.00	755	1	4246	5567	0
65.9	2077	6.87	0.00	756	1	4246	5566	0
66.1	2078	6.87	0.00	755	1	4246	5567	0
66.3	2079	6.87	0.00	756	1	4246	5568	0
66.5	2078	6.87	0.00	756	1	4246	5567	0
66.7	2078	6.88	0.00	756	1	4246	5567	0
66.9	2078	6.88	0.00	756	1	4246	5567	0
67.1	2077	6.88	0.00	756	1	4245	5566	0
67.3	2076	6.87	0.00	755	1	4245	5565	0
67.5	2095	6.98	0.00	777	1	4245	5563	0
67.7	2395	8.15	0.00	1030	1	4245	5609	0
67.9	2430	8.29	0.00	1063	1	4245	5611	0
68.1	2442	8.32	0.00	1070	1	4245	5616	0
68.3	2443	8.32	0.00	1070	1	4245	5617	0
68.5	2443	8.32	0.00	1069	1	4245	5618	0
68.7	2445	8.32	0.00	1071	1	4245	5618	0
68.9	2445	8.32	0.00	1070	1	4245	5620	0
69.2	2446	8.32	0.00	1071	1	4245	5620	0
69.4	2446	8.32	0.00	1071	1	4245	5620	0
69.6	2444	8.32	0.00	1069	1	4245	5619	0
69.7	2441	8.31	0.00	1067	1	4245	5618	0
69.9	2444	8.31	0.00	1068	1	4245	5620	0

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70.2	2443	8.31	0.00	1068	1	4245	5619	0
70.4	2442	8.31	0.00	1067	1	4245	5619	0
70.5	2441	8.31	0.00	1068	1	4245	5617	0
70.7	2439	8.31	0.00	1067	1	4245	5616	0
70.9	2442	8.31	0.00	1068	1	4245	5618	0
71.1	2439	8.31	0.00	1067	1	4245	5617	0
71.3	2440	8.31	0.00	1067	1	4245	5617	0
71.5	2439	8.31	0.00	1067	1	4245	5616	0
71.7	2438	8.30	0.00	1065	1	4245	5617	0
71.9	2438	8.31	0.00	1067	1	4245	5615	0
72.1	2437	8.30	0.00	1066	1	4245	5615	0
72.3	2436	8.30	0.00	1066	1	4246	5614	0
72.5	2436	8.31	0.00	1067	1	4246	5614	0
72.7	2436	8.31	0.00	1067	1	4246	5614	0
72.9	2432	8.30	0.00	1065	1	4246	5611	0
73.1	2435	8.31	0.00	1067	1	4246	5612	0
73.3	2432	8.31	0.00	1067	1	4246	5610	0
73.5	2433	8.30	0.00	1066	1	4246	5611	0
73.7	2429	8.29	0.00	1064	1	4245	5609	0
73.9	2431	8.30	0.00	1066	1	4245	5609	0
74.1	2430	8.30	0.00	1066	1	4245	5609	0
74.3	2430	8.31	0.00	1067	1	4245	5608	0
74.5	2429	8.31	0.00	1067	1	4245	5606	0
74.7	2426	8.30	0.00	1065	1	4245	5605	0
74.9	2427	8.31	0.00	1066	1	4246	5605	0
75.1	2424	8.30	0.00	1066	1	4245	5603	0
75.3	2426	8.30	0.00	1066	1	4245	5604	0
75.5	2422	8.30	0.00	1066	1	4245	5601	0
75.7	2424	8.30	0.00	1066	1	4245	5603	0
75.9	2421	8.30	0.00	1065	1	4245	5600	0
76.1	2422	8.30	0.00	1066	1	4245	5600	0
76.3	2419	8.29	0.00	1064	1	4245	5600	0
76.5	2419	8.30	0.00	1065	1	4245	5599	0
76.7	2417	8.30	0.00	1065	1	4245	5596	0
76.9	2416	8.30	0.00	1064	1	4245	5597	0
77.1	2414	8.28	0.00	1061	1	4245	5597	0
77.3	2415	8.29	0.00	1064	1	4245	5595	0
77.5	2414	8.29	0.00	1062	1	4245	5596	0
77.7	2412	8.28	0.00	1061	1	4245	5595	0
77.9	2413	8.29	0.00	1064	1	4245	5593	0
78.1	2411	8.30	0.00	1064	1	4245	5591	0
78.3	2411	8.29	0.00	1064	1	4245	5592	0
78.5	2406	8.29	0.00	1062	1	4245	5588	0
78.7	2409	8.29	0.00	1064	1	4245	5590	0
78.9	2406	8.29	0.00	1064	1	4245	5587	0
79.1	2406	8.29	0.00	1063	1	4245	5588	0
79.3	2406	8.28	0.00	1061	1	4245	5589	0
79.5	2404	8.28	0.00	1061	1	4245	5587	0
79.7	2403	8.29	0.00	1063	1	4245	5584	0
79.9	2404	8.29	0.00	1063	1	4245	5585	0

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ELAPSED TIME (min)	SURFACE TREATING PRESSURE	CLEAN RATE (bpm)	PROPANT CONC (ppg)	FLUID FRICTION PRESSURE	PERF FRICTION (psi)	HYDRO HEAD (psi)	BOTTOM HOLE PRESSURE	NET FRACTURE PRESSURE
80.2	2399	8.28	0.00	1060	1	4245	5584	0
80.4	2398	8.27	0.00	1058	1	4245	5584	0
80.5	2398	8.27	0.00	1059	1	4246	5584	0
80.7	2398	8.27	0.00	1059	1	4246	5584	0
80.9	2397	8.28	0.00	1060	1	4246	5581	0
81.1	2397	8.27	0.00	1059	1	4246	5583	0
81.3	2395	8.27	0.00	1058	1	4246	5582	0
81.5	2395	8.27	0.00	1059	1	4246	5581	0
81.7	2396	8.27	0.00	1059	1	4246	5581	0
81.9	2392	8.27	0.00	1057	1	4246	5580	0
82.1	2394	8.27	0.00	1058	1	4246	5580	0
82.3	2390	8.26	0.00	1056	1	4246	5579	0
82.5	2394	8.27	0.00	1058	1	4246	5580	0
82.7	2391	8.26	0.00	1057	1	4246	5578	0
82.9	2392	8.26	0.00	1056	1	4246	5580	0
83.1	2393	8.27	0.00	1058	1	4246	5579	0
83.3	2394	8.27	0.00	1058	1	4246	5580	0
83.5	1445	0.01	0.00	0	0	4246	5691	0
83.7	1103	0.01	0.00	0	0	4246	5349	0
83.9	1242	0.01	0.00	0	0	4246	5488	0
84.1	1181	0.01	0.00	0	0	4246	5426	0
84.3	1190	0.01	0.00	0	0	4246	5436	0
84.5	1209	0.01	0.00	0	0	4246	5455	0
84.7	1177	0.01	0.00	0	0	4246	5423	0
84.9	1210	0.01	0.00	0	0	4246	5456	0
85.1	1180	0.01	0.00	0	0	4246	5425	0
85.3	1199	0.01	0.00	0	0	4246	5445	0
85.5	1189	0.00	0.00	0	0	4246	5434	0
85.7	1191	0.01	0.00	0	0	4246	5437	0
85.9	1194	0.00	0.00	0	0	4246	5439	0
86.1	1187	0.00	0.00	0	0	4246	5432	0
86.3	1193	0.00	0.00	0	0	4246	5439	0
86.5	1187	0.01	0.00	0	0	4246	5432	0
86.7	1190	0.00	0.00	0	0	4246	5436	0
86.9	1187	0.00	0.00	0	0	4246	5433	0
87.1	1187	0.00	0.00	0	0	4246	5433	0
87.3	1188	0.01	0.00	0	0	4246	5434	0
87.5	1187	0.01	0.00	0	0	4246	5432	0
87.7	1188	0.01	0.00	0	0	4246	5433	0
87.9	1186	0.01	0.00	0	0	4246	5432	0
88.1	1187	0.01	0.00	0	0	4246	5432	0
88.3	1186	0.01	0.00	0	0	4246	5432	0
88.5	1186	0.01	0.00	0	0	4246	5432	0
88.7	1186	0.01	0.00	0	0	4246	5431	0
88.9	1185	0.01	0.00	0	0	4246	5431	0
89.1	1186	0.01	0.00	0	0	4246	5431	0
89.3	1185	0.01	0.00	0	0	4246	5431	0
89.5	1185	0.01	0.00	0	0	4246	5430	0
89.7	1184	0.01	0.00	0	0	4246	5430	0
89.9	1184	0.01	0.00	0	0	4246	5430	0

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ELAPSED TIME (min)	SURFACE TREATING PRESSURE	CLEAN RATE (bpm)	PROPANT CONC (ppg)	FLUID FRICTION PRESSURE	PERF FRICTION (psi)	HYDRO HEAD (psi)	BOTTOM HOLE PRESSURE	NET FRACTURE PRESSURE
90.2	1184	0.01	0.00	0	0	4246	5430	0
90.4	1184	0.01	0.00	0	0	4246	5430	0
90.5	1184	0.01	0.00	0	0	4246	5430	0
90.7	1184	0.01	0.00	0	0	4246	5430	0
90.9	1185	0.01	0.00	0	0	4246	5430	0
91.1	1184	0.01	0.00	0	0	4246	5430	0
91.3	1184	0.01	0.00	0	0	4246	5430	0
91.5	1184	0.01	0.00	0	0	4246	5429	0
91.7	1184	0.01	0.00	0	0	4246	5429	0
91.9	1183	0.01	0.00	0	0	4246	5429	0
92.1	1117	0.01	0.00	0	0	4246	5363	0
92.3	902	0.01	0.00	0	0	4246	5148	0
92.5	700	0.01	0.00	0	0	4246	4946	0
92.7	510	0.01	0.00	0	0	4246	4756	0
92.9	334	0.01	0.00	0	0	4246	4580	0
93.1	100	0.05	0.00	0	0	4246	4346	0
93.3	0	0.75	0.00	0	0	4246	4246	0
93.5	0	0.80	0.00	0	0	4246	4246	0
93.7	0	0.27	0.00	0	0	4246	4246	0
93.9	0	0.17	0.00	0	0	4246	4246	0