

FLOPET

Denne rapport
tilhører



L&U DOK.SENTER

L.NR. 30283260008

KODE Well 31/2-11 nr 23

Returneres etter bruk

HIGH ACCURACY PRESSURE TEMPERATURE MEASUREMENTS

Company : A/S Norske Shell Country : Norway

Field : Troll

Well : 31/2-11

Zone : Upper Jurassic

Date : 26.04.83 - 28.04.8

FLOPETROL JOHNSTON
Schlumberger

FLOPETROL

DISTRICT : EMR/NSD
BASE : NWB
REPORT No. : ELS 83.23

HIGH ACCURACY PRESSURE TEMPERATURE MEASUREMENTS

Company : A/S Norske Shell Country : Norway

Field : Troll

Well : 31/2-1f

Zone : Upper Jurassic

Date : 26.04.83 - 28.04.83

FLOPETROL

Client : Norske ShellField : TrollWell : 31/2-11

Section

INDEX

Base: NWBReport No: ELS 83.23

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- 2 - MEASUREMENT DATA
- 3 - SEQUENCE OF EVENTS
- 4 - WELL COMPLETION DATA
- 5 - LISTING OF ALL DATA RECORDED
- 6 -
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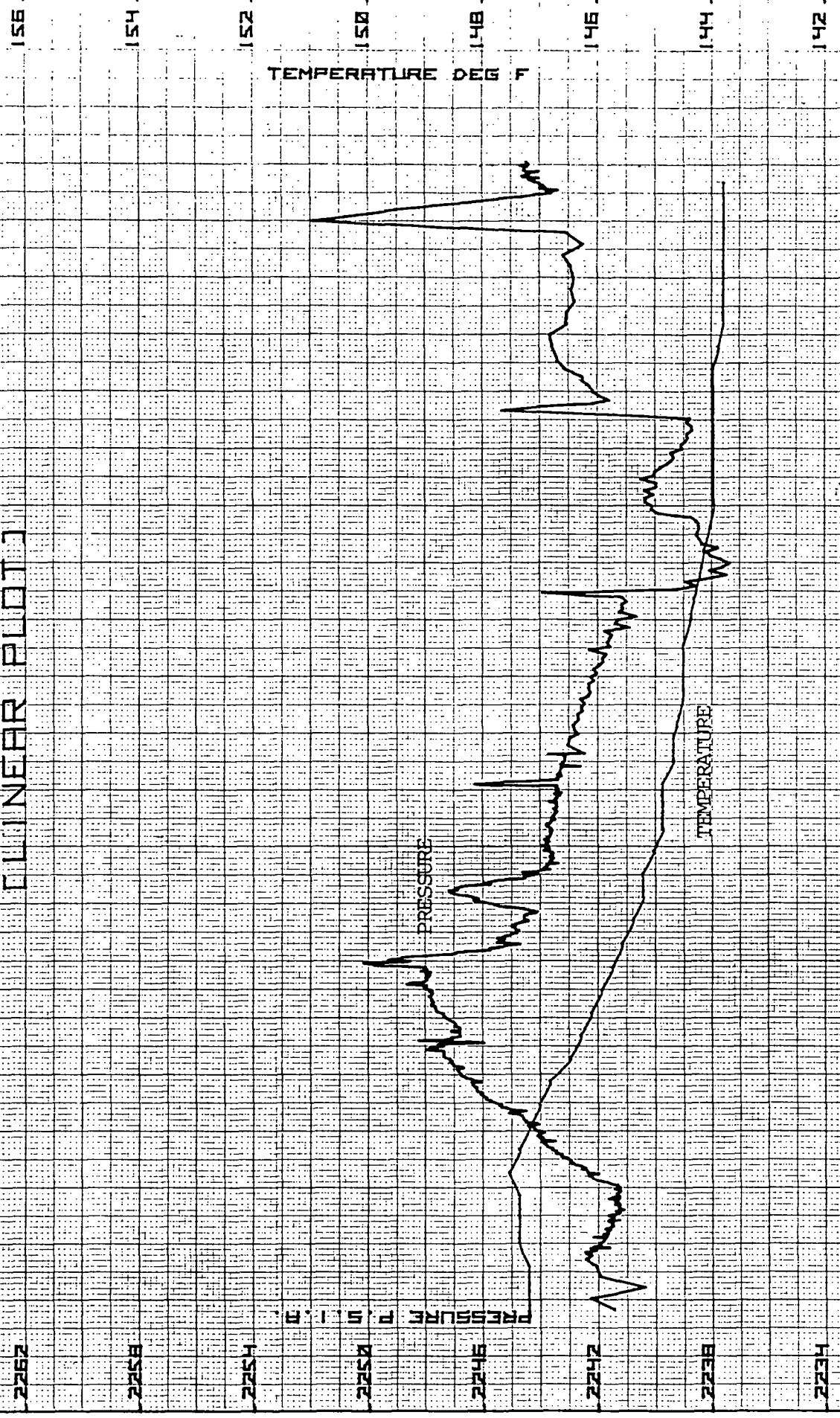
Flopetrol operator:

B. Nilssen

Company representative:

G. Rundgren

FLOPETROL HIGH ACCURACY PRESSURE MEASUREMENT (LINEAR PLOT)



TIME (HOURS) 22

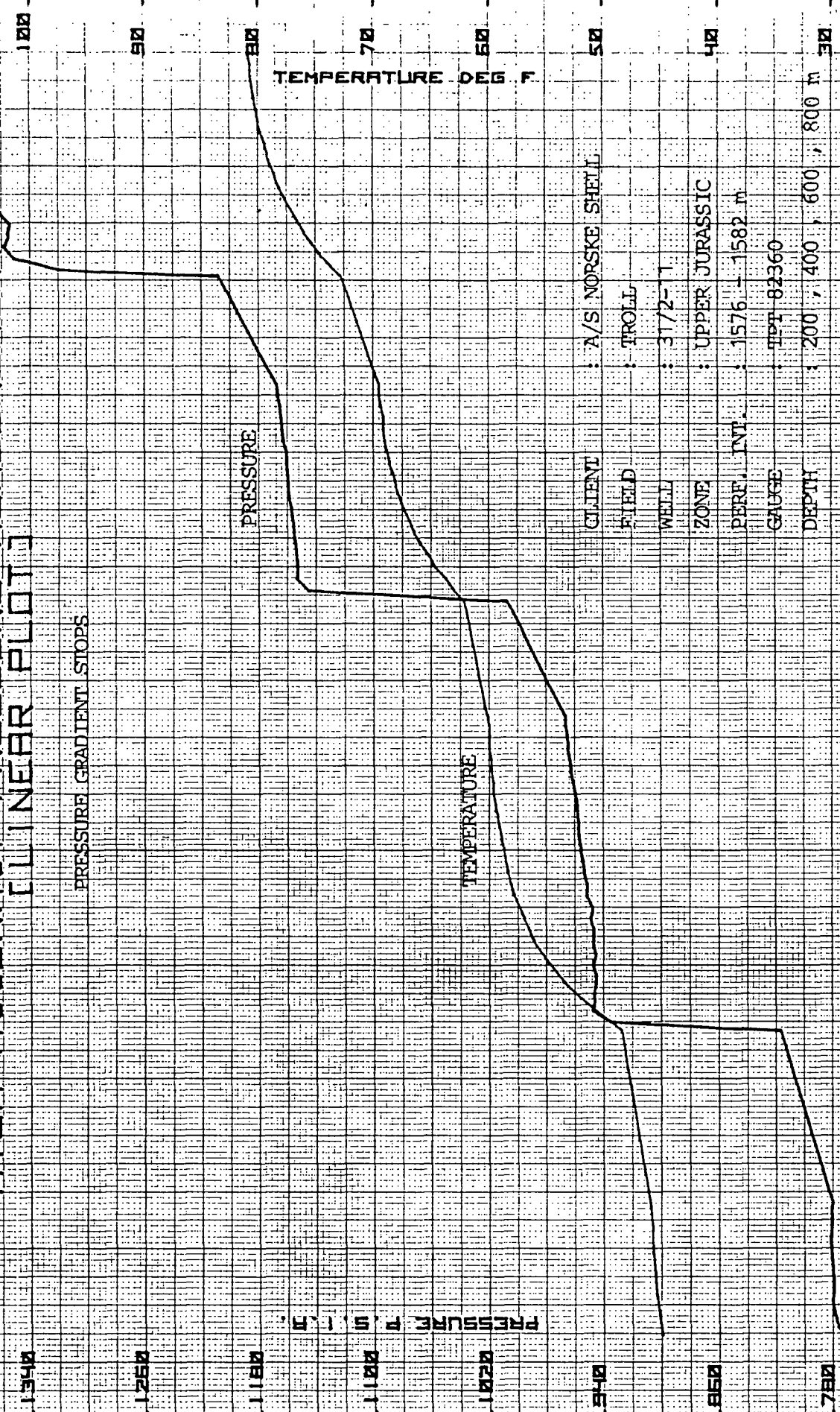
FLORETROL HIGH ACCURACY PRESSURE MEASUREMENT [LINEAR PLOT]



CLIENT : A/S NORSE SHELL
 FIELD : TROLL
 WELL : 3172-11
 ZONE : UPPER JURASSIC
 PERF. INT. : 1576 - 1582 m
 GAUGE : TPT 82360
 DEPTH : 1520 m

TIME (HOURS)
 21 22

FLOPETROL HIGH ACCURACY PRESSURE MEASUREMENT [LINEAR PLOT]



TIME [HOURS]

20

1190

1250

1180

PSIA

TEMPERATURE

TEMPERATURE DEG F

540

850

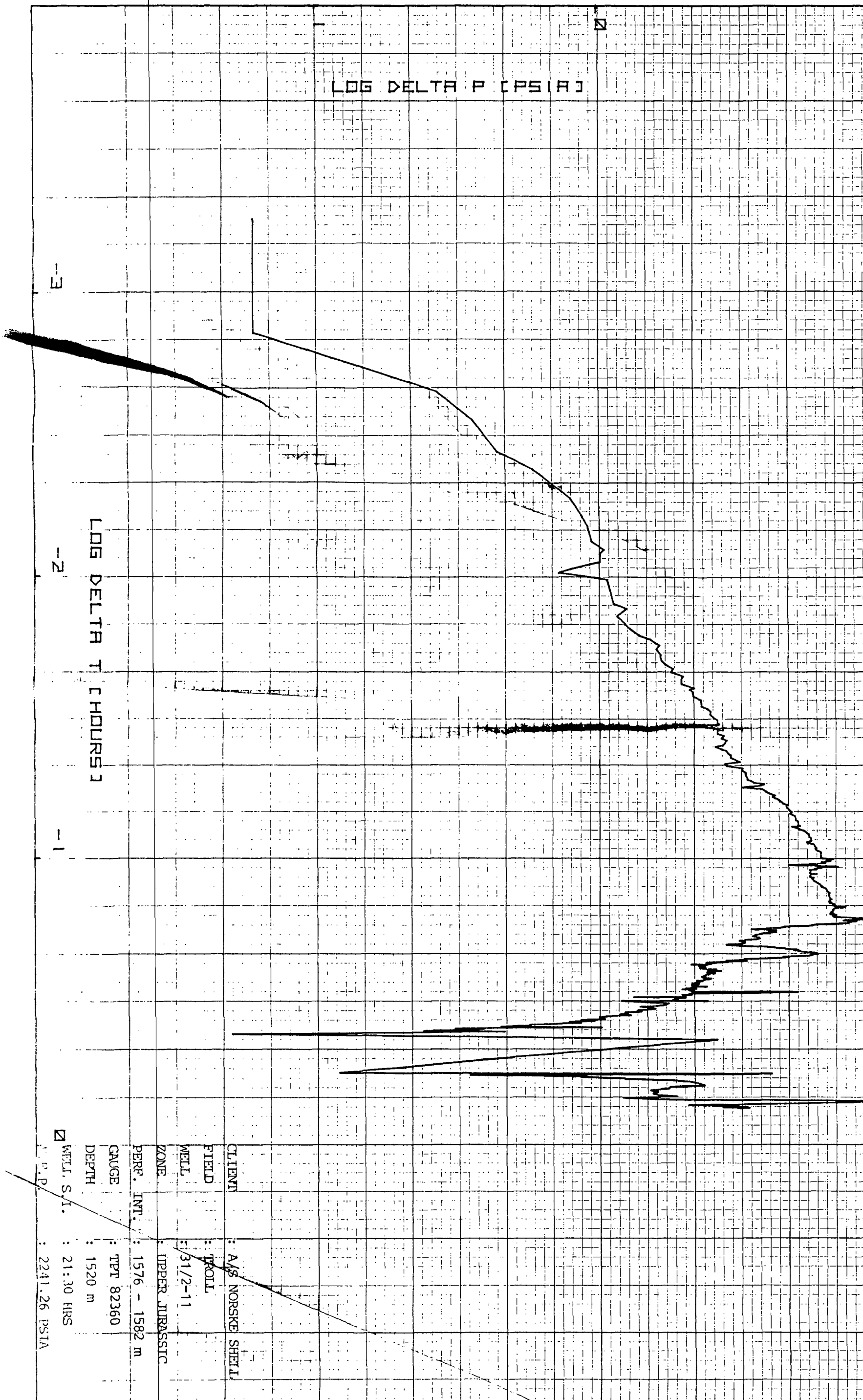
780

CITY : A/S NORSE SHELL
 FIELD : TROLL
 WELL : 372-11
 ZONE : UPPER JURASSIC
 PERM. INT. : 1576 - 1582 m
 GAUGE : TPT-82360
 DEPTH : 200 , 400 , 600 , 800 m

FLOPETERROL
HIGH-PRECISION PRESSURE MEASUREMENT
CLOG-LOG PLOT

LOG DELTA P [PSIA]

LOG DELTA T [HOURS]



WELL, S.I. : 2241.26 PSIA
 CLIENT : A/S NORSE SHELL
 FIELD : FOLL
 WELL : 31/2-11
 ZONE : UPPER JURASSIC
 PERM. INT. : 1576 - 1582 m
 GAUGE : TPT 82360
 DEPTH : 1520 m
 TIME : 21:30 HRS
 DATE : 2241.26 PSIA

FIRST GRADIENT STOP AT 200 m

FLOTTING
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 1
REMARKS

TIME	PRESS. PSIA	TEMP. DEG.F	DELTA (1000)	LOG DELTA	DELTA PSIA	LOG DELTA
19.9.0	775.50					
19.9.30	777.02					
19.10.0	779.07	45.3				
19.10.30	779.39					
19.11.0	779.14					
19.11.30	779.90	45.5				
19.12.0	780.59					
19.12.30	781.03	45.7				
19.13.0	780.08					
19.13.30	780.50	45.7				
19.14.0	780.72					
19.14.30	779.99	45.9				

SECOND GRADIENT STOP AT 400 m

FLOWMETER
PRESSURE & TEMPERATURE CALCULATIONSSECTION 1
PAGE 2

TIME HR.MN.SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P	REMARKS
19.23.0	947.51						
19.23.30	946.24	50.9					
19.24.0	945.73						
19.24.30	945.21	53.1					
19.25.0	946.95						
19.25.30	945.89	54.7					
19.26.0	947.31						
19.26.30	947.03	56.1					
19.27.0	948.88						
19.27.30	947.91	57.0					
19.28.0	951.37						
19.28.30	951.50	57.9					
19.29.0	953.34						
19.29.30	954.29	58.5					
19.30.0	955.96						
19.30.30	956.70	58.8					
19.31.0	957.27	59.0					
19.31.30	957.76	59.2					
19.32.0	958.01	59.4					
19.32.30	959.28	59.5					
19.33.0	960.96	59.7					
19.33.30	962.41	59.7					
19.34.0	963.04	59.9					
19.34.30	964.44	59.9					
19.35.0	964.97	60.1					
19.35.30	966.16	60.1					
19.36.0	966.55	60.1					

THIRD GRADIENT STOP AT 600 m

SECTION 1
PAGE 3

REMARKS

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

TIME HR. MIN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P
19.41.0	1007.59					
19.41.30	1145.63	62.2				
19.42.0	1153.62	63.1				
19.42.30	1153.60	63.9				
19.43.0	1154.47	64.6				
19.43.30	1154.94	65.3				
19.44.0	1156.26	66.0				
19.44.30	1156.70	66.6				
19.45.0	1157.60	66.9				
19.45.30	1159.07	67.5				
19.46.0	1159.95	67.8				
19.46.30	1160.58	68.2				
19.47.0	1161.12	68.4				
19.47.30	1161.62	68.7				
19.48.0	1163.17	68.9				
19.48.30	1164.29	69.1				
19.49.0	1164.84	69.3				
19.49.30	1165.75	69.3				
19.50.0	1167.30	69.4				
19.50.30	1168.12	69.6				
		69.6				

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FOURTH GRADIENT STOP AT 800 m

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 4

REMARKS

LOG DEL.T
DEL.P
PSIA

LOG DEL.T

DEL.T
(HOURS)

TEMP.
DEG.F

PRESS.
PSIA

TIME
HR.MN.SS

6

7

19.55.0	1206.44							
19.55.30	1319.65	72.9						
19.56.0	1351.49	73.8						
19.56.30	1358.64	74.7						
19.57.0	1355.96	75.4						
19.57.30	1354.71	76.1						
19.58.0	1362.08	76.6						
19.58.30	1366.68	77.2						
19.59.0	1368.76	77.7						
19.59.30	1370.02	78.3						
20.0.0	1371.09	78.6						
20.0.30	1371.76	79.0						
20.1.0	1372.85	79.3						
20.1.30	1374.09	79.5						
20.2.0	1375.41	79.9						
20.2.30	1376.46	80.1						
20.3.0	1377.10	80.2						
20.3.30	1378.02	80.4						
20.4.0	1378.68	80.6						
20.4.30	1379.26	80.8						
20.5.0	1380.10	80.8						
		81.0						

FINAL STOP AT 1520 m WELL FLOWING ON A 12/64" CHOKE

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 5
REMARKS

TIME HR. MN. SS	PRESS. PSIA	TEMP. DEG. F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P	LOG T+DEL.T -DEL.T	REMARKS
20.19.0	2129.78							
20.19.30	2132.63	128.1						
20.20.0	2135.33	130.5						
20.20.30	2138.76	132.6						
20.21.0	2142.67	134.2						
20.21.30	2147.13	135.9						
20.22.0	2152.21	137.1						
20.22.30	2157.49	138.2						
20.23.0	2159.68	139.3						
20.23.30	2164.14	140.0						
20.24.0	2169.22	140.9						
20.24.30	2173.49	141.4						
20.25.0	2176.06	142.0						
20.25.30	2183.35	142.5						
20.26.0	2187.12	143.1						
20.26.30	2190.81	143.4						
20.27.0	2194.14	143.8						
20.27.30	2197.29	144.1						
20.28.0	2200.15	144.3						
20.28.30	2202.65							
20.29.0	2204.80	144.9						
20.29.30	2207.44							
20.30.0	2209.60	145.2						
20.30.30	2211.67							
20.31.0	2213.48	145.6						
20.31.30	2215.31	145.8						
20.32.0	2216.93							
20.32.30	2218.30							
20.33.0	2219.71	146.9						
20.33.30	2221.11							
20.34.0	2222.52							
20.34.30	2223.84							
20.35.0	2224.85							
20.35.30	2225.76	146.3						
20.36.0	2226.92							
20.36.30	2227.60	146.5						
20.37.0	2228.69							
20.37.30	2229.67	146.5						
20.38.0	2230.39							
20.38.30	2231.03	146.7						
20.39.0	2231.70							
20.39.30	2232.27	146.7						

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

TIME HR. MIN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P	LOG T+DEL. T DEL. T	REMARKS
20.40. 0	2232.63	146.8						
20.40.30	2232.98							
20.41. 0	2233.33							
20.41.30	2233.81							
20.42. 0	2234.47							
20.42.30	2234.96	146.8						
20.43. 0	2235.22							
20.43.30	2235.40	146.8						
20.44. 0	2235.52							
20.44.30	2235.93	146.8						
20.45. 0	2236.00							
20.45.30	2234.89	146.8						
20.46. 0	2232.07							
20.46.30	2232.82	146.8						
20.47. 0	2236.10							
20.47.30	2236.88	147.0						
20.48. 0	2237.48							
20.48.30	2238.01	147.2						
20.49. 0	2238.70							
20.49.30	2238.24	147.2						
20.50. 0	2238.55							
20.50.30	2239.42	147.4						
20.51. 0	2238.86							
20.51.30	2239.35	147.2						
20.52. 0	2239.67							
20.52.30	2239.91	147.2						
20.53. 0	2239.74							
20.53.30	2240.26	147.2						
20.54. 0	2240.13							
20.54.30	2240.34	147.2						
20.55. 0	2241.65							
20.55.30	2241.71	147.2						
20.56. 0	2239.06							
20.56.30	2240.00	147.2						
20.57. 0	2239.58							
20.57.30	2238.45	147.2						
20.58. 0	2241.30							
20.58.30	2241.11	147.0						
20.59. 0	2241.12							
20.59.30	2241.12	147.0						
21. 0. 0	2241.01							
21. 0.30	2241.07	147.2						

FLOPETROL

PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 7

TIME HR. MIN. SS	PRESS. PSIA	TEMP. DEG. F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P	LOG T+DEL.T - DEL.T	REMARKS
21. 1. 0	2241.00							
21. 1.30	2240.82	147.2						
21. 2. 0	2240.32							
21. 2.30	2240.43	147.2						
21. 3. 0	2240.55							
21. 3.30	2241.20	147.2						
21. 4. 0	2240.81							
21. 4.30	2240.53	147.2						
21. 5. 0	2240.45							
21. 5.30	2240.50	147.2						
21. 6. 0	2240.31							
21. 6.30	2240.52	147.2						
21. 7. 0	2240.37							
21. 7.30	2240.16	147.2						
21. 8. 0	2240.38							
21. 8.30	2240.38	147.2						
21. 9. 0	2240.48							
21. 9.30	2240.44	147.4						
21.10. 0	2240.55							
21.10.30	2240.54	147.4						
21.11. 0	2240.63							
21.11.30	2240.50	147.4						
21.12. 0	2239.65							
21.12.30	2239.35	147.4						
21.13. 0	2239.20							
21.13.30	2238.17	147.4						
21.14. 0	2238.92							
21.14.30	2239.52	147.4						
21.15. 0	2239.35							
21.15.30	2239.82	147.6						
21.16. 0	2240.32							
21.16.30	2240.67	147.6						
21.17. 0	2240.93							
21.17.30	2241.31	147.6						
21.18. 0	2241.56							
21.18.30	2241.67	147.4						
21.19. 0	2241.12	147.4						
21.19.30	2240.55							
21.20. 0	2239.97							
21.20.30	2238.38							
21.21. 0	2238.67							
21.21.30	2231.70	147.2						

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

TIME HR./MIN./SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P	REMARKS
21.22.0	2234.93						
21.22.30	2238.27	147.2					10
21.23.0	2241.92						
21.23.30	2242.63	147.2					
21.24.0	2243.66						
21.24.30	2241.53	147.2					11
21.25.0	2242.24						
21.25.30	2240.46	147.2					
21.26.0	2241.92						
21.26.30	2242.10	147.2					
21.27.0	2242.39						
21.27.30	2241.91						
21.28.0	2241.67	147.4					
21.28.30	2241.30						
21.29.0	2241.11	147.4					12
21.29.2	2241.18						
21.29.4	2241.24						
21.29.6	2241.30						
21.29.8	2241.27						
21.29.10	2241.26						
21.29.12	2241.30						
21.29.14	2241.41						
21.29.16	2241.29						
21.29.18	2241.32						
21.29.20	2241.37						
21.29.22	2241.38						
21.29.24	2241.33						
21.29.26	2241.31						
21.29.28	2241.52						
21.29.30	2241.30						
21.29.32	2241.43						
21.29.34	2241.39						
21.29.36	2241.29						
21.29.38	2241.31	147.4					
21.29.40	2241.34						
21.29.42	2241.35						
21.29.44	2241.32						
21.29.46	2241.26						
21.29.48	2241.23						
21.29.50	2241.22						
21.29.52	2241.27						
21.29.54	2241.38						

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
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REMARKS

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TIME HR.M.SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P
21.29.56	2241.35		0.0000		0.06	-1.2218
21.29.58	2241.26		0.0006	-3.2553	0.06	-1.2218
21.30.0	2241.26		0.0011	-2.9542	0.13	-0.8861
21.30.2	2241.32		0.0017	-2.7782	0.27	-0.5686
21.30.4	2241.32		0.0022	-2.6532	0.36	-0.4437
21.30.6	2241.39		0.0028	-2.5563	0.41	-0.3872
21.30.8	2241.53		0.0033	-2.4771	0.52	-0.2840
21.30.10	2241.62		0.0039	-2.4102	0.64	-0.1938
21.30.12	2241.67		0.0044	-2.3522	0.75	-0.1249
21.30.14	2241.78		0.0050	-2.3010	0.83	-0.0809
21.30.16	2241.90		0.0056	-2.2553	0.88	-0.0555
21.30.18	2242.01		0.0061	-2.2139	0.92	-0.0362
21.30.20	2242.09		0.0067	-2.1761	0.94	-0.0269
21.30.22	2242.14		0.0072	-2.1413	1.00	0.0000
21.30.24	2242.18		0.0078	-2.1091	1.02	0.0086
21.30.26	2242.20		0.0083	-2.0792	1.02	0.0086
21.30.28	2242.26		0.0089	-2.0512	0.83	-0.0809
21.30.30	2242.28		0.0094	-2.0248	0.91	-0.0410
21.30.32	2242.28		0.0100	-2.0000	1.09	0.0374
21.30.34	2242.09		0.0106	-1.9765	1.10	0.0414
21.30.36	2242.17	147.6	0.0111	-1.9542	1.12	0.0492
21.30.38	2242.35		0.0117	-1.9331	1.13	0.0531
21.30.40	2242.36		0.0122	-1.9128	1.21	0.0828
21.30.42	2242.38		0.0128	-1.8935	1.24	0.0934
21.30.44	2242.39		0.0133	-1.8751	1.18	0.0719
21.30.46	2242.47		0.0139	-1.8573	1.23	0.0899
21.30.48	2242.50		0.0144	-1.8403	1.28	0.1072
21.30.50	2242.44		0.0150	-1.8239	1.33	0.1239
21.30.52	2242.49		0.0156	-1.8081	1.40	0.1461
21.30.54	2242.54		0.0161	-1.7929	1.54	0.1875
21.30.56	2242.59		0.0167	-1.7782	1.61	0.2068
21.30.58	2242.66		0.0172	-1.7639	1.64	0.2148
21.31.0	2242.80		0.0178	-1.7501	1.67	0.2227
21.31.2	2242.87		0.0183	-1.7368	1.68	0.2253
21.31.4	2242.89		0.0189	-1.7238	1.71	0.2330
21.31.6	2242.90		0.0194	-1.7112	1.77	0.2480
21.31.8	2242.93		0.0200	-1.6990	1.85	0.2672
21.31.10	2242.94		0.0206	-1.6871	1.82	0.2601
21.31.12	2242.97		0.0211	-1.6755		
21.31.14	2243.03		0.0217	-1.6642		
21.31.16	2243.11					
21.31.18	2243.08					

SHUT IN TIME
21.30.0

FLOWING PRES.
2241.26

13

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

REMARKS

TIME HR.MM.SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P
21.31.20	2243.20		0.0222	-1.6532	1.94	0.2878
21.31.22	2243.25		0.0228	-1.6425	1.99	0.2989
21.31.24	2243.24		0.0233	-1.6320	1.98	0.2967
21.31.26	2243.24		0.0239	-1.6218	1.98	0.2967
21.31.28	2243.38		0.0244	-1.6118	2.12	0.3263
21.31.30	2243.38		0.0250	-1.6021	2.12	0.3263
21.31.32	2243.43		0.0256	-1.5925	2.17	0.3365
21.31.34	2243.44		0.0261	-1.5832	2.18	0.3385
21.31.36	2243.49		0.0267	-1.5740	2.23	0.3483
21.31.38	2243.58	147.4	0.0272	-1.5651	2.32	0.3655
21.31.40	2243.58		0.0278	-1.5563	2.32	0.3655
21.31.42	2243.58		0.0283	-1.5477	2.32	0.3655
21.31.44	2243.64		0.0289	-1.5393	2.38	0.3766
21.31.46	2243.71		0.0294	-1.5310	2.45	0.3892
21.31.48	2243.76		0.0300	-1.5229	2.50	0.3979
21.31.50	2243.75		0.0306	-1.5149	2.49	0.3962
21.31.52	2243.80		0.0311	-1.5071	2.54	0.4048
21.31.54	2243.85		0.0317	-1.4994	2.59	0.4133
21.31.56	2243.90		0.0322	-1.4918	2.64	0.4216
21.31.58	2243.90		0.0328	-1.4844	2.64	0.4216
21.32.00	2243.94		0.0333	-1.4771	2.68	0.4281
21.32.02	2243.51		0.0339	-1.4699	2.25	0.3522
21.32.04	2243.78		0.0344	-1.4629	2.52	0.4014
21.32.06	2243.91		0.0350	-1.4559	2.65	0.4232
21.32.08	2243.90		0.0356	-1.4491	2.64	0.4216
21.32.10	2243.90		0.0361	-1.4424	2.64	0.4216
21.32.12	2244.04		0.0367	-1.4357	2.78	0.4440
21.32.14	2244.01		0.0372	-1.4292	2.75	0.4393
21.32.16	2244.05		0.0378	-1.4228	2.79	0.4456
21.32.18	2244.09		0.0383	-1.4164	2.83	0.4518
21.32.20	2244.07		0.0389	-1.4102	2.81	0.4487
21.32.22	2244.04		0.0394	-1.4040	2.78	0.4440
21.32.24	2243.94		0.0400	-1.3979	2.69	0.4298
21.32.26	2243.91		0.0406	-1.3919	2.65	0.4232
21.32.28	2243.99		0.0411	-1.3860	2.73	0.4362
21.32.30	2244.10		0.0417	-1.3802	2.84	0.4533
21.32.32	2244.13		0.0422	-1.3745	2.87	0.4579
21.32.34	2244.18		0.0428	-1.3688	2.92	0.4654
21.32.36	2244.21		0.0433	-1.3632	2.95	0.4698
21.32.38	2244.21	147.2	0.0439	-1.3576	2.95	0.4698
21.32.40	2244.28		0.0444	-1.3522	3.02	0.4800
21.32.42	2244.36		0.0450	-1.3468	3.10	0.4914

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONSSECTION 1
PAGE 11

TIME HR.MN.SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P	REMARKS
21.32.44	2244.43		0.0456	-1.3415	3.17	0.5011	
21.32.46	2244.20		0.0461	-1.3362	2.94	0.4683	
21.32.48	2244.09		0.0467	-1.3310	2.83	0.4518	
21.32.50	2244.12		0.0472	-1.3259	2.86	0.4564	
21.32.52	2244.37		0.0478	-1.3208	3.11	0.4928	
21.32.54	2244.50		0.0483	-1.3158	3.24	0.5105	
21.32.56	2244.49		0.0489	-1.3108	3.23	0.5092	
21.32.58	2244.54		0.0494	-1.3059	3.28	0.5159	
21.33.0	2244.59		0.0500	-1.3010	3.33	0.5224	
21.33.2	2244.58		0.0506	-1.2962	3.32	0.5211	
21.33.4	2244.59		0.0511	-1.2915	3.33	0.5224	
21.33.6	2244.61		0.0517	-1.2868	3.35	0.5250	
21.33.8	2244.63		0.0522	-1.2821	3.37	0.5276	
21.33.10	2244.63		0.0528	-1.2775	3.37	0.5276	
21.33.12	2244.72		0.0533	-1.2730	3.46	0.5391	
21.33.14	2244.79		0.0539	-1.2685	3.53	0.5478	
21.33.16	2244.92		0.0544	-1.2640	3.66	0.5635	
21.33.18	2245.12		0.0550	-1.2596	3.86	0.5866	
21.33.20	2245.04		0.0556	-1.2553	3.78	0.5775	
21.33.22	2244.69		0.0561	-1.2510	3.43	0.5353	
21.33.24	2244.70		0.0567	-1.2467	3.44	0.5366	
21.33.26	2245.06		0.0572	-1.2424	3.80	0.5798	
21.33.28	2245.12		0.0578	-1.2382	3.86	0.5866	
21.33.30	2245.18		0.0583	-1.2341	3.92	0.5933	
21.33.32	2245.24		0.0589	-1.2300	3.98	0.5999	
21.33.34	2245.33		0.0594	-1.2259	4.07	0.6096	
21.33.36	2245.43		0.0600	-1.2218	4.17	0.6201	
21.33.38	2245.45		0.0606	-1.2178	4.19	0.6222	
21.33.40	2245.40	147.0	0.0611	-1.2139	4.14	0.6170	
21.33.42	2245.49		0.0617	-1.2099	4.23	0.6263	
21.33.44	2245.58		0.0622	-1.2061	4.32	0.6355	
21.33.46	2245.65		0.0628	-1.2022	4.39	0.6425	
21.33.48	2245.72		0.0633	-1.1984	4.46	0.6493	
21.33.50	2245.76		0.0639	-1.1946	4.50	0.6532	
21.33.52	2245.81		0.0644	-1.1908	4.55	0.6580	
21.33.54	2245.92		0.0650	-1.1871	4.66	0.6684	
21.33.56	2245.90		0.0656	-1.1834	4.64	0.6665	
21.33.58	2245.90		0.0661	-1.1797	4.64	0.6665	
21.34.0	2245.93		0.0667	-1.1761	4.67	0.6693	
21.34.2	2245.98		0.0672	-1.1725	4.72	0.6739	
21.34.4	2246.02		0.0678	-1.1689	4.76	0.6776	
21.34.6	2246.05		0.0683	-1.1654	4.79	0.6803	

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

REMARKS

TIME HR.MN.SS	PRESS. PSIA	TEMP. DEG.F	DEL.T (HOURS)	LOG DEL.T	DEL.P PSIA	LOG DEL.P
21.34.8	2246.10		0.0689	-1.1619	4.84	0.6848
21.34.10	2246.06		0.0694	-1.1584	4.80	0.6812
21.34.12	2246.07		0.0700	-1.1549	4.81	0.6821
21.34.14	2246.14		0.0706	-1.1515	4.88	0.6884
21.34.16	2246.22		0.0711	-1.1481	4.96	0.6955
21.34.18	2246.24		0.0717	-1.1447	4.98	0.6972
21.34.20	2246.24		0.0722	-1.1413	4.98	0.6972
21.34.22	2246.24		0.0728	-1.1380	4.98	0.6972
21.34.24	2246.25		0.0733	-1.1347	4.99	0.6981
21.34.26	2246.29		0.0739	-1.1314	5.03	0.7016
21.34.28	2246.33		0.0744	-1.1282	5.07	0.7050
21.34.30	2246.35		0.0750	-1.1249	5.09	0.7067
21.34.32	2246.36		0.0756	-1.1217	5.10	0.7076
21.34.34	2246.35		0.0761	-1.1186	5.09	0.7067
21.34.36	2246.38		0.0767	-1.1154	5.12	0.7093
21.34.38	2246.43		0.0772	-1.1123	5.17	0.7135
21.34.40	2246.12	146.8	0.0778	-1.1091	4.86	0.6866
21.34.42	2246.23		0.0783	-1.1061	4.97	0.6964
21.34.44	2246.34		0.0789	-1.1030	5.08	0.7059
21.34.46	2246.45		0.0794	-1.0999	5.19	0.7152
21.34.48	2246.56		0.0800	-1.0969	5.30	0.7243
21.34.50	2246.63		0.0806	-1.0939	5.37	0.7300
21.34.52	2246.67		0.0811	-1.0909	5.41	0.7332
21.34.54	2246.70		0.0817	-1.0880	5.44	0.7356
21.34.56	2246.75		0.0822	-1.0850	5.49	0.7396
21.34.58	2246.79		0.0828	-1.0821	5.53	0.7427
21.35.0	2246.80		0.0833	-1.0792	5.54	0.7435
21.35.2	2246.82		0.0839	-1.0763	5.56	0.7451
21.35.4	2246.81		0.0844	-1.0734	5.55	0.7443
21.35.6	2246.85		0.0850	-1.0706	5.59	0.7474
21.35.8	2246.89		0.0856	-1.0678	5.63	0.7505
21.35.10	2246.90		0.0861	-1.0649	5.64	0.7513
21.35.12	2246.91		0.0867	-1.0621	5.65	0.7520
21.35.14	2246.92		0.0872	-1.0594	5.66	0.7528
21.35.16	2246.82		0.0878	-1.0566	5.56	0.7451
21.35.18	2246.72		0.0883	-1.0539	5.46	0.7372
21.35.20	2246.74		0.0889	-1.0512	5.48	0.7388
21.35.22	2246.93		0.0894	-1.0484	5.67	0.7536
21.35.24	2247.04		0.0900	-1.0458	5.78	0.7619
21.35.26	2247.06		0.0906	-1.0431	5.80	0.7634
21.35.28	2247.09		0.0911	-1.0404	5.83	0.7657
21.35.30	2247.08		0.0917	-1.0378	5.82	0.7649

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 13

REMARKS

TIME HR. MIN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P	REMARKS
21.35.32	2247.13		0.0922	-1.0352	5.87	0.7686	
21.35.34	2247.12		0.0928	-1.0326	5.87	0.7686	
21.35.36	2247.11		0.0933	-1.0300	5.85	0.7672	
21.35.38	2247.12		0.0939	-1.0274	5.86	0.7679	
21.35.40	2247.16		0.0944	-1.0248	5.90	0.7709	
21.35.42	2247.22	146.5	0.0950	-1.0223	5.96	0.7752	
21.35.44	2247.31		0.0956	-1.0197	6.05	0.7818	
21.35.46	2247.36		0.0961	-1.0172	6.10	0.7853	
21.35.48	2247.38		0.0967	-1.0147	6.12	0.7868	
21.35.50	2247.39		0.0972	-1.0122	6.13	0.7875	
21.35.52	2247.38		0.0978	-1.0098	6.12	0.7868	
21.35.54	2247.38		0.0983	-1.0073	6.12	0.7868	
21.35.56	2247.39		0.0989	-1.0049	6.13	0.7875	
21.35.58	2247.39		0.0994	-1.0024	6.13	0.7875	
21.36.0	2247.39		0.1000	-1.0000	6.13	0.7875	
21.36.2	2247.39		0.1006	-0.9976	6.13	0.7875	
21.36.4	2247.79		0.1011	-0.9952	6.53	0.8149	
21.36.6	2247.88		0.1017	-0.9928	6.62	0.8209	
21.36.8	2247.67		0.1022	-0.9905	6.41	0.8069	
21.36.10	2247.80		0.1028	-0.9881	6.54	0.8156	
21.36.12	2247.71		0.1033	-0.9858	6.45	0.8096	
21.36.14	2247.42		0.1039	-0.9834	6.16	0.7896	
21.36.16	2247.50		0.1044	-0.9811	6.24	0.7952	
21.36.18	2247.57		0.1050	-0.9788	6.31	0.8000	
21.36.20	2247.08		0.1056	-0.9765	5.82	0.7649	
21.36.22	2246.36		0.1061	-0.9742	5.10	0.7076	
21.36.24	2246.36		0.1067	-0.9720	5.10	0.7076	
21.36.26	2247.09		0.1072	-0.9697	5.83	0.7657	
21.36.28	2246.26		0.1078	-0.9675	5.00	0.7451	
21.36.30	2247.44		0.1083	-0.9652	6.18	0.7910	
21.36.32	2247.37		0.1089	-0.9630	6.11	0.7860	
21.36.34	2247.17		0.1094	-0.9608	5.91	0.7716	
21.36.36	2247.11		0.1100	-0.9586	5.85	0.7672	
21.36.38	2247.04		0.1106	-0.9564	5.78	0.7619	
21.36.40	2246.83		0.1111	-0.9542	5.57	0.7459	
21.36.42	2246.85	146.3	0.1117	-0.9521	5.59	0.7474	
21.36.44	2246.84		0.1122	-0.9499	5.58	0.7466	
21.36.46	2246.84		0.1128	-0.9478	5.58	0.7466	
21.36.48	2246.63		0.1133	-0.9456	5.57	0.7459	
21.36.50	2246.83		0.1139	-0.9435	5.57	0.7459	
21.36.52	2247.03		0.1144	-0.9414	5.77	0.7612	
21.36.54	2247.01		0.1150	-0.9393	5.75	0.7597	

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

REMARKS

LOG DEL.P

DEL.P
PSIA

LOG DEL.T

DEL.T
(HOURS)

TEMP.
DEG.F

PRESS.
PSIA

TIME
HR.MN.SS

21.36.56	2246.87	0.1156	-0.9372	5.61	0.7490
21.36.58	2246.84	0.1161	-0.9351	5.58	0.7466
21.37.0	2246.82	0.1167	-0.9331	5.56	0.7451
21.37.2	2246.83	0.1172	-0.9310	5.57	0.7459
21.37.4	2246.89	0.1178	-0.9289	5.63	0.7505
21.37.6	2247.00	0.1183	-0.9269	5.74	0.7589
21.37.8	2246.94	0.1189	-0.9249	5.68	0.7543
21.37.10	2246.95	0.1194	-0.9228	5.69	0.7551
21.37.12	2246.97	0.1200	-0.9208	5.71	0.7506
21.37.14	2246.99	0.1206	-0.9188	5.73	0.7582
21.37.16	2247.01	0.1211	-0.9168	5.75	0.7597
21.37.18	2247.03	0.1217	-0.9148	5.77	0.7612
21.37.20	2247.10	0.1222	-0.9128	5.84	0.7664
21.37.22	2247.15	0.1228	-0.9109	5.89	0.7701
21.37.24	2247.19	0.1233	-0.9089	5.93	0.7731
21.37.26	2247.24	0.1239	-0.9070	5.98	0.7767
21.37.28	2247.29	0.1244	-0.9050	6.03	0.7803
21.37.30	2247.33	0.1250	-0.9031	6.07	0.7832
21.37.32	2247.35	0.1256	-0.9012	6.09	0.7846
21.37.34	2247.38	0.1261	-0.8992	6.12	0.7868
21.37.36	2247.39	0.1267	-0.8973	6.13	0.7875
21.37.38	2247.38	0.1272	-0.8954	6.12	0.7868
21.37.40	2247.43	0.1278	-0.8935	6.17	0.7903
21.37.42	2247.50	0.1283	-0.8917	6.24	0.7952
21.37.44	2247.57	0.1289	-0.8898	6.31	0.8000
21.37.46	2247.62	0.1294	-0.8879	6.36	0.8035
21.37.48	2247.65	0.1300	-0.8861	6.39	0.8055
21.37.50	2247.66	0.1306	-0.8842	6.40	0.8062
21.37.52	2247.68	0.1311	-0.8824	6.42	0.8075
21.37.54	2247.68	0.1317	-0.8805	6.42	0.8075
21.37.56	2247.67	0.1322	-0.8787	6.41	0.8069
21.37.58	2247.72	0.1328	-0.8769	6.46	0.8102
21.38.0	2247.79	0.1333	-0.8751	6.53	0.8149
21.38.2	2247.83	0.1339	-0.8733	6.57	0.8176
21.38.4	2247.78	0.1344	-0.8715	6.52	0.8142
21.38.6	2247.75	0.1350	-0.8697	6.49	0.8122
21.38.8	2247.75	0.1356	-0.8679	6.49	0.8122
21.38.10	2247.76	0.1361	-0.8661	6.50	0.8129
21.38.12	2247.80	0.1367	-0.8643	6.54	0.8156
21.38.14	2247.79	0.1372	-0.8626	6.53	0.8149
21.38.16	2247.79	0.1378	-0.8608	6.53	0.8149
21.38.18	2247.80	0.1383	-0.8591	6.54	0.8156

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FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONSSECCION 1
PAGE 15

TIME HR. MIN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P	REMARKS
21.38.20	2247.83		0.1389	-0.8573	6.57	0.8176	
21.38.22	2247.84		0.1394	-0.8556	6.58	0.8182	
21.38.24	2247.88		0.1400	-0.8539	6.62	0.8209	
21.38.26	2247.89		0.1406	-0.8522	6.63	0.8215	
21.38.28	2247.82		0.1411	-0.8504	6.56	0.8169	
21.38.30	2247.80		0.1417	-0.8487	6.54	0.8156	
21.38.32	2247.78		0.1422	-0.8470	6.52	0.8142	
21.38.34	2247.78		0.1428	-0.8453	6.52	0.8142	
21.38.36	2247.82		0.1433	-0.8437	6.56	0.8169	
21.38.38	2247.89		0.1439	-0.8420	6.63	0.8215	
21.38.40	2247.84		0.1444	-0.8403	6.58	0.8182	
21.38.42	2247.86	145.9	0.1450	-0.8386	6.60	0.8195	
21.38.44	2247.97		0.1456	-0.8370	6.71	0.8267	
21.38.46	2248.07		0.1461	-0.8353	6.81	0.8331	
21.38.48	2248.08		0.1467	-0.8337	6.82	0.8338	
21.38.50	2248.06		0.1472	-0.8320	6.80	0.8325	
21.38.52	2248.01		0.1478	-0.8304	6.76	0.8299	
21.38.54	2248.22		0.1483	-0.8288	6.96	0.8426	
21.38.56	2248.69		0.1489	-0.8271	7.43	0.8710	
21.38.58	2248.61		0.1494	-0.8255	7.35	0.8663	
21.39.00	2248.20		0.1500	-0.8239	6.94	0.8414	
21.39.02	2248.12		0.1506	-0.8223	6.86	0.8363	
21.39.04	2248.07		0.1511	-0.8207	6.81	0.8331	
21.39.06	2248.02		0.1517	-0.8191	6.76	0.8299	
21.39.08	2247.97		0.1522	-0.8175	6.71	0.8267	
21.39.10	2248.00		0.1528	-0.8159	6.74	0.8287	
21.39.12	2248.01		0.1533	-0.8144	6.75	0.8293	
21.39.14	2248.02		0.1539	-0.8128	6.76	0.8299	
21.39.16	2247.97		0.1544	-0.8112	6.71	0.8267	
21.39.18	2247.93		0.1550	-0.8097	6.67	0.8241	
21.39.20	2247.90		0.1556	-0.8081	6.64	0.8222	
21.39.22	2247.87		0.1561	-0.8066	6.61	0.8202	
21.39.24	2247.97		0.1567	-0.8050	6.71	0.8267	
21.39.26	2248.02		0.1572	-0.8035	6.76	0.8299	
21.39.28	2247.95		0.1578	-0.8020	6.69	0.8254	
21.39.30	2247.92		0.1583	-0.8004	6.66	0.8235	
21.39.32	2248.16		0.1589	-0.7989	6.90	0.8388	
21.39.34	2248.11		0.1594	-0.7974	6.85	0.8357	
21.39.36	2248.03		0.1600	-0.7959	6.78	0.8312	
21.39.38	2248.02		0.1606	-0.7944	6.76	0.8299	
21.39.40	2248.09		0.1611	-0.7929	6.83	0.8344	
21.39.42	2248.04	145.8	0.1617	-0.7914	6.78	0.8312	

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
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REMARKS

LOG DEL.P

DEL.P
PSIA

LOG DEL.T

DEL.T
(HOURS)

TEMP.
DEG.F

PRESS.
PSIA

TIME
HR. MIN. SS

21.39.44	2248.72	0.1622	-0.7899	7.46	0.8727
21.39.46	2249.40	0.1628	-0.7884	8.14	0.9106
21.39.48	2249.78	0.1633	-0.7869	8.52	0.9304
21.39.50	2249.87	0.1639	-0.7855	8.61	0.9350
21.39.52	2250.08	0.1644	-0.7840	8.82	0.9455
21.39.54	2249.46	0.1650	-0.7825	8.20	0.9138
21.39.56	2248.68	0.1656	-0.7811	7.42	0.8704
21.39.58	2248.58	0.1661	-0.7796	7.32	0.8645
21.40.0	2249.09	0.1667	-0.7782	7.83	0.8938
21.40.10	2248.64	0.1694	-0.7710	7.36	0.8681
21.40.20	2247.05	0.1722	-0.7639	5.79	0.7627
21.40.30	2245.82	0.1750	-0.7570	4.56	0.6590
21.40.40	2245.18	0.1778	-0.7501	3.92	0.5933
21.40.50	2245.43	0.1806	-0.7434	4.17	0.6201
21.41.0	2245.36	0.1833	-0.7368	4.10	0.6128
21.41.10	2244.92	0.1861	-0.7302	3.66	0.5635
21.41.20	2244.82	0.1889	-0.7238	3.56	0.5514
21.41.30	2244.99	0.1917	-0.7175	3.73	0.5717
21.41.40	2244.57	0.1944	-0.7112	3.31	0.5198
21.41.50	2244.56	0.1972	-0.7050	3.30	0.5185
21.42.0	2244.50	0.2000	-0.6990	3.24	0.5105
21.42.10	2244.27	0.2028	-0.6930	3.01	0.4786
21.42.20	2245.21	0.2056	-0.6871	3.95	0.5966
21.42.30	2245.81	0.2083	-0.6812	4.55	0.6580
21.42.40	2246.18	0.2111	-0.6755	4.92	0.6920
21.42.50	2246.59	0.2139	-0.6698	5.33	0.7267
21.43.0	2247.13	0.2167	-0.6642	5.87	0.7686
21.43.10	2246.94	0.2194	-0.6587	5.68	0.7543
21.43.20	2245.79	0.2222	-0.6532	4.53	0.6561
21.43.30	2245.60	0.2250	-0.6478	4.34	0.6375
21.43.40	2244.55	0.2278	-0.6425	3.29	0.5172
21.43.50	2244.48	0.2306	-0.6372	3.22	0.5079
21.44.0	2243.88	0.2333	-0.6320	2.62	0.4183
21.44.10	2243.76	0.2361	-0.6269	2.50	0.3979
21.44.20	2243.63	0.2389	-0.6218	2.37	0.3747
21.44.30	2243.61	0.2417	-0.6168	2.35	0.3711
21.44.40	2243.57	0.2444	-0.6118	2.31	0.3636
21.44.50	2243.77	0.2472	-0.6069	2.52	0.4014
21.45.0	2243.96	0.2500	-0.6021	2.70	0.4314
21.45.30	2243.64	0.2583	-0.5878	2.38	0.3766
21.46.0	2243.74	0.2667	-0.5740	2.48	0.3945
21.46.30	2243.42	0.2750	-0.5607	2.16	0.3345

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FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

REMARKS

TIME HR. MN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P	REMARKS
21.47.0	2243.44	144.9	0.2833	-0.5477	2.18	0.3385	
21.47.30	2243.42		0.2917	-0.5351	2.16	0.3345	
21.48.0	2243.40	144.9	0.3000	-0.5229	2.14	0.3304	21
21.48.30	2243.26		0.3083	-0.5110	2.00	0.3010	
21.49.0	2243.15	144.7	0.3167	-0.4994	1.89	0.2765	
21.49.30	2243.02		0.3250	-0.4881	1.76	0.2455	
21.50.0	2242.67	144.7	0.3333	-0.4771	1.41	0.1492	
21.50.30	2242.74		0.3417	-0.4664	1.49	0.1732	
21.51.0	2242.51		0.3500	-0.4559	1.25	0.0969	
21.51.30	2242.56		0.3583	-0.4457	1.30	0.1139	
21.52.0	2242.29	144.5	0.3667	-0.4357	1.03	0.0128	22
21.52.30	2242.22		0.3750	-0.4260	0.96	-0.0177	
21.53.0	2241.97		0.3833	-0.4164	0.71	-0.1487	
21.53.30	2241.71		0.3917	-0.4071	0.45	-0.3468	
21.54.0	2241.65	144.5	0.4000	-0.3979	0.39	-0.4089	
21.54.30	2241.72		0.4083	-0.3890	0.46	-0.3372	
21.55.0	2241.31		0.4167	-0.3802	0.05	-1.3010	
21.55.30	2241.10		0.4250	-0.3716	0.16	-0.7959	
21.56.0	2241.13	144.3	0.4333	-0.3632	0.13	-0.8861	
21.56.30	2238.56		0.4417	-0.3549	2.70	0.4314	
21.57.0	2237.48		0.4500	-0.3468	3.78	0.5775	
21.57.30	2237.36		0.4583	-0.3388	3.90	0.5911	
21.58.0	2238.17		0.4667	-0.3310	3.09	0.4900	
21.58.30	2238.40	144.1	0.4750	-0.3233	2.86	0.4564	
21.59.0	2238.46		0.4833	-0.3158	2.80	0.4472	
21.59.30	2238.71		0.4917	-0.3083	2.55	0.4065	
22.0.0	2240.11		0.5000	-0.3010	1.15	0.0607	
22.0.30	2240.07	144.0	0.5083	-0.2939	1.19	0.0755	
22.1.0	2239.93		0.5167	-0.2868	1.33	0.1239	
22.1.30	2240.00		0.5250	-0.2798	1.26	0.1004	
22.2.0	2239.42		0.5333	-0.2730	1.84	0.2648	
22.2.30	2239.06	144.0	0.5417	-0.2663	2.20	0.3424	
22.3.0	2238.86		0.5500	-0.2596	2.40	0.3802	
22.3.30	2238.70		0.5583	-0.2531	2.56	0.4082	
22.4.0	2241.38		0.5667	-0.2467	0.12	-0.9208	
22.4.30	2242.17	144.0	0.5750	-0.2403	0.91	-0.0410	
22.5.0	2242.12		0.5833	-0.2341	0.66	-0.0655	
22.5.30	2242.49		0.5917	-0.2279	1.23	0.0899	
22.6.0	2243.09		0.6000	-0.2218	1.83	0.2625	
22.6.30	2243.39	144.0	0.6083	-0.2159	2.13	0.3284	
22.7.0	2243.54		0.6167	-0.2099	2.28	0.3579	
22.7.30	2243.62		0.6250	-0.2041	2.36	0.3729	

FLOPETROL
PRESSURE & TEMPERATURE CALCULATIONS

SECTION 1
PAGE 18

TIME HR. MN. SS	PRESS. PSIA	TEMP. DEG. F	DEL. T (HOURS)	LOG DEL. T	DEL. P PSIA	LOG DEL. P	REMARKS
22. 8. 0	2243.06		0.6333	-0.1984	1.80	0.2553	
22. 8. 30	2243.03	143.8	0.6417	-0.1927	1.77	0.2480	
22. 9. 0	2242.79		0.6500	-0.1871	1.53	0.1847	
22. 9. 30	2242.88		0.6583	-0.1816	1.62	0.2095	
22.10. 0	2242.82		0.6667	-0.1761	1.56	0.1931	
22.10.30	2242.89	143.8	0.6750	-0.1707	1.63	0.2122	
22.11. 0	2243.15		0.6833	-0.1654	1.89	0.2765	
22.11.30	2242.49		0.6917	-0.1601	1.23	0.0899	
22.12. 0	2243.03		0.7000	-0.1549	1.77	0.2480	
22.12.30	2251.91		0.7083	-0.1498	10.65	1.0273	
22.13. 0	2249.12	143.8	0.7167	-0.1447	7.86	0.8954	
22.13.30	2245.51		0.7250	-0.1397	4.25	0.6284	
22.14. 0	2243.79		0.7333	-0.1347	2.53	0.4031	
22.14.30	2244.60	143.8	0.7417	-0.1298	3.34	0.5237	
22.15. 0	2244.45		0.7500	-0.1249	3.19	0.5038	

FLOPETROL

Client: Norske ShellSection : 3Base : NWBField : TrollPage :
Report N°: ELS 83.23Well : 31/2-11

- SEQUENCE OF EVENTS -

DATE	TIME	OPERATION
26.04.83	15:10	Start rig up for Els.
	17:30	End of rig up. Prepare for pressure testing.
	18:05	Pressure test lubricator to 3000 psi. Small leak.
		Clean one quick union and retest - OK.
	18:50	Start RIH.
	19:05	Stop at 200m for gradient stop
	19:15	RIH
	19:22	Stop at 400m for gradient stop.
	19:36	RIH
	19:41	Stop at 600m for gradient stop.
	19:51	RIH
	19:55	Stop at 800m for gradient stop.
	20:05	RIH
	20:18	Stop at 1520m for final stop. Well flowing on a 12/64" choke.
	21:30	Shut in well for build up period.
	22:30	Start POOH.
	22:32	Wire broken at flow tubes. Only 200 LBS on weigh indicator, engine pulling easy.
	22:35	Closed swab valve and cut cable still hanging from flowtubes. Rig up slickline wireline with wireline grab.
27.04.83	02:03	RIH
	02:39	LATCH ON TO WIRE AT 47 m
	02:48	WIRE BROKEN AT ROPE SOCKET
	02:50	RIG DOWN TO MAKE NEW W/L STRING
	04:29	RIH WITH PULLING TOOL
	04:34	LATCH ON TO FISHING STRING

N° DOP 107


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*****  
* LISTING OF ALL DATA *  
* ON TAPE *  
*****  
TEMPERATURE IN DEG F  
PRESSURE IN PSI A  
TIME IN HH.MM.SS
```

19.0842Temp 45.0
 19.1030 779.39
 19.1218Temp 45.7
 19.1400 780.72
 19.2230 934.50
 19.2407Temp 53.1
 19.2600 947.31
 19.2730 947.91
 19.2904Temp 58.5
 19.3035Temp 59.0

19.0900 775.96
 19.1119Temp 45.5
 19.1300 780.88
 19.1430 779.95
 19.2309Temp 50.9
 19.2500 946.95
 19.2630 947.03
 19.2804Temp 57.9
 19.3000 955.96
 19.3105Temp 59.2

19.1005 779.98
 19.1130 779.90
 19.1317Temp 45.7
 19.2206 816.29
 19.2330 946.24
 19.2506Temp 54.7
 19.2700 948.88
 19.2830 951.50
 19.3004Temp 58.8
 19.3130 957.76

19.1021Temp 45.3
 19.1200 780.59
 19.1330 780.50
 19.2211Temp 48.4
 19.2400 945.73
 19.2530 945.69
 19.2704Temp 57.0
 19.2900 953.34
 19.3030 956.70
 19.3135Temp 59.4

FILE

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19.3200 958.01
 19.3304Temp 59.7
 19.3430 964.44
 19.3535Temp 60.1
 19.4130 1145.63
 19.4234Temp 64.8
 19.4400 1156.26
 19.4504Temp 67.5
 19.4630 1160.58
 19.4735Temp 68.9

19.3230 959.28
 19.3335Temp 59.9
 19.3500 964.97
 19.3604Temp 60.3
 19.4200 1153.62
 19.4304Temp 65.3
 19.4430 1156.70
 19.4534Temp 67.8
 19.4700 1161.12
 19.4804Temp 69.1

19.3235Temp 59.7
 19.3400 963.04
 19.3505Temp 60.1
 19.4100 1007.59
 19.4204Temp 63.9
 19.4330 1154.94
 19.4434Temp 66.9
 19.4600 1159.95
 19.4704Temp 68.7
 19.4830 1164.29

19.3300 960.96
 19.3405Temp 59.9
 19.3530 966.16
 19.4103Temp 62.2
 19.4230 1153.60
 19.4334Temp 66.0
 19.4500 1157.60
 19.4605Temp 68.2
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 19.4834Temp 69.3

FILE

6

19.4900 1164.84
 19.5004Temp 69.6
 19.5530 1319.65
 19.5643Temp 75.4
 19.5800 1362.08
 19.5908Temp 78.3
 20.0030 1371.76
 20.0134Temp 79.9
 20.0300 1377.10
 20.0404Temp 80.8

19.4930 1165.75
 19.5034Temp 69.6
 19.5600 1351.49
 19.5712Temp 76.1
 19.5830 1366.68
 19.5937Temp 78.6
 20.0100 1372.85
 20.0204Temp 80.1
 20.0330 1378.02
 20.0434Temp 80.8

19.4934Temp 69.4
 19.5513 1208.29
 19.5614Temp 74.7
 19.5730 1354.71
 19.5839Temp 77.7
 20.0000 1371.09
 20.0104Temp 79.5
 20.0230 1376.46
 20.0334Temp 80.6
 20.0500 1380.10

19.5000 1167.30
 19.5516Temp 72.9
 19.5630 1356.04
 19.5741Temp 76.6
 19.5900 1368.76
 20.0006Temp 79.0
 20.0130 1374.09
 20.0234Temp 80.2
 20.0400 1378.08
 20.0504Temp 81.0

FILE

7

20.1814 2058.45
 20.1913Temp 128.1
 20.2030 2138.76
 20.2137Temp 137.1
 20.2300 2159.68
 20.2403Temp 141.4
 20.2530 2183.35
 20.2633Temp 143.8
 20.2800 2200.15
 20.2934Temp 145.2

20.1830 2105.85
 20.1942Temp 130.5
 20.2100 2142.67
 20.2205Temp 138.2
 20.2330 2164.14
 20.2432Temp 142.0
 20.2600 2187.12
 20.2702Temp 144.1
 20.2834Temp 144.9
 20.3031 2211.74

20.1845Temp 125.4
 20.2000 2135.33
 20.2108Temp 135.9
 20.2230 2157.49
 20.2333Temp 140.9
 20.2500 2176.06
 20.2602Temp 143.4
 20.2730 2197.29
 20.2900 2204.80
 20.3034Temp 145.6

20.1900 2129.78
 20.2010Temp 132.0
 20.2130 2147.13
 20.2233Temp 139.3
 20.2400 2169.22
 20.2502Temp 142.5
 20.2630 2190.81
 20.2732Temp 144.3
 20.2930 2207.44
 20.3100 2213.48

FILE

8

20.3135 2215.62
 20.3425 2223.69
 20.3600 2226.92
 20.3731 2229.70
 20.3925Temp 146.7
 20.4200 2234.47
 20.4331 2235.41
 20.4506Temp 146.8
 20.4700 2236.10
 20.4831 2238.03

20.3200 2216.93
 20.3456 2224.60
 20.3623Temp 146.5
 20.3800 2230.39
 20.3931 2232.29
 20.4203Temp 146.8
 20.4400 2235.52
 20.4532 2234.81
 20.4707Temp 147.0
 20.4900 2244.70

20.3230 2218.30
 20.3500 2224.85
 20.3631 2227.83
 20.3825Temp 146.7
 20.4104Temp 146.8
 20.4231 2234.98
 20.4405Temp 146.8
 20.4600 2232.07
 20.4730 2236.88
 20.4906Temp 147.2

20.3233Temp 145.9
 20.3523Temp 146.3
 20.3700 2228.69
 20.3830 2231.03
 20.4106 2233.40
 20.4300 2235.22
 20.4430 2235.93
 20.4606Temp 146.8
 20.4800 2237.48
 20.4931 2241.68

20.5000	2236.55	20.5077Temp 147.4	20.5030	2239.42	20.5100	2238.86	20.5106Temp 147.2	
20.5131	2239.37	20.5200	2239.67	20.5209Temp 147.2	20.5231	2239.92	20.5300	2239.74
20.5309Temp 147.2	20.5330	2240.26	20.5400	2240.13	20.5409Temp 147.2	20.5431	2240.35	
20.5500	2241.65	20.5509Temp 147.2	20.5531	2241.71	20.5600	2239.06	20.5610Temp 147.2	
20.5630	2240.00	20.5701	2239.57	20.5710Temp 147.2	20.5732	2238.37	20.5800	2241.30
20.5810Temp 147.0	20.5831	2241.10	20.5900	2241.12	20.5909Temp 147.0	20.5930	2241.12	
21.0000	2241.01	21.0010Temp 147.2	21.0031	2241.07	21.0100	2241.00	21.0111Temp 147.2	
21.0131	2240.81	21.0200	2240.32	21.0211Temp 147.2	21.0230	2240.43	21.0300	2240.55
21.0312Temp 147.2	21.0331	2241.22	21.0400	2240.81	21.0412Temp 147.2	21.0431	2240.52	
21.0500	2240.45	21.0513Temp 147.2	21.0530	2240.50	21.0600	2240.31	21.0612Temp 147.2	

FILE 10

21.0631	2240.53	21.0700	2240.37	21.0712Temp 147.2	21.0731	2240.15	21.0800	2240.36
21.0813Temp 147.2	21.0830	2240.38	21.0900	2240.48	21.0912Temp 147.4	21.0931	2240.44	
21.1000	2240.55	21.1013Temp 147.4	21.1031	2240.54	21.1100	2240.63	21.1112Temp 147.4	
21.1130	2240.50	21.1200	2239.65	21.1212Temp 147.4	21.1231	2239.34	21.1301	2239.19
21.1313Temp 147.4	21.1331	2238.13	21.1400	2238.92	21.1413Temp 147.4	21.1431	2239.54	
21.1500	2239.35	21.1513Temp 147.6	21.1531	2239.64	21.1600	2240.32	21.1613Temp 147.6	
21.1633	2240.70	21.1700	2240.93	21.1713Temp 147.6	21.1730	2241.31	21.1800	2241.50
21.1812Temp 147.4	21.1831	2241.67	21.2015Temp 147.4	21.2015Temp 147.4	21.2017	2239.65	21.2048	2238.62
21.2100	2238.67	21.2116Temp 147.2	21.2131	2231.47	21.2200	2234.93	21.2216Temp 147.2	
21.2231	2238.38	21.2300	2241.92	21.2317Temp 147.2	21.2330	2242.63	21.2400	2243.66

FILE 11

21.2418Temp 147.2	21.2431	2241.46	21.2500	2242.24	21.2518Temp 147.2	21.2531	2240.40		
21.2600	2241.92	21.2627	2242.07	21.2629Temp 147.2	21.2631	2242.11	21.2634	2242.22	
21.2648	2242.43	21.2658	2242.24	21.2700	2242.39	21.2702	2242.33	21.2705	2242.44
21.2708	2242.14	21.2710	2242.07	21.2713	2242.05	21.2715	2242.25	21.2718	2241.63
21.2720	2242.12	21.2724	2241.91	21.2727	2241.91	21.2729	2241.91	21.2730	2241.91
21.2734Temp 147.4	21.2736	2241.79	21.2738	2241.81	21.2741	2241.81	21.2744	2241.72	
21.2746	2242.13	21.2749	2241.70	21.2751	2241.71	21.2754	2241.60	21.2756	2241.65
21.2759	2241.68	21.2800	2241.67	21.2803	2241.65	21.2805	2241.57	21.2808	2241.72
21.2811	2241.60	21.2813	2241.54	21.2816	2241.47	21.2818	2241.51	21.2821	2241.52
21.2823	2241.48	21.2826	2241.49	21.2829	2241.64	21.2830	2241.30	21.2832	2241.60

FILE 12

21.2839Temp 147.4	21.2841	2241.45	21.2844	2241.63	21.2847	2241.52	21.2849	2241.30		
21.2852	2241.23	21.2854	2241.21	21.2857	2241.33	21.2859	2241.23	21.2900	2241.11	
21.2903	2241.21	21.2906	2241.30	21.2908	2241.27	21.2911	2241.25	21.2914	2241.41	
21.2916	2241.29	21.2919	2241.33	21.2921	2241.41	21.2924	2241.33	21.2926	2241.31	
21.2929	2241.63	21.2930	2241.30	21.2933	2241.50	21.2935	2241.28	21.2936	2241.31	
21.2939Temp 147.4	21.2941	2241.36	21.2944	2241.32	21.2947	2241.23	21.2950	2241.22	21.2952	2241.32
21.2952	2241.27	21.2955	2241.43	21.2957	2241.26	21.3000	2241.26	21.3002	2241.32	
21.3005	2241.32	21.3008	2241.53	21.3010	2241.62	21.3013	2241.70	21.3015	2241.85	
21.3019	2242.06	21.3022	2242.14	21.3024	2242.18	21.3027	2242.21	21.3029	2242.31	
21.3030	2242.28	21.3032	2242.28	21.3035	2241.99	21.3037	2242.34	21.3040Temp 147.6	2242.31	

FILE 13

21.3045	2242.40	21.3047	2242.53	21.3050	2242.44	21.3053	2242.51	21.3055	2242.56
21.3058	2242.66	21.3100	2242.80	21.3103	2242.91	21.3105	2242.86	21.3108	2242.93
21.3111	2242.94	21.3113	2242.99	21.3116	2243.11	21.3118	2243.08	21.3121	2243.26
21.3123	2243.24	21.3126	2243.24	21.3129	2243.45	21.3130	2243.38	21.3132	2243.43
21.3135	2243.44	21.3138	2243.58	21.3141Temp 147.4	2243.56	21.3143	2243.56	21.3145	2243.69
21.3148	2243.76	21.3150	2243.75	21.3153	2243.82	21.3156	2243.90	21.3158	2243.90
21.3200	2243.94	21.3202	2243.51	21.3205	2243.92	21.3207	2243.90	21.3210	2243.90
21.3212	2244.04	21.3215	2243.99	21.3217	2244.10	21.3220	2244.07	21.3223	2244.02
21.3225	2243.87	21.3228	2243.99	21.3230	2244.10	21.3233	2244.15	21.3235	2244.21
21.3236	2244.21	21.3242Temp 147.2	2244.43	21.3244	2244.43	21.3247	2244.08	21.3250	2244.14

21.3253	2244.50	2244.49	21.3259	2244.57	21.3300	2244.59	21.3302	2244.58
21.3305	2244.60	2244.63	21.3310	2244.63	21.3313	2244.76	21.3315	2244.82
21.3318	2245.12	2245.04	21.3323	2244.52	21.3326	2245.06	21.3328	2245.12
21.3330	2245.18	2245.24	21.3335	2245.37	21.3337	2245.48	21.3340	2245.40
21.3342Temp 147.0		2245.58	21.3346	2245.65	21.3349	2245.75	21.3351	2245.76
21.3354	2245.92	2245.90	21.3359	2245.90	21.3401	2245.96	21.3403	2246.00
21.3405	2246.03	2246.10	21.3411	2246.04	21.3413	2246.10	21.3416	2246.22
21.3418	2246.24	2246.24	21.3425	2246.25	21.3427	2246.32	21.3430	2246.35
21.3432	2246.36	2246.35	21.3438	2246.43	21.3440	2246.12	21.3443Temp 146.8	
21.3445	2246.39	2246.61	21.3452	2246.67	21.3454	2246.70	21.3457	2246.76

FILE 15

21.3500	2246.80	2246.82	21.3507	2246.81	21.3507	2246.88	21.3510	2246.90
21.3512	2246.91	2246.93	21.3515	2246.71	21.3520	2246.74	21.3523	2247.02
21.3525	2247.05	2247.09	21.3528	2247.08	21.3533	2247.15	21.3535	2247.10
21.3538	2247.12	2247.18	21.3541	2247.18	21.3545	2247.35	21.3547	2247.37
21.3550	2247.39	2247.38	21.3555	2247.38	21.3557	2247.39	21.3600	2247.39
21.3602	2247.39	2247.99	21.3608	2247.67	21.3611	2247.86	21.3614	2247.42
21.3618	2247.57	2247.08	21.3623	2246.00	21.3626	2247.09	21.3626	2248.26
21.3630	2247.44	2247.37	21.3635	2247.07	21.3637	2247.14	21.3640	2248.83
21.3642	2246.85	2246.83	21.3645	2246.84	21.3648	2246.83	21.3650	2246.83
21.3653	2247.13	2246.89	21.3658	2246.84	21.3700	2246.82	21.3703	2246.83

FILE 16

21.3706	2247.00	2246.94	21.3711	2246.96	21.3713	2246.98	21.3716	2247.01
21.3718	2247.03	2247.13	21.3723	2247.17	21.3726	2247.24	21.3729	2247.31
21.3730	2247.33	2247.35	21.3735	2247.40	21.3738	2247.38	21.3740	2247.43
21.3743Temp 146.1		2247.60	21.3748	2247.65	21.3750	2247.66	21.3753	2247.69
21.3756	2247.67	2247.72	21.3800	2247.79	21.3802	2247.83	21.3805	2247.75
21.3807	2247.75	2247.76	21.3812	2247.80	21.3815	2247.78	21.3817	2247.79
21.3820	2247.83	2247.84	21.3825	2247.92	21.3828	2247.82	21.3830	2247.80
21.3833	2247.77	2247.78	21.3838	2247.89	21.3841	2247.81	21.3844Temp 145.9	
21.3846	2248.07	2248.08	21.3851	2248.05	21.3853	2247.98	21.3856	2248.69
21.3859	2248.57	2248.20	21.3902	2248.12	21.3905	2248.04	21.3908	2247.97

FILE 17

21.3911	2248.01	2248.02	21.3917	2247.94	21.3919	2247.92	21.3922	2247.67
21.3924	2247.97	2248.04	21.3929	2247.86	21.3930	2247.92	21.3932	2248.16
21.3935	2248.09	2247.98	21.3940	2248.09	21.3942	2248.04	21.3945Temp 145.8	
21.3947	2249.74	2249.87	21.3953	2250.19	21.3955	2248.73	21.3958	2248.56
21.4001	2249.35	2249.07	21.4005	2248.92	21.4008	2248.88	21.4011	2248.52
21.4013	2248.02	2247.63	21.4018	2247.20	21.4021	2246.98	21.4023	2246.95
21.4026	2246.30	2245.79	21.4030	2245.82	21.4032	2245.76	21.4035	2245.50
21.4038	2245.24	2245.18	21.4040	2244.75	21.4046Temp 145.6		21.4048	2245.50
21.4050	2245.43	2245.32	21.4056	2245.26	21.4058	2245.51	21.4100	2245.36
21.4102	2245.29	2245.08	21.4107	2245.04	21.4110	2244.92	21.4112	2244.84

FILE 18

21.4116	2244.86	2244.77	21.4121	2244.87	21.4124	2244.94	21.4127	2244.93
21.4129	2244.97	2244.99	21.4134	2244.90	21.4137	2244.74	21.4139	2244.64
21.4142	2244.42	2244.41	21.4146Temp 145.4		21.4148	2244.55	21.4151	2244.57
21.4153	2244.56	2244.57	21.4159	2244.45	21.4200	2244.50	21.4202	2244.45
21.4205	2244.15	2244.10	21.4210	2244.27	21.4213	2244.42	21.4215	2244.56
21.4218	2244.91	2245.21	21.4223	2245.45	21.4226	2245.63	21.4228	2245.70
21.4230	2245.81	2245.94	21.4235	2246.27	21.4237	2246.36	21.4240	2246.18
21.4242	2246.19	2246.41	21.4248Temp 145.2		21.4250	2246.59	21.4253	2246.89
21.4255	2247.04	2247.15	21.4300	2247.13	21.4303	2247.22	21.4305	2246.95
21.4309	2246.97	2246.88	21.4314	2246.81	21.4317	2246.30	21.4320	2245.75

21.4323	2245.97	21.4326	2245.81	21.4330	2245.60	21.4332	2245.25	21.4335	2244.56
21.4338	2244.56	21.4340	2244.55	21.4344	2244.27	21.4347	2244.10	21.4349	Temp 145.2
21.4351	2244.60	21.4353	2244.15	21.4356	2243.93	21.4358	2243.67	21.4400	2243.88
21.4402	2243.87	21.4405	2243.80	21.4407	2243.74	21.4411	2243.77	21.4414	2243.40
21.4416	2243.67	21.4419	2243.66	21.4421	2243.60	21.4425	2243.63	21.4428	2243.54
21.4430	2243.61	21.4433	2243.65	21.4435	2243.56	21.4438	2243.61	21.4441	2243.55
21.4443	2243.56	21.4446	2243.71	21.4448	2243.86	21.4450	Temp 145.0	21.4452	2243.69
21.4455	2243.80	21.4457	2243.71	21.4500	2243.96	21.4502	2243.76	21.4505	2243.74
21.4508	2243.79	21.4510	2243.68	21.4513	2243.76	21.4515	2243.81	21.4518	2243.84
21.4520	2243.69	21.4523	2243.67	21.4526	2243.72	21.4528	2243.65	21.4530	2243.64

FILE 20

21.4535	2243.61	21.4537	2243.61	21.4540	2243.65	21.4542	2243.57	21.4545	2243.59
21.4547	2243.60	21.4551	Temp 144.9	21.4553	2243.70	21.4555	2243.77	21.4558	2243.69
21.4600	2243.74	21.4603	2243.65	21.4605	2243.62	21.4608	2243.61	21.4611	2243.49
21.4613	2243.48	21.4616	2243.59	21.4618	2243.53	21.4621	2243.55	21.4623	2243.53
21.4626	2243.47	21.4629	2243.46	21.4630	2243.42	21.4632	2243.40	21.4635	2243.45
21.4638	2243.50	21.4640	2243.53	21.4643	2243.42	21.4645	2243.39	21.4648	2243.43
21.4650	2243.43	21.4652	Temp 144.9	21.4654	2243.40	21.4657	2243.50	21.4659	2243.68
21.4700	2243.44	21.4702	2243.49	21.4705	2243.47	21.4707	2243.45	21.4710	2243.38
21.4712	2243.39	21.4715	2243.31	21.4717	2243.35	21.4720	2243.48	21.4723	2243.25
21.4725	2243.40	21.4728	2243.42	21.4730	2243.42	21.4733	2243.36	21.4735	2243.38

FILE 21

21.4738	2243.44	21.4741	2243.40	21.4743	2246.06	21.4746	2246.29	21.4748	2245.93
21.4751	2245.35	21.4753	Temp 144.9	21.4755	2243.96	21.4757	2243.37	21.4800	2243.40
21.4803	2243.36	21.4805	2243.38	21.4808	2243.25	21.4810	2243.39	21.4813	2243.30
21.4815	2243.31	21.4818	2243.29	21.4820	2243.30	21.4824	2243.27	21.4827	2243.28
21.4829	2243.25	21.4831	2243.26	21.4833	2242.60	21.4836	2243.19	21.4838	2243.29
21.4841	2243.23	21.4845	2243.14	21.4847	2243.14	21.4850	2243.13	21.4853	Temp 144.7
21.4855	2243.14	21.4858	2243.10	21.4900	2243.15	21.4903	2243.14	21.4905	2243.69
21.4908	2242.48	21.4929	2243.03	21.4930	2243.02	21.4940	2243.00	21.4950	2242.95
21.4953	Temp 144.7	21.5000	2242.67	21.5010	2242.81	21.5020	2242.85	21.5039	2242.65
21.5050	2242.68	21.5100	2242.51	21.5110	2242.53	21.5120	2242.46	21.5130	2242.56

FILE 22

21.5140	2242.33	21.5150	2242.27	21.5154	Temp 144.5	21.5200	2242.29	21.5211	2242.31
21.5221	2242.13	21.5230	2242.22	21.5240	2242.05	21.5250	2242.12	21.5300	2241.97
21.5310	2241.83	21.5320	2241.83	21.5330	2241.71	21.5341	2242.28	21.5351	2241.57
21.5355	Temp 144.5	21.5400	2241.65	21.5410	2241.60	21.5421	2241.50	21.5430	2241.72
21.5440	2240.91	21.5450	2241.38	21.5500	2241.31	21.5511	2240.67	21.5521	2241.22
21.5530	2241.10	21.5540	2241.14	21.5550	2240.99	21.5557	Temp 144.3	21.5600	2241.13
21.5610	2243.88	21.5620	2239.35	21.5630	2238.56	21.5641	2238.90	21.5651	2238.05
21.5700	2237.48	21.5710	2237.62	21.5720	2237.62	21.5730	2237.36	21.5740	2237.64
21.5750	2238.03	21.5800	2238.17	21.5803	Temp 144.1	21.5811	2237.79	21.5821	2236.33
21.5830	2238.40	21.5840	2238.50	21.5850	2238.50	21.5900	2238.46	21.5910	2238.47

FILE 23

21.5920	2238.52	21.5930	2238.71	21.5941	2239.88	21.5951	2240.10	22.0000	2240.11
22.0005	Temp 144.0	22.0010	2240.33	22.0020	2240.35	22.0030	2240.07	22.0040	2240.33
22.0050	2239.96	22.0100	2239.93	22.0111	2240.48	22.0121	Temp 144.0	22.0131	2240.00
22.0141	2239.80	22.0152	2239.55	22.0200	2239.42	22.0207	Temp 144.0	22.0210	2239.33
22.0220	2239.42	22.0230	2239.06	22.0241	2239.08	22.0251	2238.92	22.0300	2238.86
22.0310	2238.87	22.0320	2238.70	22.0330	2238.70	22.0340	2238.87	22.0350	2238.76
22.0400	2241.38	22.0408	Temp 144.0	22.0411	2245.33	22.0421	2244.07	22.0430	2242.17
22.0440	2241.61	22.0450	2241.90	22.0500	2242.12	22.0510	2242.18	22.0520	2242.30
22.0530	2242.49	22.0541	2242.50	22.0551	2242.81	22.0600	2243.09	22.0610	Temp 144.0
22.0612	2243.23	22.0622	2243.37	22.0630	2243.39	22.0700	2243.54	22.0730	Temp 144.0

22.0800	2243.06	22.0812Temp	143.8	22.0830	2243.03	22.0900	2242.79	22.0930	2242.68
22.1000	2242.82	22.1013Temp	143.8	22.1030	2242.89	22.1100	2243.15	22.1130	2242.49
22.1200	2243.03	22.1214Temp	143.8	22.1230	2251.91	22.1300	2249.12	22.1330	2245.51
22.1343	2243.73	22.1345	2243.58	22.1348	2243.73	22.1350	2243.63	22.1353	2243.35
22.1356	2243.86	22.1358	2243.98	22.1400	2243.79	22.1402	2243.82	22.1406	2243.89
22.1408	2244.00	22.1411	2244.01	22.1414	2244.15	22.1416Temp	143.8	22.1418	2244.25
22.1420	2244.32	22.1423	2244.39	22.1425	2244.01	22.1428	2244.50	22.1430	2244.60
22.1433	2244.43	22.1435	2244.36	22.1438	2244.44	22.1441	2244.04	22.1443	2244.45
22.1446	2244.53	22.1448	2244.52	22.1451	2244.51	22.1453	2244.52	22.1456	2244.42
22.1459	2244.66	22.1500	2244.45	22.1502	2244.37	22.1505	2244.44	22.1508	2244.45