Rig: Crane / Prod # 4

Schlumberger

Company: **Esso Australia Pty Ltd.**

Well: **A−10a**
Field: **Cobia**
Rig: **Crane / Prod # 4** Country: **Australia**

RST − C
Static & Flowing
Sigma − C/O Survey

Rig: Crane / Prod # 4
Field: Cobia
Location: Gippsland
Well: A−10a
Company: Esso Australia Pty Ltd.

LOCATION

Gippsland		Elev.: K.B.	32.4 m
Basin		G.L.	−79 m
Bass Strait		D.F.	32.3 m
Permanent Datum:	MSL.	Elev.:	0 m
Log Measured From:	DF.	32.3 m	above Perm. Datum
Drilling Measured From:	DF.		

State:	Max. Well Deviation	Longitude	Latitude
Victoria	62 deg	148*18'28.5"E	038*27'03.1"S

Logging Date	6−May−2007
Run Number	One
Depth Driller	4113 m
Schlumberger Depth	4113 m
Bottom Log Interval	4050 m
Top Log Interval	3900 m
Casing Fluid Type	Production Fluids
Salinity	
Density	
Fluid Level	135 m
BIT/CASING/TUBING STRING	
Bit Size	9.875 in
From	
To	
Casing/Tubing Size	7.625 in
Weight	29.7 lbm/ft
Grade	L−80
From	18.8 m
To	4171 m
Maximum Recorded Temperatures	227 degF
Logger On Bottom / Time	6−May−2007 / 5:45
Unit Number / Location	889 / Ausl / Prod 4
Recorded By	G Wright , S Gilbert
Witnessed By	G Rimmer , R Morris

PVT DATA	
Oil Density	
Water Salinity	
Gas Gravity	
Bo	
Bw	
1/Bg	
Bubble Point Pressure	
Bubble Point Temperature	
Solution GOR	
Maximum Deviation	62 deg
CEMENTING DATA	
Primary/Squeeze	Primary
Casing String No	
Lead Cement Type	
Volume	
Density	
Water Loss	
Additives	
Tail Cement Type	
Volume	
Density	
Water Loss	
Additives	
Expected Cement Top	

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Fluid Type	
Salinity	
Density	
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	
From	
To	
Casing/Tubing Size	
Weight	
Grade	
From	
To	
Maximum Recorded Temperatures	
Logger On Bottom / Time	
Unit Number / Location	
Recorded By	
Witnessed By	

DEPTH SUMMARY LISTING

Date Created: 5−MAY−2007 7:45:09

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−BE	Type:	PSDS/OSDS	Type:	2−32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	24425
Calibration Date:	05−Jul−2006	Calibration Date:	26−Apr−2007	Length:	6590.08 M
Calibrator Serial Number:	9	Calibrator Serial Number:	1174		
Calibration Cable Type:	2−32ZT	Calibration Gain:	0.91	Conveyance Method:	Wireline
Wheel Correction 1:	−2	Calibration Offset:	217.00	Rig Type:	Rigless
Wheel Correction 2:	−4				

Depth Control Parameters

Log Sequence: Subsequent Log In the Well

Reference Log Name: Solar Composite Correlation
Reference Log Run Number: 1
Reference Log Date:

Depth Control Remarks

1. IDW used as primary depth control.
2. Z chart as secondary back−up.
3.
4.
5.
6.

OTHER SERVICES1
OS1: None
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1
Log Correlated to Solar composite log provided by client .
Objective: Conduct RST−C Sigma and C/O surveys both Static and Flowing
over the interval 4050m MDKB to 3900m MDKB.
Maximum Well Deviation : 62 deg @2371m MDKB.
Shut−in CO passes over 3934m to 3956m MDKB.
Flowing CO passes over 3955m to 3981m MDKB.
SBHP: 3272 degf,SBHT: 226 degf.
FBHP: 3229 psia,FBHT: 227 degf.

HUD: was not tagged.

Crew : J Annear , C Shields (Days)

A Hall , G Martin (Nights)

RUN 1

SERVICE ORDER #: AUSL073228217
PROGRAM VERSION: 14C0−302
FLUID LEVEL: 135 m

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

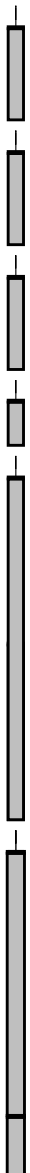
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A 3576
PSC_16MHZ 806

DOWNHOLE EQUIPMENT



SWBS−B 761 — 11.93

SWBS−B 762 — 11.24

SWBS−B 763 — 10.55

SWHS−A 726 — 9.87

Detail MT
TelStatus
CTEM — 9.54

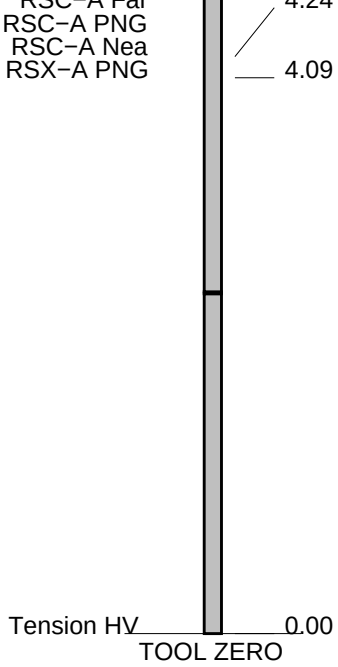
PSPT−A/B 827 — 9.54
PSC−A 806
PSPT−B 827
PSTC 806
PBMS−B 827
CQG_F_Mano 827
RTD_Thermometer 827
GR 827
CCL 827
PBMS 827

GR — 8.41

Well_Temp — 7.48
CQG Manom — 7.37
CCL — 7.25
PBMS PSTC — 7.02

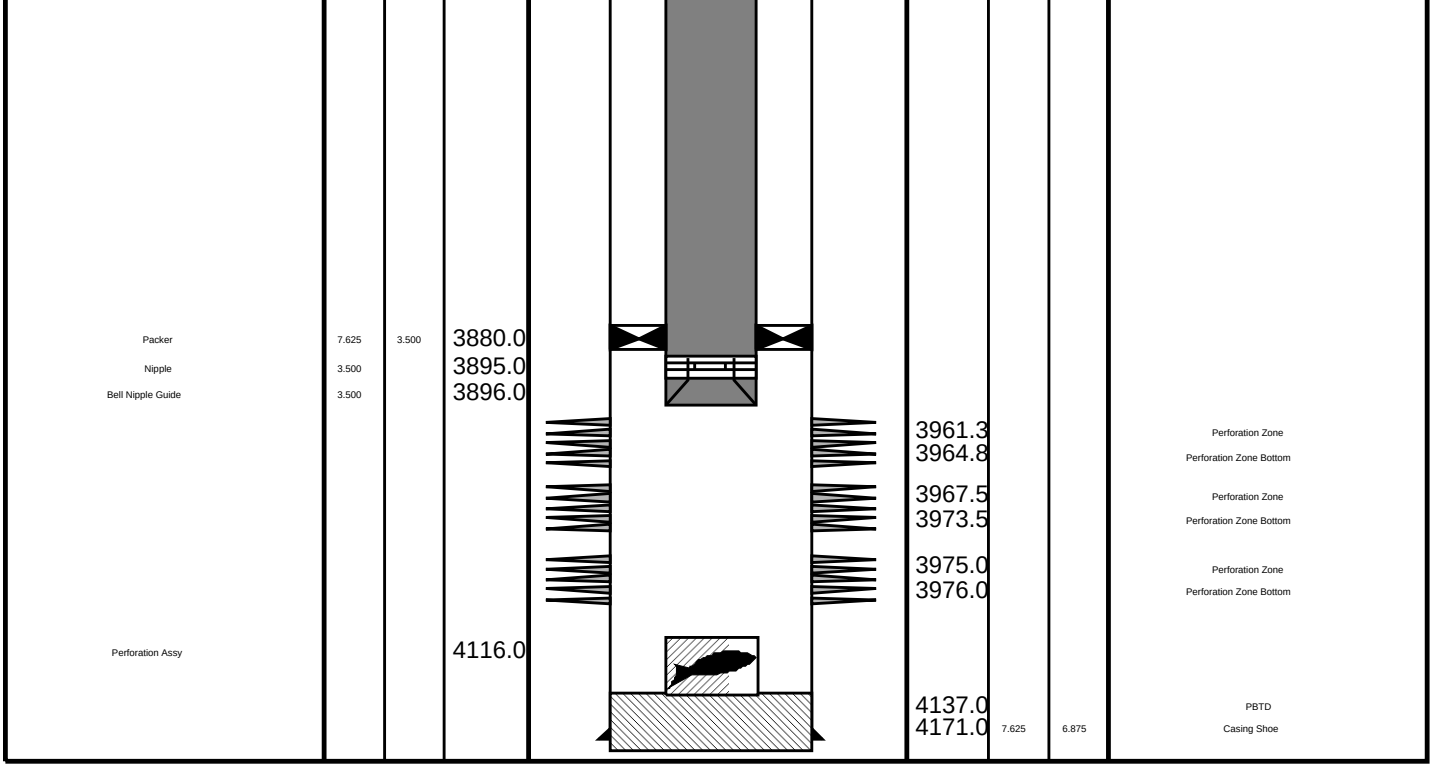
RST−C 45 — 7.02
RSCH−A 45
RSC−C 45
RSS−A 45
RSXH−A 63
RSX−C 59

RSC−A Far — 4.24



MAXIMUM STRING DIAMETER 1.72 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	OD (in)	ID (in)	MD (m)	Well Schematic	MD (m)	OD (in)	ID (in)	Casing String
Tubing	3.500		18.1		18.8	10.750	10.050	Casing String
Tubing Hanger	7.625	3.500	18.1		18.8	7.625	6.875	Casing String
					18.8	10.750	7.625	Liner Hanger
Shutin Valve	3.500		454.0					
					617.0	10.750	10.050	Casing Shoe
Gas Lift Mandrel	3.500		1131.0					
Gas Lift Mandrel	3.500		1876.0					
Gas Lift Mandrel	3.500		2503.0					
Nipple	3.500		2519.0					



Schlumberger

Job Events Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)		File
Station Log	6−May−2007 4:17	000:19	1008.7 −	2.9	RST_PSP_012LTP
Log Pass (down)	6−May−2007 4:45	000:60	0.6 −	4063.3	RST_PSP_014LDP
Log Pass (up)	6−May−2007 5:45	000:21	4067.4 −	3879.2	RST_PSP_015LUP
Log Pass (down)	6−May−2007 6:08	000:07	3890.2 −	4046.7	RST_PSP_016LDP
Log Pass (up)	6−May−2007 6:25	000:39	4063.3 −	3883.5	RST_PSP_018LUP
Log Pass (up)	6−May−2007 7:08	000:59	3963.6 −	3926.6	RST_PSP_019LUP
Log Pass (up)	6−May−2007 8:10	001:07	3964.1 −	3924.5	RST_PSP_020LUP
Log Pass (up)	6−May−2007 9:18	001:12	3964.4 −	3923.5	RST_PSP_021LUP
Station Log	6−May−2007 10:42	004:38	4050.0 −	42.4	RST_PSP_024LTP
Log Pass (up)	6−May−2007 15:25	000:03	4060.5 −	4044.4	RST_PSP_025LUP
Log Pass (up)	6−May−2007 15:29	000:38	4055.1 −	3890.0	RST_PSP_026LUP
Log Pass (up)	6−May−2007 16:16	000:35	4055.7 −	3890.5	RST_PSP_028LUP
Log Pass (up)	6−May−2007 16:58	001:22	3986.2 −	3944.4	RST_PSP_030LUP
Log Pass (up)	6−May−2007 18:20	001:08	3988.2 −	3953.7	RST_PSP_031LUP
Log Pass (up)	6−May−2007 19:34	001:22	3990.1 −	3942.0	RST_PSP_032LUP
Log Pass (up)	6−May−2007 20:58	001:26	3988.6 −	3944.0	RST_PSP_033LUP
Log Pass (up)	6−May−2007 22:33	000:57	3949.3 −	−5.3	RST_PSP_034LUP

Schlumberger

Flowing Carbon Oxygen Passes 3981m to 3955m MDKB

MAXIS Field Log

RQL Passes Summary

RQL Software Version Number 2.00

Pass # 1 (RQL_CS_044_1):
Pass # 2 (RQL_CS_052_1):
Pass # 3 (RQL_CS_053_1):
Pass # 4 (RQL_CS_054_1):

RQL Quality Flags Raised (Data)

Near Data Error: No good C,O left to stack.
Near Data Error: In computing C/O ratio.
Near Data Caution: Discarded invalid C,O.
Far Data Error: No good C,O left to stack.
Far Data Error: In computing C/O ratio.
Far Data Caution: Discarded invalid C,O.

Company: Esso Australia Pty Ltd. **Well: A−10a**

Output DLIS Files

DEFAULT	RST_PSP_056PUP	FN:55	PRODUCER	07−May−2007 06:45	3986.2 M	3955.2 M

OP System Version: 14C0−302

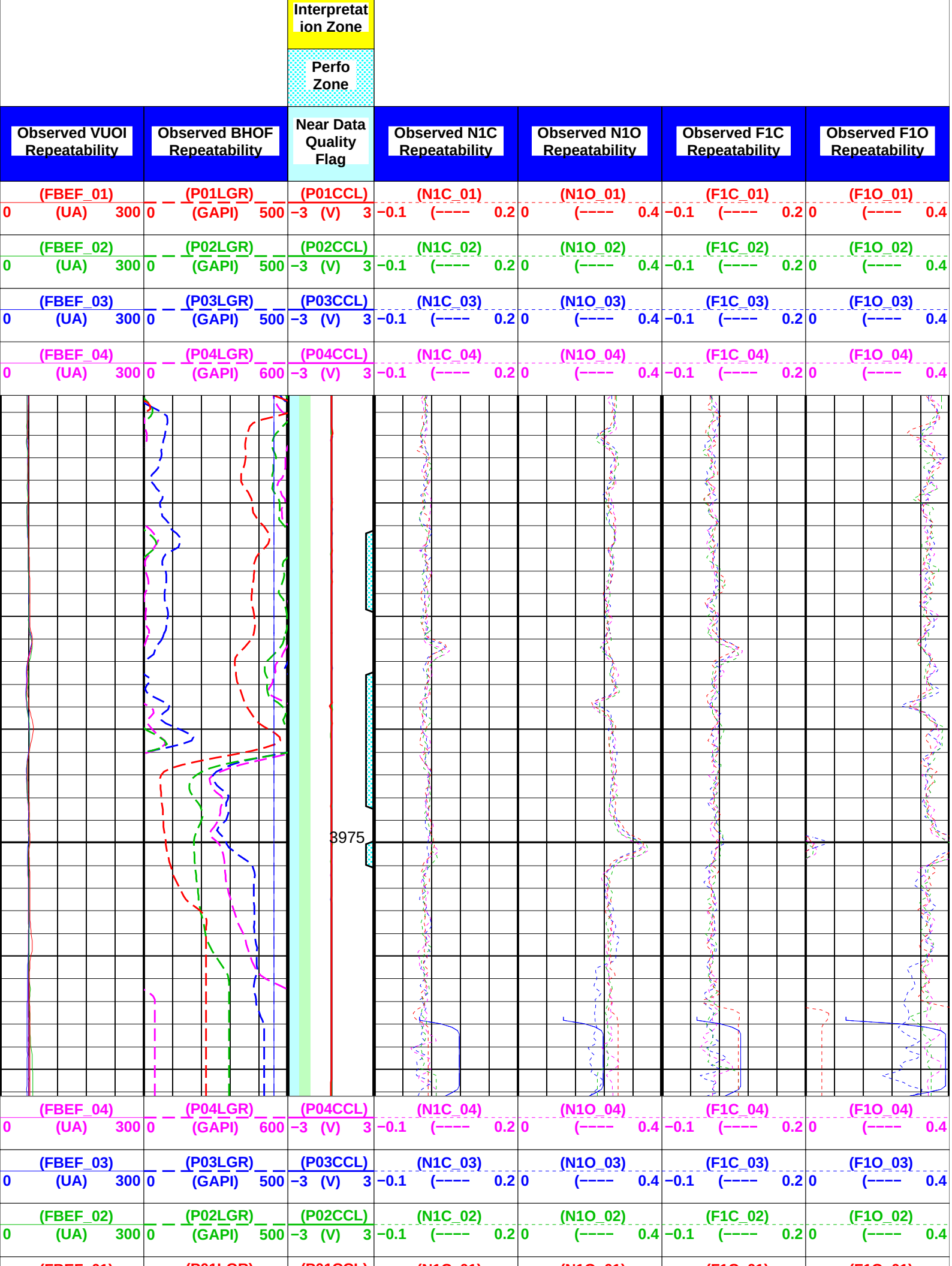
MCM

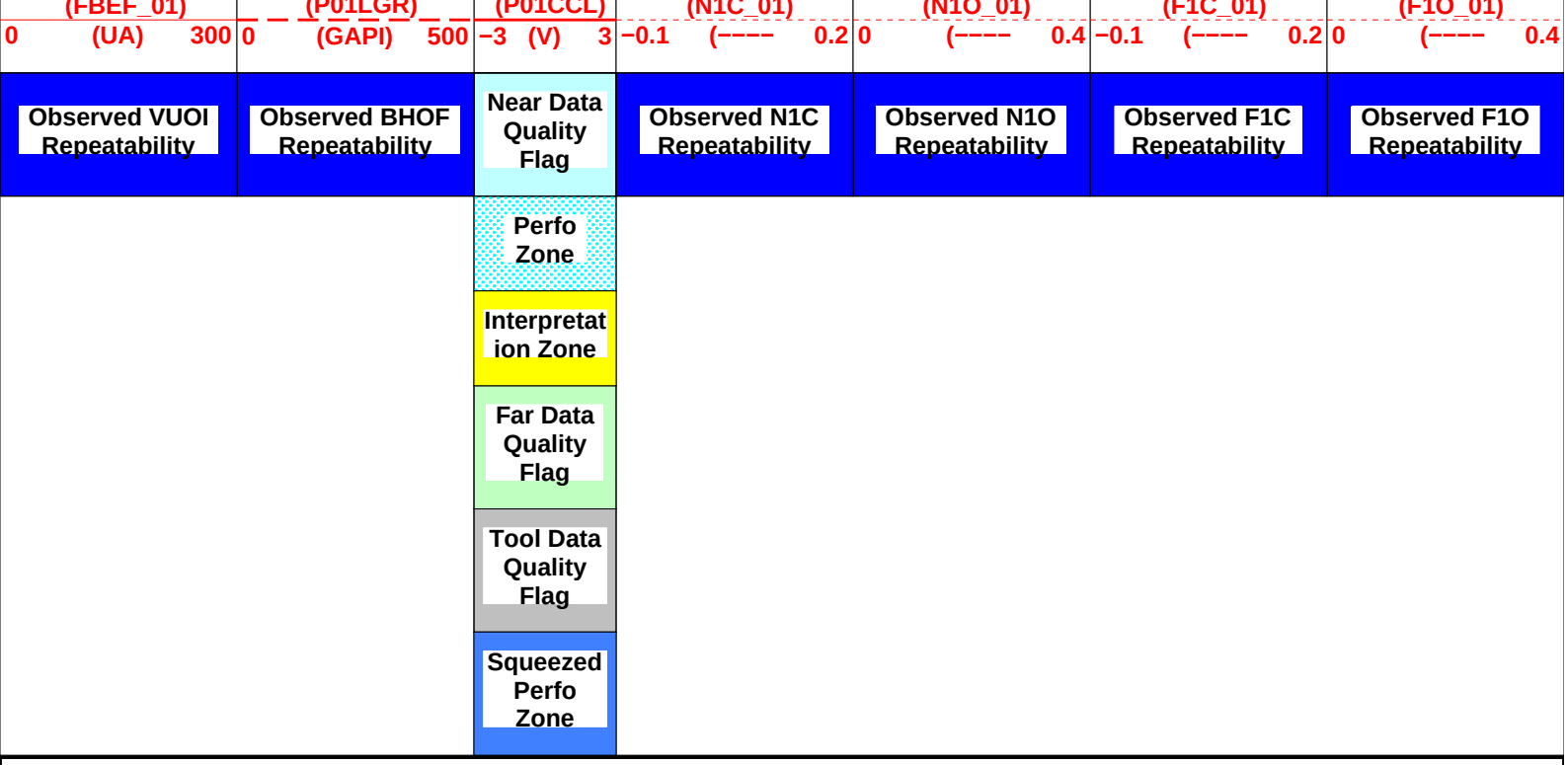
RST−C	14C0−302	PSPT−A/B	14C0−302

Squeezed Perfo Zone

Tool Data Quality Flag

Far Data Quality Flag


Interpretation Zone
Perfo Zone
Observed VUOI Repeatability
Observed BHOF Repeatability
Near Data Quality Flag
Observed N1C Repeatability
Observed N1O Repeatability
Observed F1C Repeatability
Observed F1O Repeatability
(FBEF_01) 0 (UA) 300
(P01LGR) 0 (GAPI) 500
(P01CCL) −3 (V) 3
(N1C_01) −0.1 (---- 0.2
(N1O_01) 0 (---- 0.4
(F1C_01) −0.1 (---- 0.2
(F1O_01) 0 (---- 0.4
(FBEF_02) 0 (UA) 300
(P02LGR) 0 (GAPI) 500
(P02CCL) −3 (V) 3
(N1C_02) −0.1 (---- 0.2
(N1O_02) 0 (---- 0.4
(F1C_02) −0.1 (---- 0.2
(F1O_02) 0 (---- 0.4
(FBEF_03) 0 (UA) 300
(P03LGR) 0 (GAPI) 500
(P03CCL) −3 (V) 3
(N1C_03) −0.1 (---- 0.2
(N1O_03) 0 (---- 0.4
(F1C_03) −0.1 (---- 0.2
(F1O_03) 0 (---- 0.4
(FBEF_04) 0 (UA) 300
(P04LGR) 0 (GAPI) 600
(P04CCL) −3 (V) 3
(N1C_04) −0.1 (---- 0.2
(N1O_04) 0 (---- 0.4
(F1C_04) −0.1 (---- 0.2
(F1O_04) 0 (---- 0.4
3975
(FBEF_04) 0 (UA) 300
(P04LGR) 0 (GAPI) 600
(P04CCL) −3 (V) 3
(N1C_04) −0.1 (---- 0.2
(N1O_04) 0 (---- 0.4
(F1C_04) −0.1 (---- 0.2
(F1O_04) 0 (---- 0.4
(FBEF_03) 0 (UA) 300
(P03LGR) 0 (GAPI) 500
(P03CCL) −3 (V) 3
(N1C_03) −0.1 (---- 0.2
(N1O_03) 0 (---- 0.4
(F1C_03) −0.1 (---- 0.2
(F1O_03) 0 (---- 0.4
(FBEF_02) 0 (UA) 300
(P02LGR) 0 (GAPI) 500
(P02CCL) −3 (V) 3
(N1C_02) −0.1 (---- 0.2
(N1O_02) 0 (---- 0.4
(F1C_02) −0.1 (---- 0.2
(F1O_02) 0 (---- 0.4



Parameters

DLIS Name	Description	Value	
	RST−C: Reservoir Saturation Pro Tool C		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	PSPT−A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	BORDYN: BorDyn (Well Test Validation)		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	RQL: RSTPro Reservoir Quick Look		
ADFC_RQL	RQL Adaptive Filter Control	FILTER_ON	
ALFL_RQL	RQL Alpha Filter Length	11_LEVELS	
BCDV_RQL	RQL Borehole Oil Carbon Density Value	0.731495	
BGAS_RQL	RQL Borehole Gas Present	NO_GAS	
BHOF_RQL	RQL Oil Holdup	0	
BHOF_SIG_RQL	RQL Oil Holdup Uncertainty	0.01	
BHS	Borehole Status	CASED	
CARB_RQL	RQL Carbonate Fraction	0	
CCLS	CCL Selector	CCLC	
CSID	Casing Size I.D.	6.875	IN
FCDV_RQL	RQL Formation Oil Carbon Density Value	0.731495	
FCHD	Cased Hole Diameter Selector	PARAMETER	
FOFF_RQL	RQL Far Inelastic Carbon/Oxygen Ratio Offset	0	
LSRC_RQL	RQL Lithology Model Source	RQL_Lith_Indicator	
NOFF_RQL	RQL Near Inelastic Carbon/Oxygen Ratio Offset	0	
PCVS	CVEL Selector	CVEL	
PGRS	GR Selector	GR	
PGS	Pressure Gauge Selector	WPRE	
PING_RQL	RQL Poro Indicator Gain	1	
PINO_RQL	RQL Poro Indicator Offset	0	
PSRC_RQL	RQL Porosity Model Source	RQL_Poro_Indicator	
PWHS	PLQL Water HoldUp Selector	NONE	
RHOS	Fluid Density Selector	WFDE	
SMFL_RQL	RQL Smoothing Filter Length	05_LEVELS	
SMSA_RQL	RQL Algorithm for Stacking Sigma Mode Data	WEIGHTED	
SPIS	Spinner Selector	SPIN	
TMPS	Temperature Selector	WTEP	
TPHI_RQL	RQL Porosity	0.25	
TPOS_RQL	RQL Tool Position in the Borehole	ECCENTERED	
VUOI_SIGT_RQL	RQL Oil Volume Target Uncertainty	−50000	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	1.2	M
PP	Playback Processing	NORMAL	

Format: RQL_ICStack **Vertical Scale: 1:200** **Graphics File Created: 07−May−2007 06:45**

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

Output DLIS Files

DEFAULT	RST_PSP_056PUP	FN:55	PRODUCER	07−May−2007 06:45	

Schlumberger

Flowing Sigma Pass # 2

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10a**

Input DLIS Files

DEFAULT	RST_PSP_028LUP	FN:27	PRODUCER	06−May−2007 16:16	4055.7 M	3890.5 M

Output DLIS Files

DEFAULT	RST_PSP_029PUP	FN:28	PRODUCER	06−May−2007 16:53	4054.6 M	3884.4 M

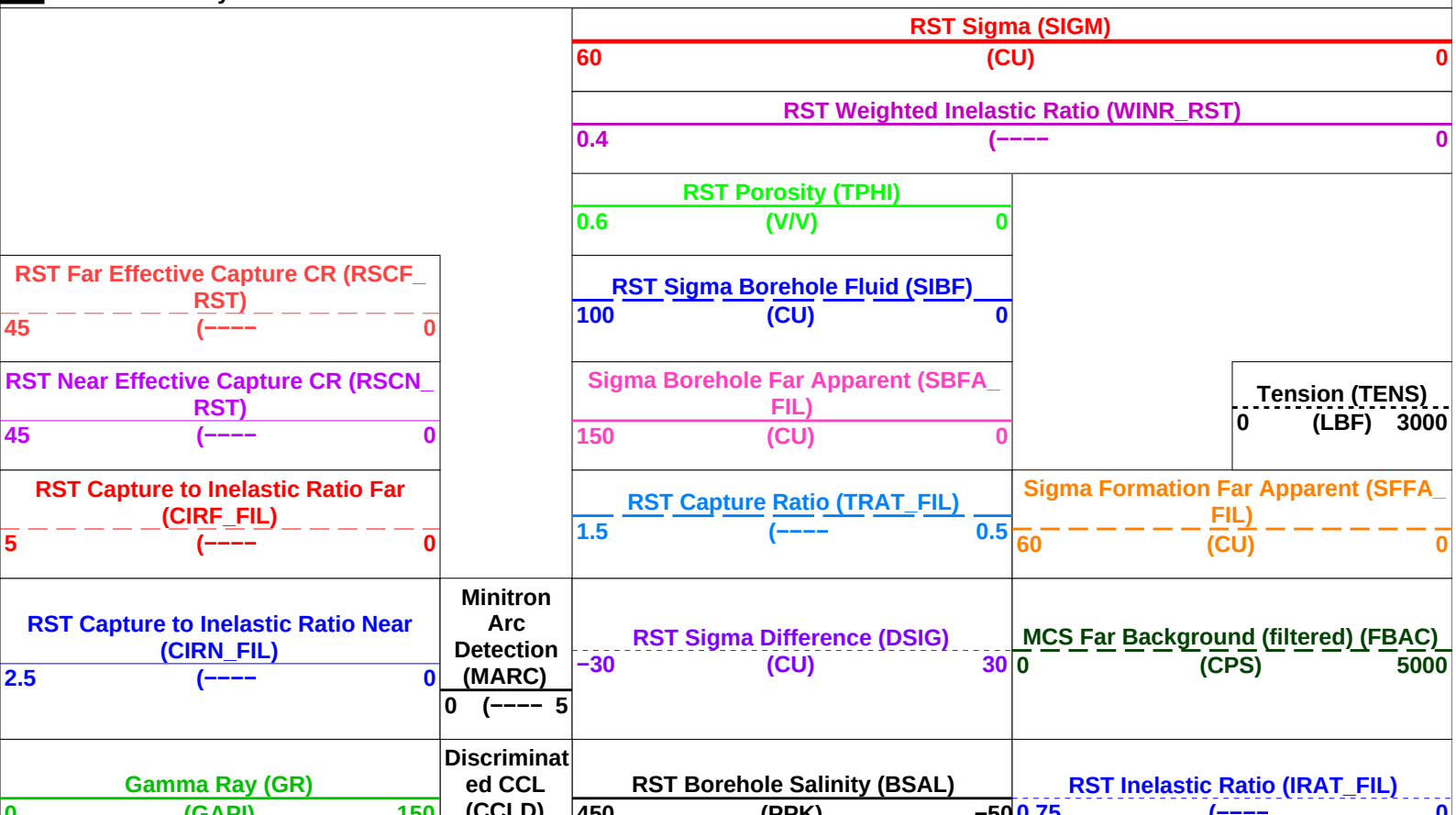
OP System Version: 14C0−302

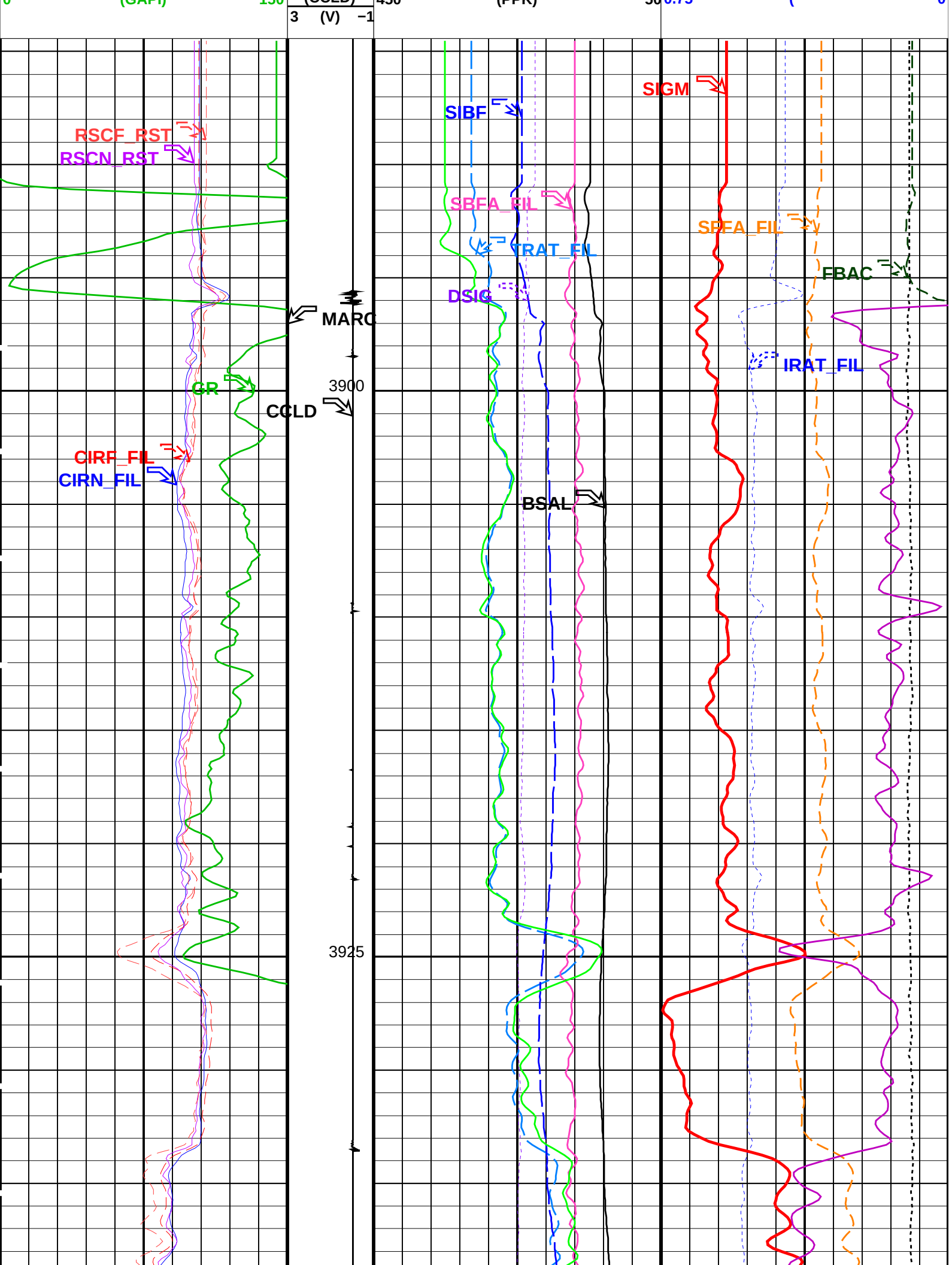
MCM

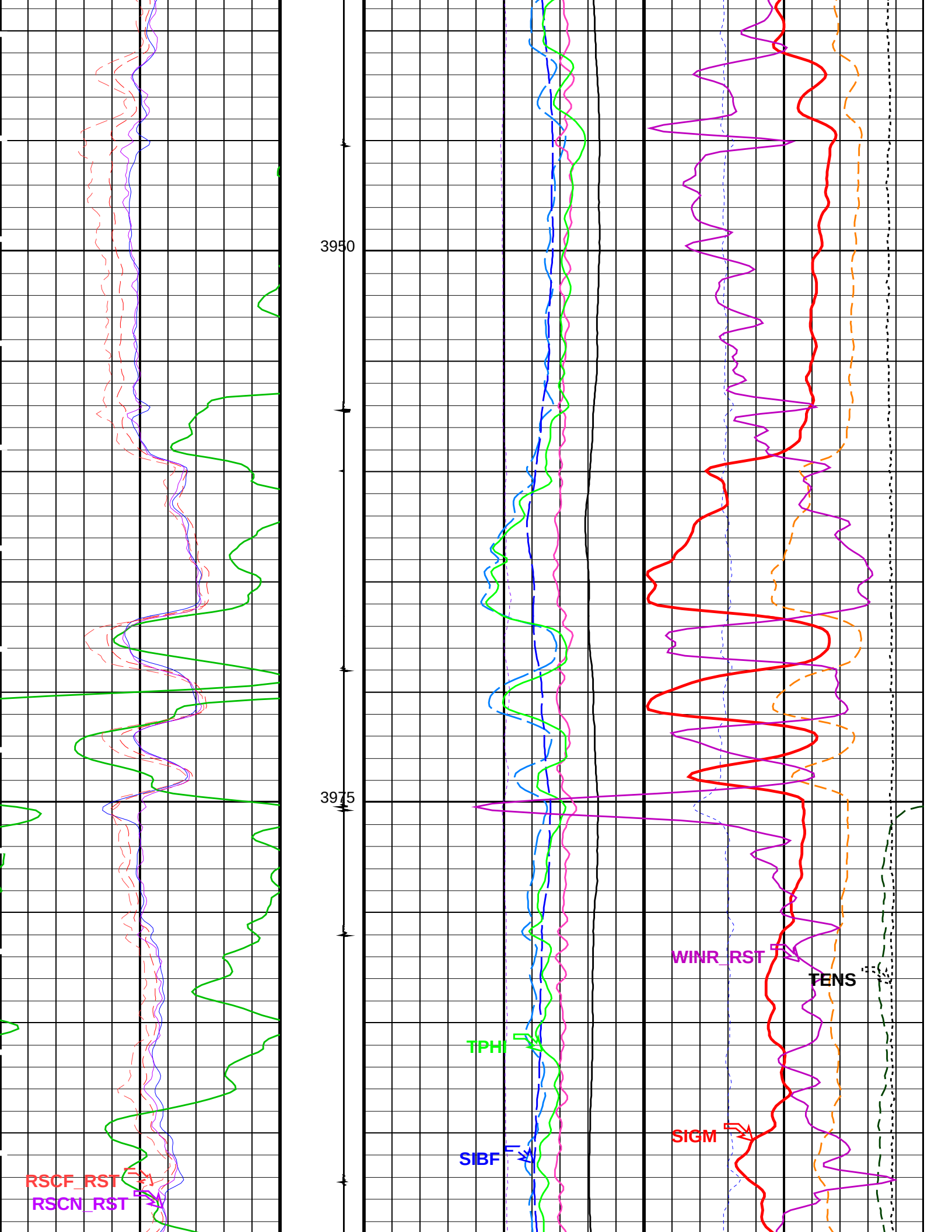
RST−C	14C0−302	PSPT−A/B	14C0−302

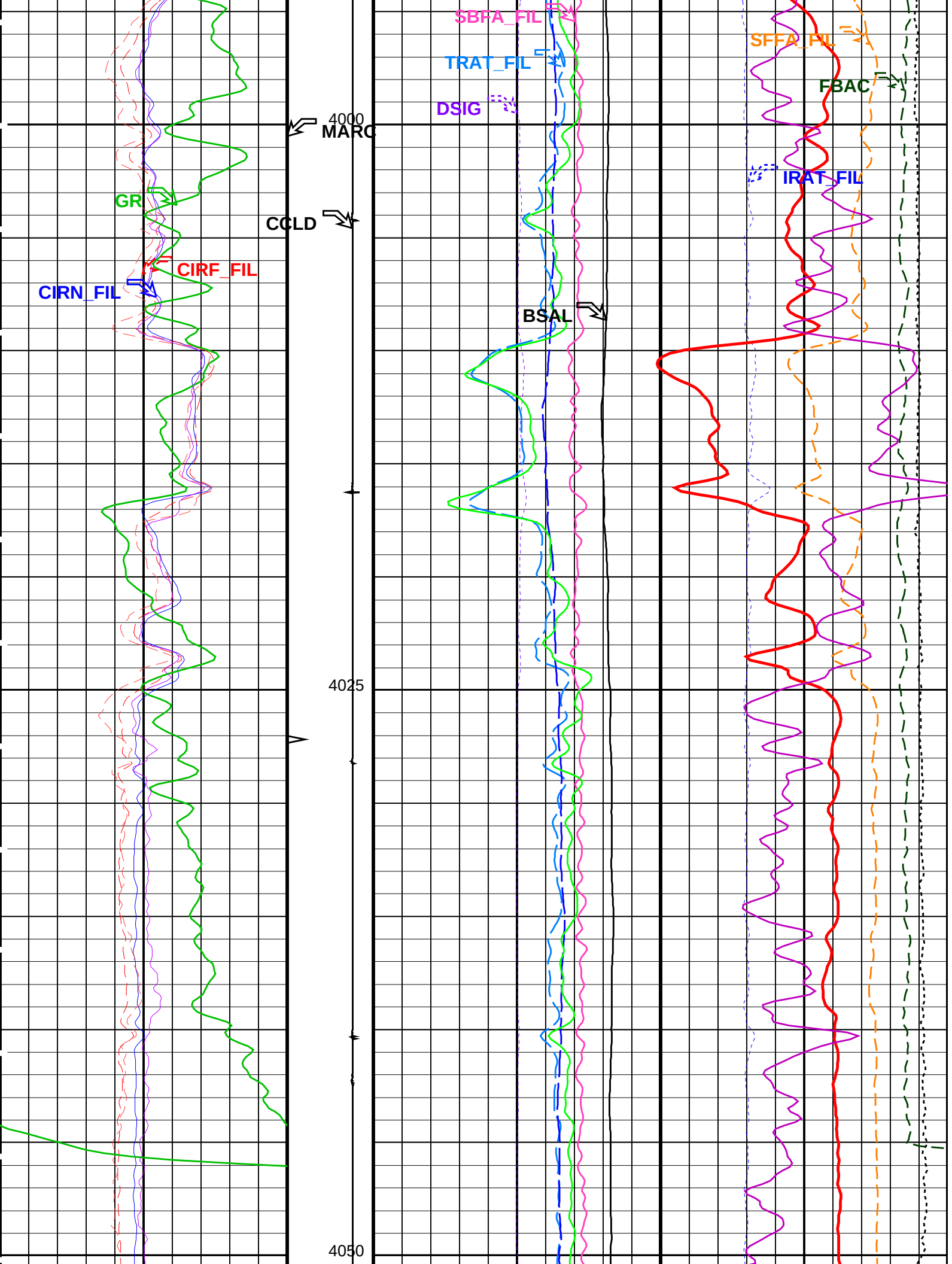
PIP SUMMARY

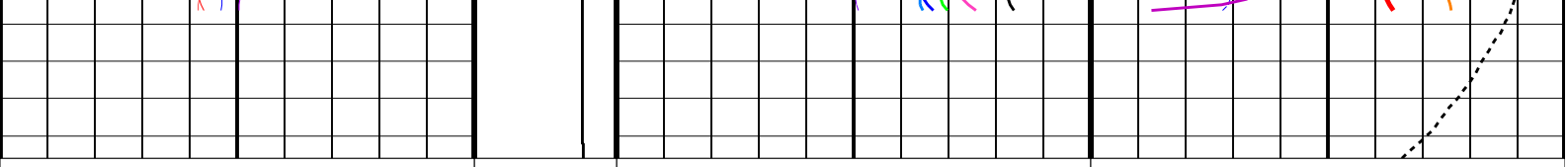
Time Mark Every 60 S




(GAPI)
(CCLD)
3
(V)
−1
(PPK)
RSCF_RST
RSCN_RST
MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
SIBF
SBFA_FIL
TRAT_FIL
DSIG
BSAL
SIGM
SFFA_FIL
FBAC
IRAT_FIL
3900
3925


3950
3975
RSCF_RST
RSCN_RST
TPHI
SIBF
WINR_RST
TENS
SIGM


SBFA_FIL
TRAT_FIL
DSIG
SFFA_FIL
FBAC
IRAT_FIL
4000
MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
BSAL
4025
4050



Gamma Ray (GR)	Discriminated CCL (CCLD)	RST Borehole Salinity (BSAL)	RST Inelastic Ratio (IRAT_FIL)
0 (GAPI) 150	3 (V) −1	450 (PPK) −50	0.75 (---- 0

RST Capture to Inelastic Ratio Near (CIRN_FIL)	Minitron Arc Detection (MARC)	RST Sigma Difference (DSIG)	MCS Far Background (filtered) (FBAC)
2.5 (---- 0	0 (---- 5	−30 (CU) 30	0 (CPS) 5000

RST Capture to Inelastic Ratio Far (CIRF_FIL)	RST Capture Ratio (TRAT_FIL)	Sigma Formation Far Apparent (SFFA_FIL)
5 (---- 0	1.5 (---- 0.5	60 (CU) 0

RST Near Effective Capture CR (RSCN_RST)	Sigma Borehole Far Apparent (SBFA_FIL)	Tension (TENS)
45 (---- 0	150 (CU) 0	0 (LBF) 3000

RST Far Effective Capture CR (RSCF_RST)	RST Sigma Borehole Fluid (SIBF)
45 (---- 0	100 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0

RST Weighted Inelastic Ratio (WINR_RST)
0.4 (---- 0

RST Sigma (SIGM)
60 (CU) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST−C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No	
BHS	Borehole Status	CASED	
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
DFPC	RST Depth Filter Processing Constant	One	
DFPC_TDTL	RST Depth Filter Processing Constant (TDT−like)	Two	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
	PSPT−A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	RQL: RSTPro Reservoir Quick Look		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	−1.0	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 06−May−2007 16:53

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

Input DLIS Files

DEFAULT	RST_PSP_028LUP	FN:27	PRODUCER	06−May−2007 16:16	4055.7 M	3890.5 M

Output DLIS Files

DEFAULT	RST_PSP_029PUP	FN:28	PRODUCER	06−May−2007 16:53		

Schlumberger

Flowing Sigma Pass # 1

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10a**

Input DLIS Files

DEFAULT	RST_PSP_026LUP	FN:25	PRODUCER	06−May−2007 15:29	4055.1 M	3890.0 M

Output DLIS Files

DEFAULT	RST_PSP_027PUP	FN:26	PRODUCER	06−May−2007 16:08	4053.7 M	3883.6 M

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM)
60 (CU) 0

RST Weighted Inelastic Ratio (WINR_RST)
0.4 (−−−− 0

RST Porosity (TPHI)
0.6 (V/V) 0

RST Far Effective Capture CR (RSCF_RST)
45 (−−−− 0

RST Sigma Borehole Fluid (SIBF)
100 (CU) 0

RST Near Effective Capture CR (RSCN_RST)
45 (−−−− 0

Sigma Borehole Far Apparent (SBFA_FIL)
150 (CU) 0

Tension (TENS)
0 (LBF) 3000

RST Capture to Inelastic Ratio Far (CIRF_FIL)
5 (−−−− 0

RST Capture Ratio (TRAT_FIL)
1.5 (−−−− 0.5

Sigma Formation Far Apparent (SFFA_FIL)
60 (CU) 0

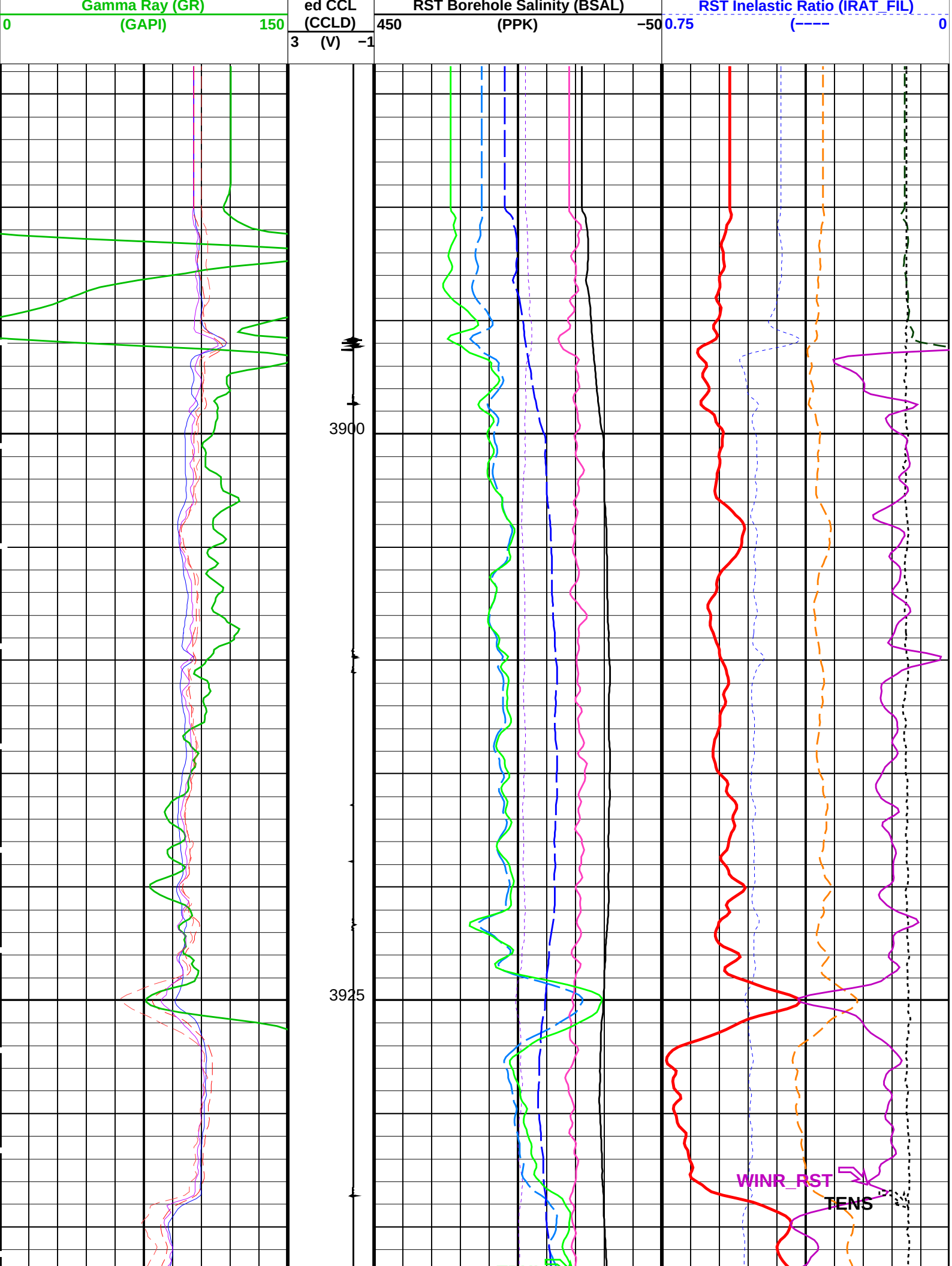
RST Capture to Inelastic Ratio Near (CIRN_FIL)
2.5 (−−−− 0

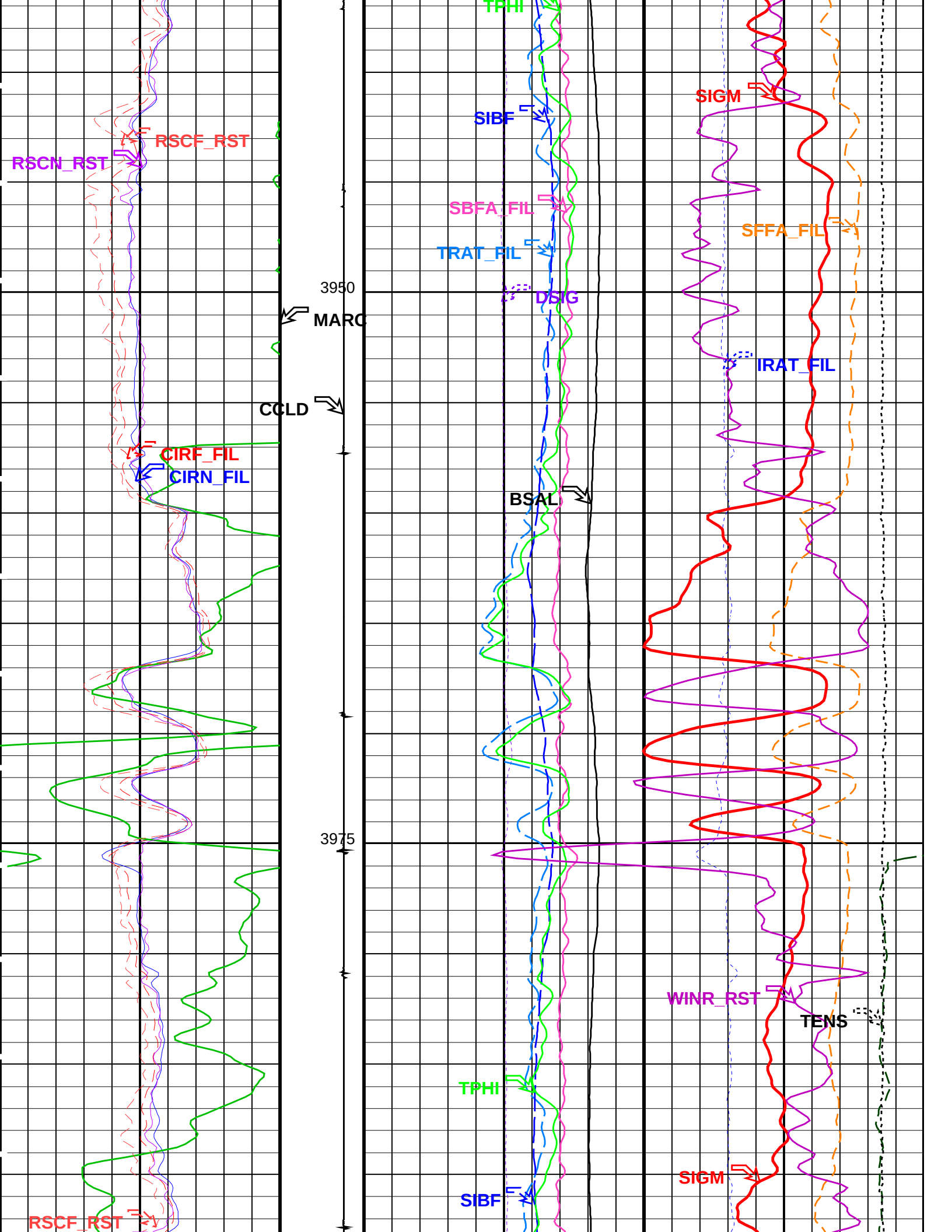
Minitron Arc Detection (MARC)
0 (−−−− 5

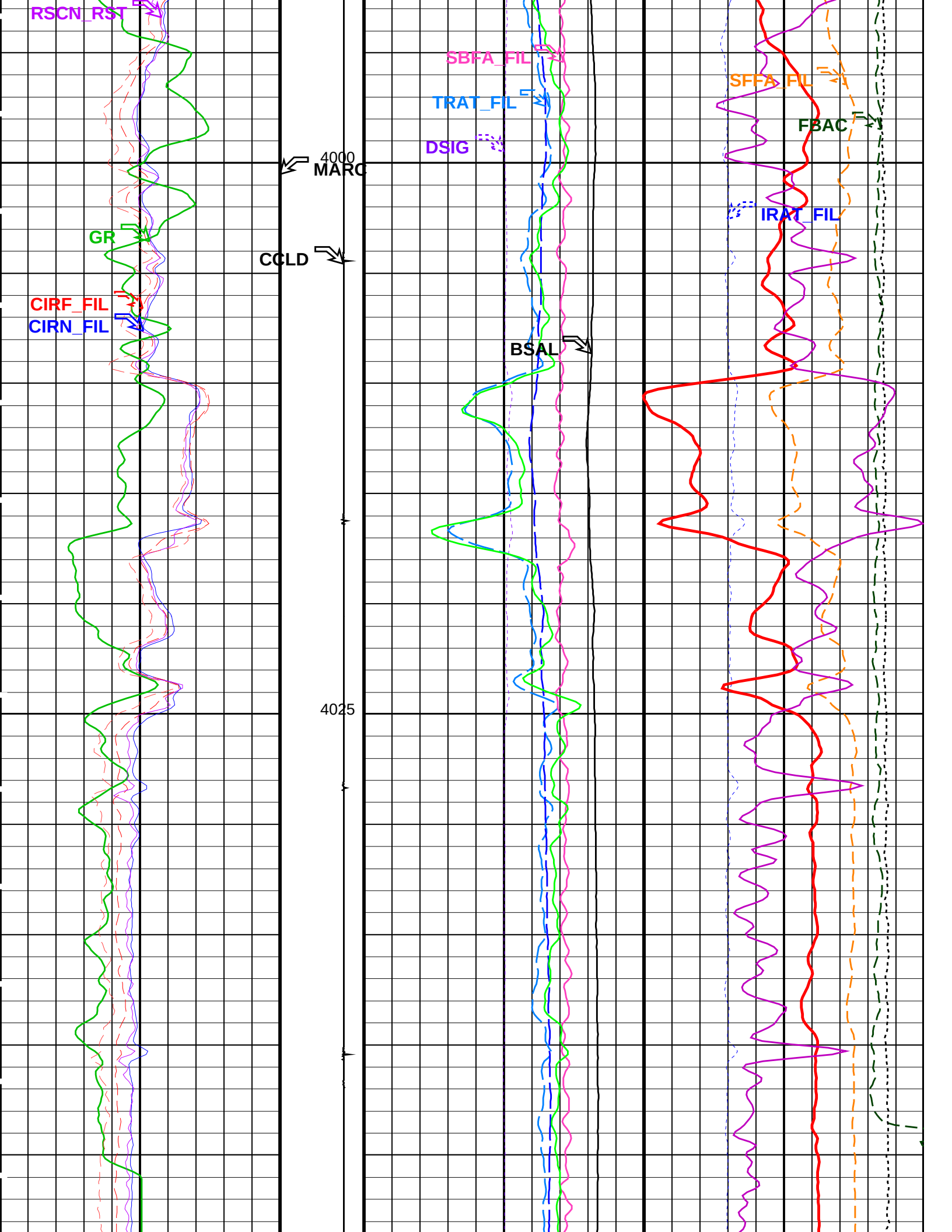
RST Sigma Difference (DSIG)
−30 (CU) 30

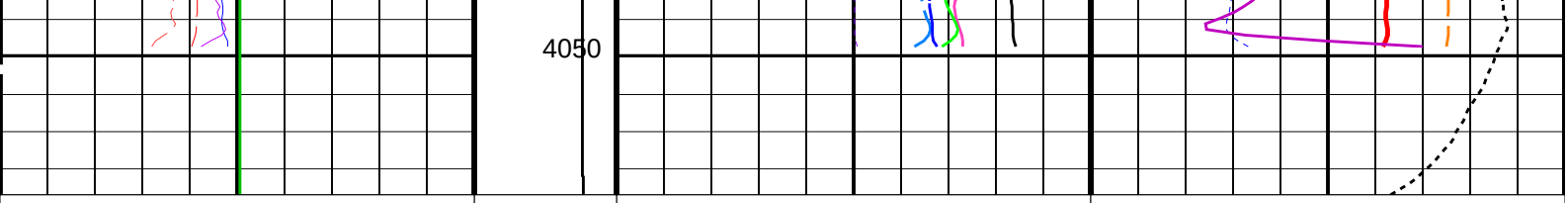
MCS Far Background (filtered) (FBAC)
0 (CPS) 5000

Discriminat


Gamma Ray (GR)
0
(GAPI)
150
ed CCL
(CCLD)
3
(V)
−1
RST Borehole Salinity (BSAL)
450
(PPK)
−50
RST Inelastic Ratio (IRAT_FIL)
0.75
(−−−−
0
3900
3925
WINR_RST
TENS


RSCF_RST
RSCN_RST
CIRF_FIL
CIRN_FIL
RSCF_RST
TPHI
SIBF
SBFA_FIL
TRAT_FIL
DSIG
3950
MARC
CCLD
BSAL
3975
TPHI
SIBF
SIGM
SFFA_FIL
IRAT_FIL
WINR_RST
TENS
SIGM


RSCN_RST
GR
CIRF_FIL
CIRN_FIL
4000
MARC
CCLD
4025
SBFA_FIL
TRAT_FIL
DSIG
BSAL
SFFA_FIL
FBAC
IRAT_FIL



Gamma Ray (GR)
0 (GAPI) 150

Discriminated CCL (CCLD)
3 (V) −1

RST Borehole Salinity (BSAL)
450 (PPK) −50

RST Inelastic Ratio (IRAT_FIL)
0.75 (---- 0

RST Capture to Inelastic Ratio Near (CIRN_FIL)
2.5 (---- 0

Minitron Arc Detection (MARC)
0 (---- 5

RST Sigma Difference (DSIG)
−30 (CU) 30

MCS Far Background (filtered) (FBAC)
0 (CPS) 5000

RST Capture to Inelastic Ratio Far (CIRF_FIL)
5 (---- 0

RST Capture Ratio (TRAT_FIL)
1.5 (---- 0.5

Sigma Formation Far Apparent (SFFA_FIL)
60 (CU) 0

RST Near Effective Capture CR (RSCN_RST)
45 (---- 0

Sigma Borehole Far Apparent (SBFA_FIL)
150 (CU) 0

Tension (TENS)
0 (LBF) 3000

RST Far Effective Capture CR (RSCF_RST)
45 (---- 0

RST Sigma Borehole Fluid (SIBF)
100 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0

RST Weighted Inelastic Ratio (WINR_RST)
0.4 (---- 0

RST Sigma (SIGM)
60 (CU) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST−C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No	
BHS	Borehole Status	CASED	
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
DFPC	RST Depth Filter Processing Constant	One	
DFPC_TDTL	RST Depth Filter Processing Constant (TDT−like)	Two	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
	PSPT−A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	RQL: RSTPro Reservoir Quick Look		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	−1.4	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 06−May−2007 16:08

OP System Version: 14C0−302

			MCM				
RST−C	14C0−302		PSPT−A/B	14C0−302			

Input DLIS Files

DEFAULT	RST_PSP_026LUP	FN:25	PRODUCER	06−May−2007 15:29	4055.1 M	3890.0 M

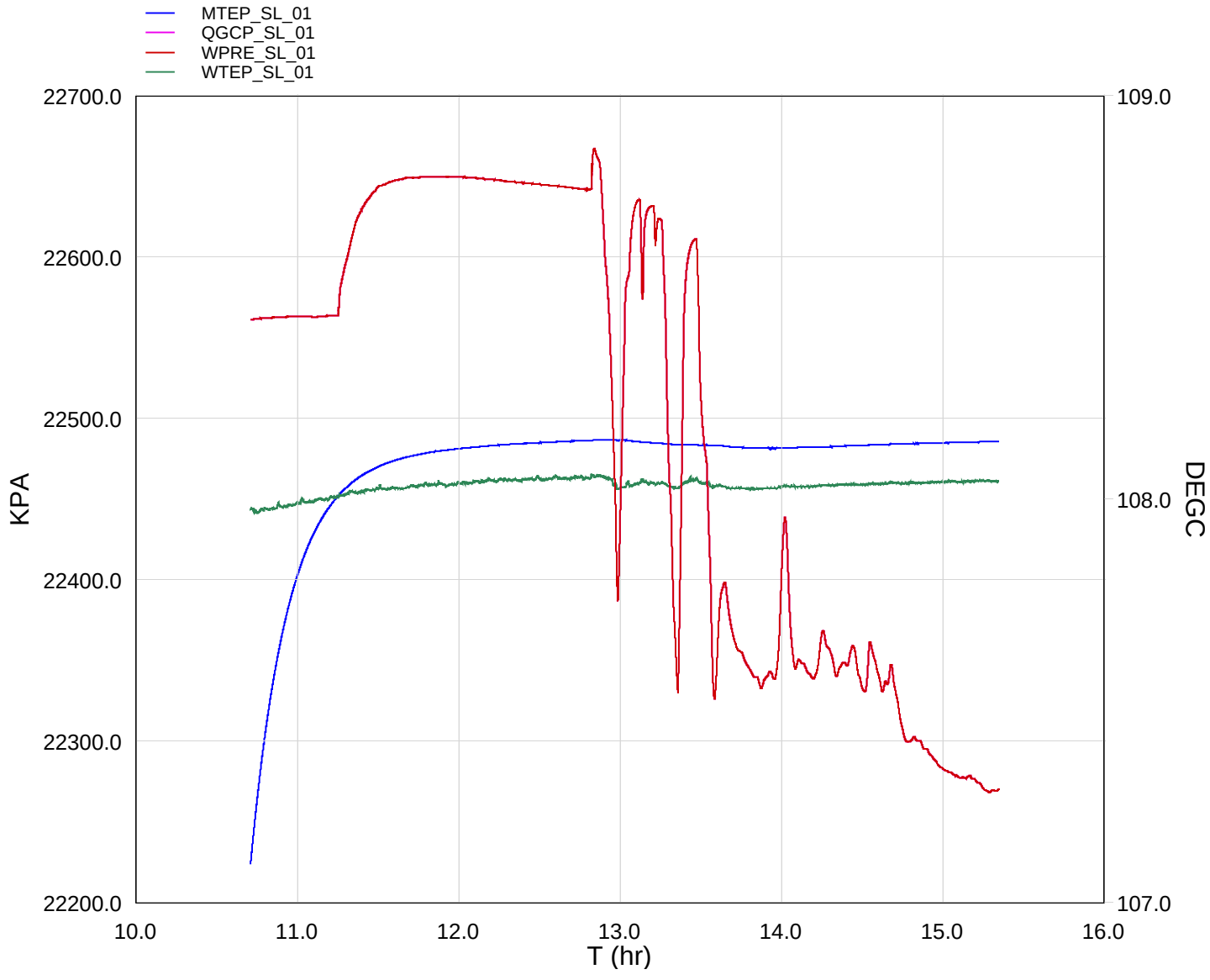
Output DLIS Files

DEFAULT	RST_PSP_027PUP	FN:26	PRODUCER	06−May−2007 16:08

Schlumberger

Drawdown @ 4050m MDKB

MAXIS Field Log



TIME	TQ1	DEGF	PSIA

TIME	TOJ	DEGF	PSIA
23400.0000	10.7348	226.3382	3272.3224
23700.0000	10.8182	226.3562	3272.4246
24000.0000	10.9015	226.3688	3272.4900
24300.0000	10.9848	226.3790	3272.5425
24600.0000	11.0682	226.3889	3272.5845
24900.0000	11.1515	226.4008	3272.5640
25200.0000	11.2348	226.4099	3272.6065
25500.0000	11.3182	226.4249	3278.3707
25800.0000	11.4015	226.4350	3282.2230
26100.0000	11.4848	226.4460	3283.8963
26400.0000	11.5682	226.4503	3284.5879
26700.0000	11.6515	226.4499	3284.9236
27000.0000	11.7348	226.4570	3285.0270
27300.0000	11.8182	226.4641	3285.1159
27600.0000	11.9015	226.4687	3285.1252
27900.0000	11.9848	226.4695	3285.0896
28200.0000	12.0682	226.4727	3285.0367
28500.0000	12.1515	226.4820	3284.9324
28800.0000	12.2348	226.4799	3284.8291
29100.0000	12.3182	226.4870	3284.6836
29400.0000	12.4015	226.4879	3284.5615
29700.0000	12.4848	226.5003	3284.4467
30000.0000	12.5682	226.4911	3284.3274
30300.0000	12.6515	226.4942	3284.2159
30600.0000	12.7348	226.4998	3284.0654
30900.0000	12.8182	226.4968	3283.9896
31200.0000	12.9015	226.5014	3279.7088
31500.0000	12.9848	226.4468	3247.2876
31800.0000	13.0682	226.4655	3279.7432
32100.0000	13.1515	226.4812	3280.4152
32400.0000	13.2348	226.4761	3281.1858
32700.0000	13.3182	226.4561	3254.3323
33000.0000	13.4015	226.4786	3274.3652
33300.0000	13.4848	226.4849	3274.9241
33600.0000	13.5682	226.4555	3244.4192
33900.0000	13.6515	226.4566	3248.6559
34200.0000	13.7348	226.4531	3242.5378
34500.0000	13.8182	226.4495	3240.4745
34800.0000	13.9015	226.4516	3240.0690
35100.0000	13.9848	226.4567	3243.0964
35400.0000	14.0682	226.4573	3242.6957
35700.0000	14.1515	226.4579	3240.9437
36000.0000	14.2348	226.4625	3242.0936
36300.0000	14.3182	226.4641	3241.7387
36600.0000	14.4015	226.4656	3241.2625
36900.0000	14.4848	226.4670	3240.1747
37200.0000	14.5682	226.4721	3242.2825
37500.0000	14.6515	226.4731	3239.5782
37800.0000	14.7348	226.4735	3236.6082
38100.0000	14.8182	226.4743	3234.7061
38400.0000	14.9015	226.4761	3233.6805
38700.0000	14.9848	226.4792	3232.0462
39000.0000	15.0682	226.4824	3231.3856
39300.0000	15.1515	226.4809	3231.1072
39600.0000	15.2348	226.4856	3230.5299
39900.0000	15.3182	226.4822	3229.9411

Schlumberger

SHUT−IN Carbon Oxygen Passes
3956m to 3934m MDKB

MAXIS Field Log

RQL Passes Summary

RQL Software Version Number 2.00

Pass # 1 (RQL_CS_041_1):
Pass # 2 (RQL_CS_042_1):
Pass # 3 (RQL_CS_043_1):

RQL Quality Flags Raised (Data)

Near Data Error: No good C,O left to stack.
Near Data Error: In computing C/O ratio.
Near Data Caution: Discarded invalid C,O.
Far Data Error: No good C,O left to stack.
Far Data Error: In computing C/O ratio.
Far Data Caution: Discarded invalid C,O.

Company: Esso Australia Pty Ltd. **Well: A−10a**

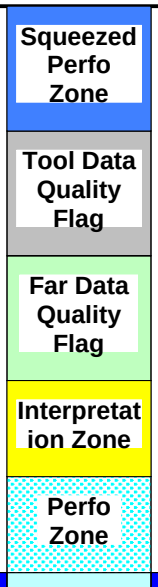
Output DLIS Files

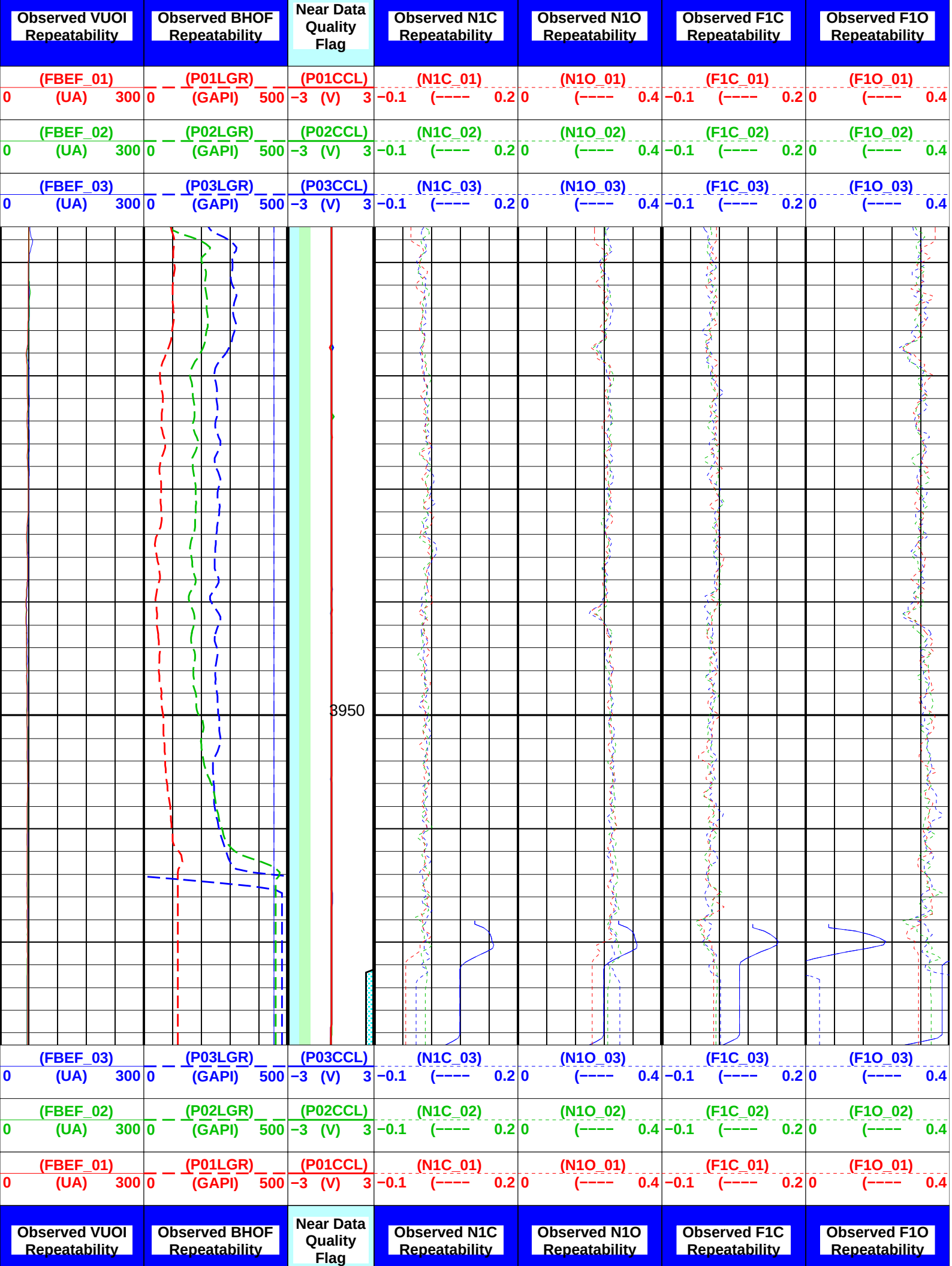
DEFAULT **RST_PSP_051PUP** **FN:50** **PRODUCER** **07−May−2007 06:32**

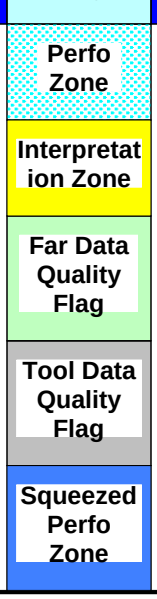
OP System Version: 14C0−302

MCM

RST−C **14C0−302** **PSPT−A/B** **14C0−302**




Observed VUOI Repeatability
Observed BHOF Repeatability
Near Data Quality Flag
Observed N1C Repeatability
Observed N1O Repeatability
Observed F1C Repeatability
Observed F1O Repeatability
(FBEF_01)
0 (UA) 300
(P01LGR)
0 (GAPI) 500
(P01CCL)
−3 (V) 3
(N1C_01)
−0.1 (---- 0.2
(N1O_01)
0 (---- 0.4
(F1C_01)
−0.1 (---- 0.2
(F1O_01)
0 (---- 0.4
(FBEF_02)
0 (UA) 300
(P02LGR)
0 (GAPI) 500
(P02CCL)
−3 (V) 3
(N1C_02)
−0.1 (---- 0.2
(N1O_02)
0 (---- 0.4
(F1C_02)
−0.1 (---- 0.2
(F1O_02)
0 (---- 0.4
(FBEF_03)
0 (UA) 300
(P03LGR)
0 (GAPI) 500
(P03CCL)
−3 (V) 3
(N1C_03)
−0.1 (---- 0.2
(N1O_03)
0 (---- 0.4
(F1C_03)
−0.1 (---- 0.2
(F1O_03)
0 (---- 0.4
3950
(FBEF_03)
0 (UA) 300
(P03LGR)
0 (GAPI) 500
(P03CCL)
−3 (V) 3
(N1C_03)
−0.1 (---- 0.2
(N1O_03)
0 (---- 0.4
(F1C_03)
−0.1 (---- 0.2
(F1O_03)
0 (---- 0.4
(FBEF_02)
0 (UA) 300
(P02LGR)
0 (GAPI) 500
(P02CCL)
−3 (V) 3
(N1C_02)
−0.1 (---- 0.2
(N1O_02)
0 (---- 0.4
(F1C_02)
−0.1 (---- 0.2
(F1O_02)
0 (---- 0.4
(FBEF_01)
0 (UA) 300
(P01LGR)
0 (GAPI) 500
(P01CCL)
−3 (V) 3
(N1C_01)
−0.1 (---- 0.2
(N1O_01)
0 (---- 0.4
(F1C_01)
−0.1 (---- 0.2
(F1O_01)
0 (---- 0.4
Observed VUOI Repeatability
Observed BHOF Repeatability
Near Data Quality Flag
Observed N1C Repeatability
Observed N1O Repeatability
Observed F1C Repeatability
Observed F1O Repeatability



Parameters

DLIS Name	Description	Value	
	RST−C: Reservoir Saturation Pro Tool C		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	PSPT−A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	BORDYN: BorDyn (Well Test Validation)		
BHS	Borehole Status	CASED	
CSID	Casing Size I.D.	6.875	IN
	RQL: RSTPro Reservoir Quick Look		
ADFC_RQL	RQL Adaptive Filter Control	FILTER_ON	
ALFL_RQL	RQL Alpha Filter Length	11_LEVELS	
BCDV_RQL	RQL Borehole Oil Carbon Density Value	0.731495	
BGAS_RQL	RQL Borehole Gas Present	NO_GAS	
BHOF_RQL	RQL Oil Holdup	0	
BHOF_SIG_RQL	RQL Oil Holdup Uncertainty	0.01	
BHS	Borehole Status	CASED	
CARB_RQL	RQL Carbonate Fraction	0	
CCLS	CCL Selector	CCLC	
CSID	Casing Size I.D.	6.875	IN
FCDV_RQL	RQL Formation Oil Carbon Density Value	0.731495	
FCHD	Cased Hole Diameter Selector	PARAMETER	
FOFF_RQL	RQL Far Inelastic Carbon/Oxygen Ratio Offset	0	
LSRC_RQL	RQL Lithology Model Source	RQL_Lith_Indicator	
NOFF_RQL	RQL Near Inelastic Carbon/Oxygen Ratio Offset	0	
PCVS	CVEL Selector	CVEL	
PGRS	GR Selector	GR	
PGS	Pressure Gauge Selector	WPRE	
PING_RQL	RQL Poro Indicator Gain	1	
PINO_RQL	RQL Poro Indicator Offset	0	
PSRC_RQL	RQL Porosity Model Source	RQL_Poro_Indicator	
PWHS	PLQL Water HoldUp Selector	NONE	
RHOS	Fluid Density Selector	WFDE	
SMFL_RQL	RQL Smoothing Filter Length	05_LEVELS	
SMSA_RQL	RQL Algorithm for Stacking Sigma Mode Data	WEIGHTED	
SPIS	Spinner Selector	SPIN	
TMPS	Temperature Selector	WTEP	
TPHI_RQL	RQL Porosity	0.25	
TPOS_RQL	RQL Tool Position in the Borehole	ECCENTERED	
VUOI_SIGT_RQL	RQL Oil Volume Target Uncertainty	−50000	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	0.2	M
PP	Playback Processing	NORMAL	

Format: RQL_ICStack **Vertical Scale: 1:200** **Graphics File Created: 07−May−2007 06:32**

OP System Version: 14C0−302

MCM

RST−C	**14C0−302**	**PSPT−A/B**	**14C0−302**

Output DLIS Files

DEFAULT	RST_PSP_051PUP	FN:50	PRODUCER	07−May−2007 06:32	

Schlumberger

Static Sigma Pass # 1

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10a**

Input DLIS Files

DEFAULT	RST_PSP_018LUP	FN:17	PRODUCER	06−May−2007 06:25	4063.3 M	3883.5 M

Output DLIS Files

DEFAULT	RST_PSP_023PUP	FN:22	PRODUCER	06−May−2007 10:37	4064.4 M	3879.5 M

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM) 60 (CU) 0

RST Weighted Inelastic Ratio (WINR_RST) 0.4 (−−−− 0

RST Porosity (TPHI) 0.6 (V/V) 0

RST Far Effective Capture CR (RSCF_RST) 45 (−−−− 0

RST Sigma Borehole Fluid (SIBF) 100 (CU) 0

RST Near Effective Capture CR (RSCN_RST) 45 (−−−− 0

Sigma Borehole Far Apparent (SBFA_FIL) 150 (CU) 0

Tension (TENS) 0 (LBF) 3000

RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (−−−− 0

RST Capture Ratio (TRAT_FIL) 1.5 (−−−− 0.5

Sigma Formation Far Apparent (SFFA_FIL) 60 (CU) 0

RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (−−−− 0

Minitron Arc Detection (MARC) 0 (−−−− 5

RST Sigma Difference (DSIG) −30 (CU) 30

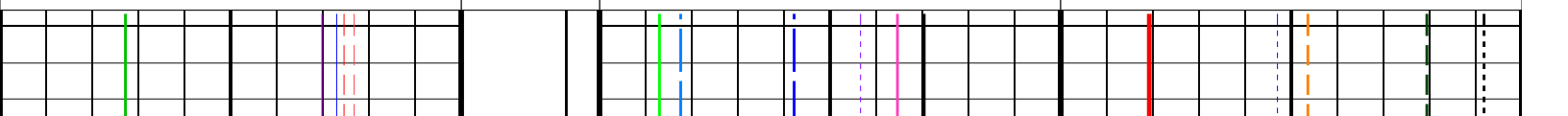
MCS Far Background (filtered) (FBAC) 0 (CPS) 5000

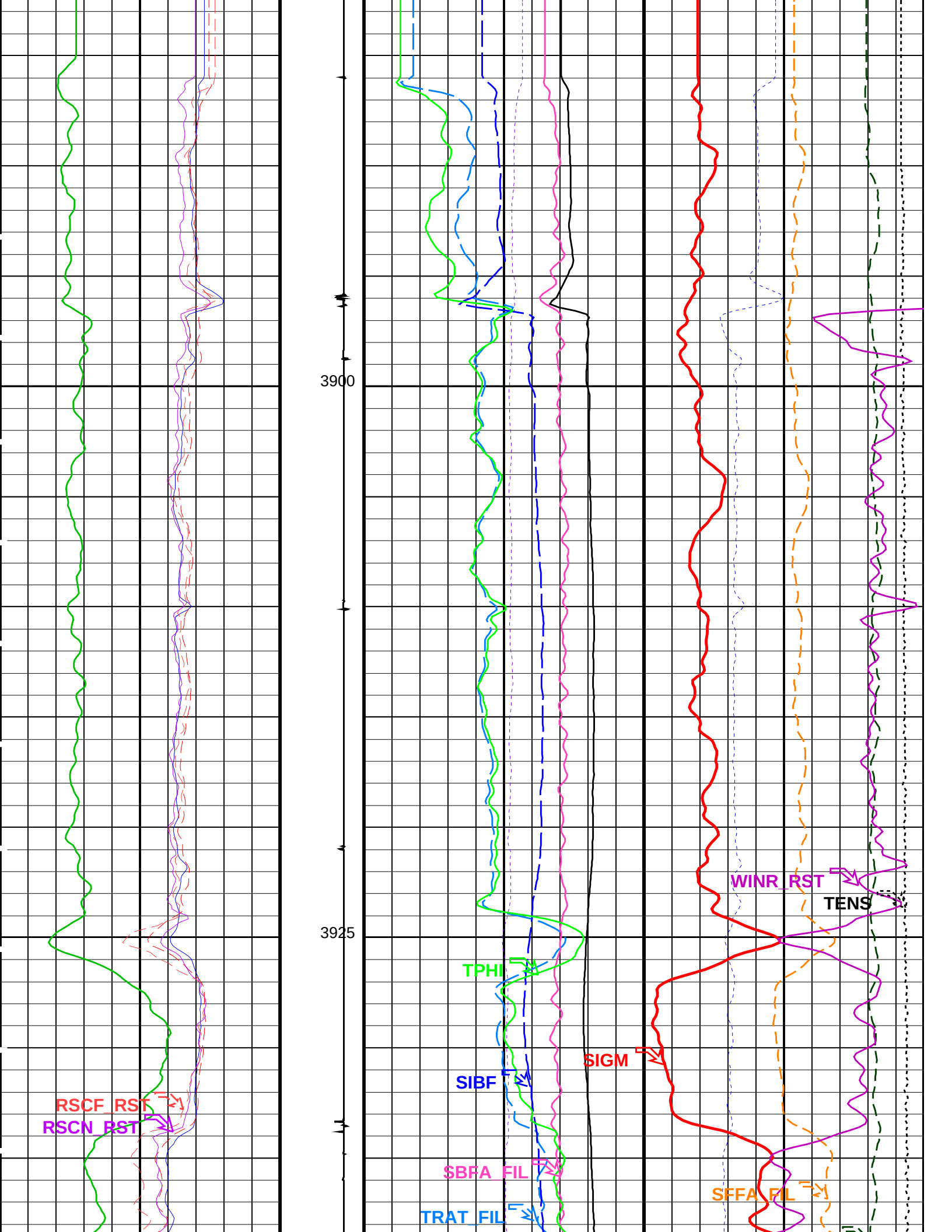
Gamma Ray (GR) 0 (GAPI) 150

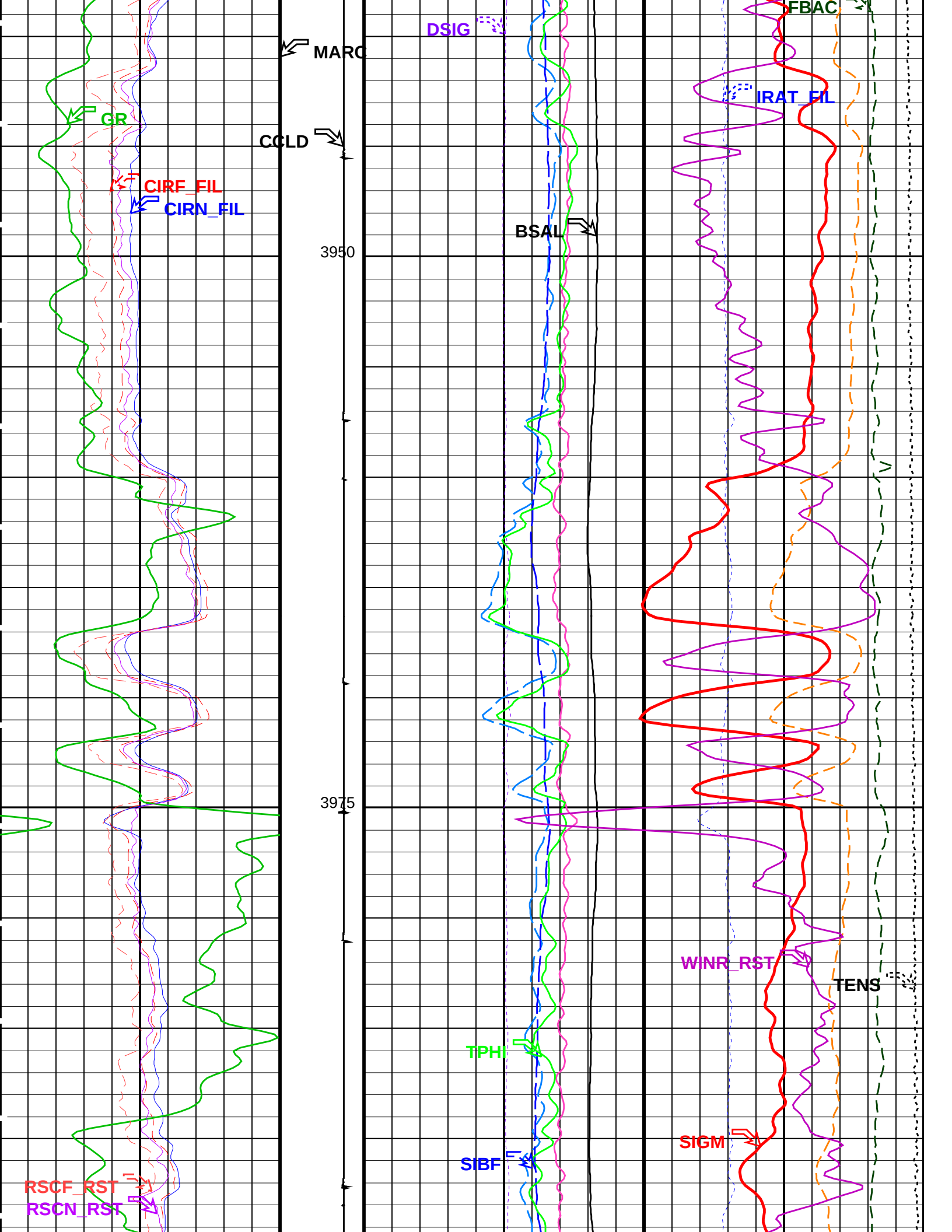
Discriminated CCL (CCLD) 3 (V) −1

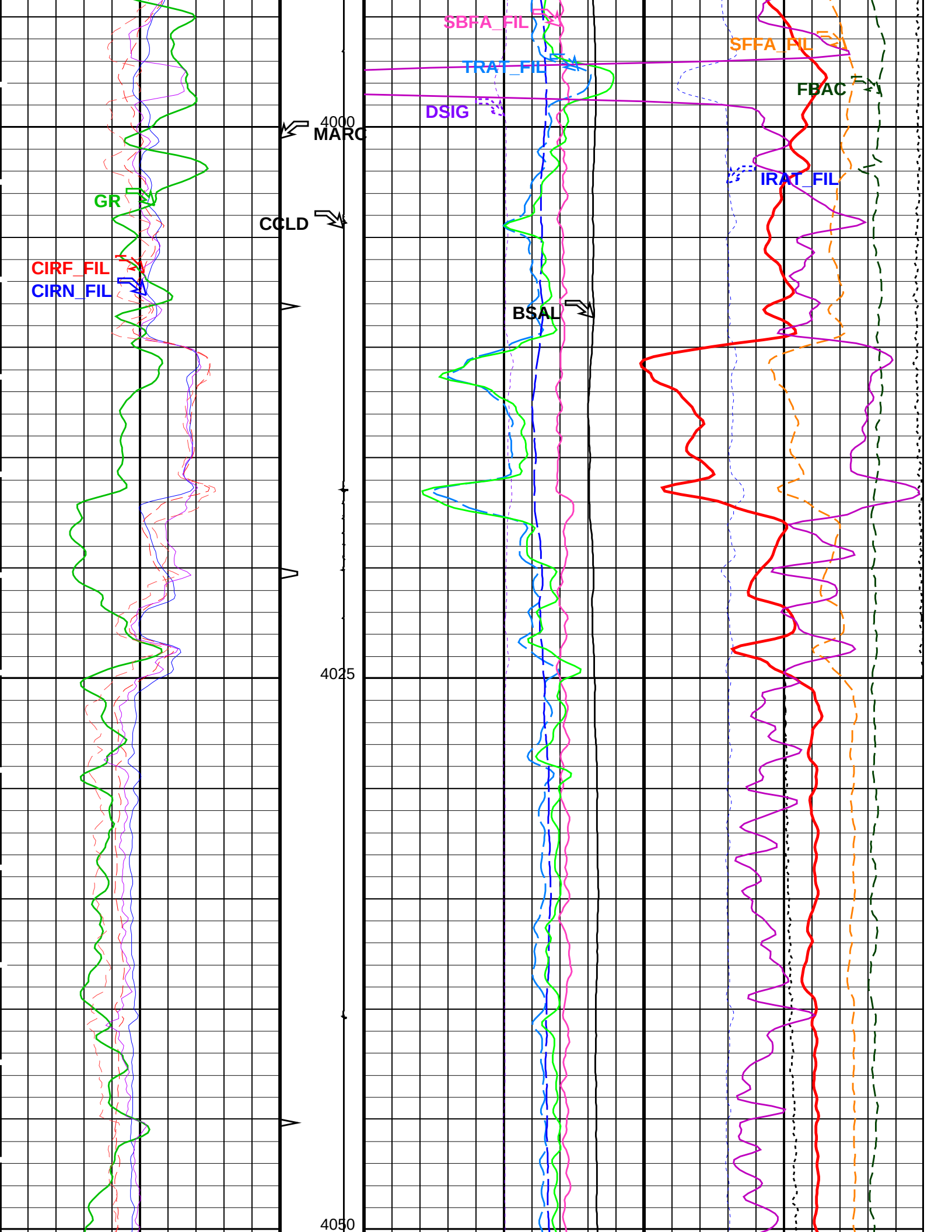
RST Borehole Salinity (BSAL) 450 (PPK) −50

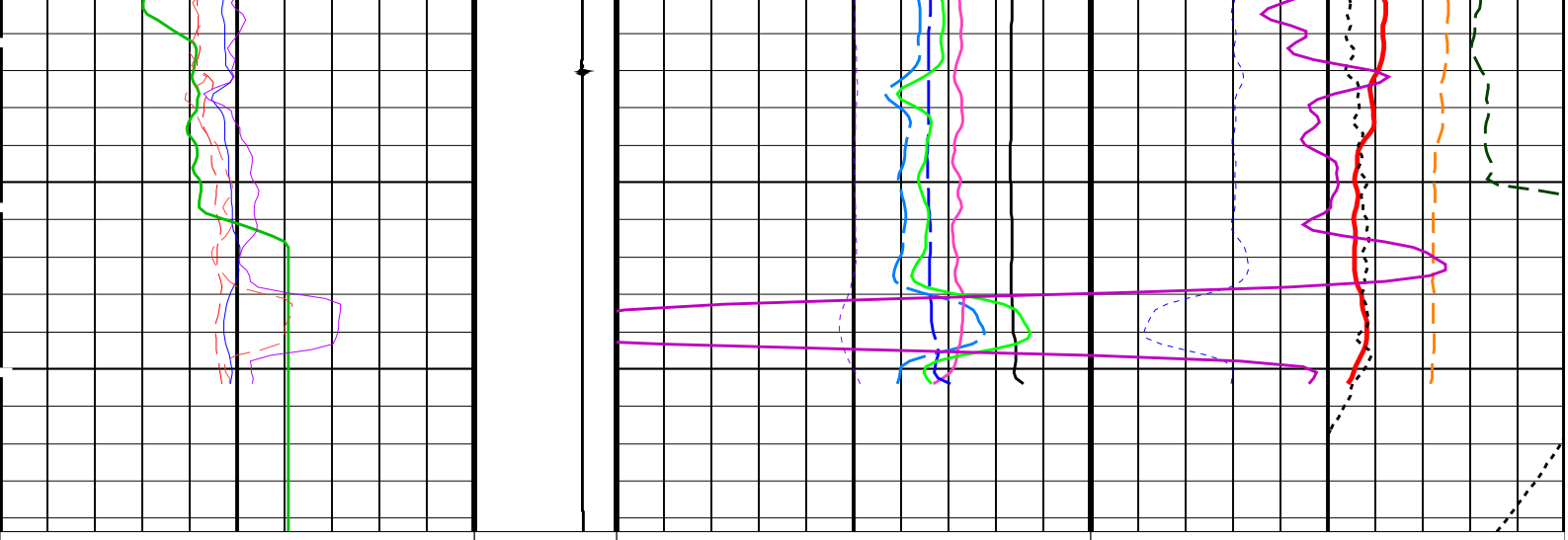
RST Inelastic Ratio (IRAT_FIL) 0.75 (−−−− 0




3900
3925
RSCF_RST
RSCN_RST
TPHI
SIBF
SBFA_FIL
TRAT_FIL
SIGM
WINR_RST
TENS
SFFA_FIL


MARC
CCLD
GR
CIRF_FIL
CIRN_FIL
DSIG
FBAC
IRAT_FIL
BSAL
3950
3975
WINR_RST
TENS
TPHI
SIBF
SIGM
RSCF_RST
RSCN_RST


SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
IRAT_FIL
4000
MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
BSAL
4025
4050



Gamma Ray (GR)	Discriminated CCL (CCLD)	RST Borehole Salinity (BSAL)	RST Inelastic Ratio (IRAT_FIL)
0 (GAPI) 150	3 (V) −1	450 (PPK) −50	0.75 (---- 0
RST Capture to Inelastic Ratio Near (CIRN_FIL)	**Minitron Arc Detection (MARC)**	**RST Sigma Difference (DSIG)**	**MCS Far Background (filtered) (FBAC)**
2.5 (---- 0	0 (---- 5	−30 (CU) 30	0 (CPS) 5000
RST Capture to Inelastic Ratio Far (CIRF_FIL)		**RST Capture Ratio (TRAT_FIL)**	**Sigma Formation Far Apparent (SFFA_FIL)**
5 (---- 0		1.5 (---- 0.5	60 (CU) 0
RST Near Effective Capture CR (RSCN_RST)		**Sigma Borehole Far Apparent (SBFA_FIL)**	**Tension (TENS)**
45 (---- 0		150 (CU) 0	0 (LBF) 3000
RST Far Effective Capture CR (RSCF_RST)		**RST Sigma Borehole Fluid (SIBF)**	
45 (---- 0		100 (CU) 0	
		RST Porosity (TPHI)	
		0.6 (V/V) 0	
		RST Weighted Inelastic Ratio (WINR_RST)	
		0.4 (---- 0	
		RST Sigma (SIGM)	
		60 (CU) 0	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST−C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No	
BHS	Borehole Status	CASED	
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
DFPC	RST Depth Filter Processing Constant	One	
DFPC_TDTL	RST Depth Filter Processing Constant (TDT−like)	Two	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
	PSPT−A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	

RQL: RSTPro Reservoir Quick Look

BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	

System and Miscellaneous

BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	1.0	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 06−May−2007 10:37

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

Input DLIS Files

DEFAULT	RST_PSP_018LUP	FN:17	PRODUCER	06−May−2007 06:25	4063.3 M	3883.5 M

Output DLIS Files

DEFAULT	RST_PSP_023PUP	FN:22	PRODUCER	06−May−2007 10:37

Schlumberger

Gamma Ray Pass
(Minitron Off)

MAXIS Field Log

Input DLIS Files

DEFAULT	RST_PSP_015LUP	FN:14	PRODUCER	06−May−2007 05:45	4067.4 M	3879.2 M

Output DLIS Files

DEFAULT	RST_PSP_022PUP	FN:21	PRODUCER	06−May−2007 10:35	4067.6 M	3874.3 M

OP System Version: 14C0−302

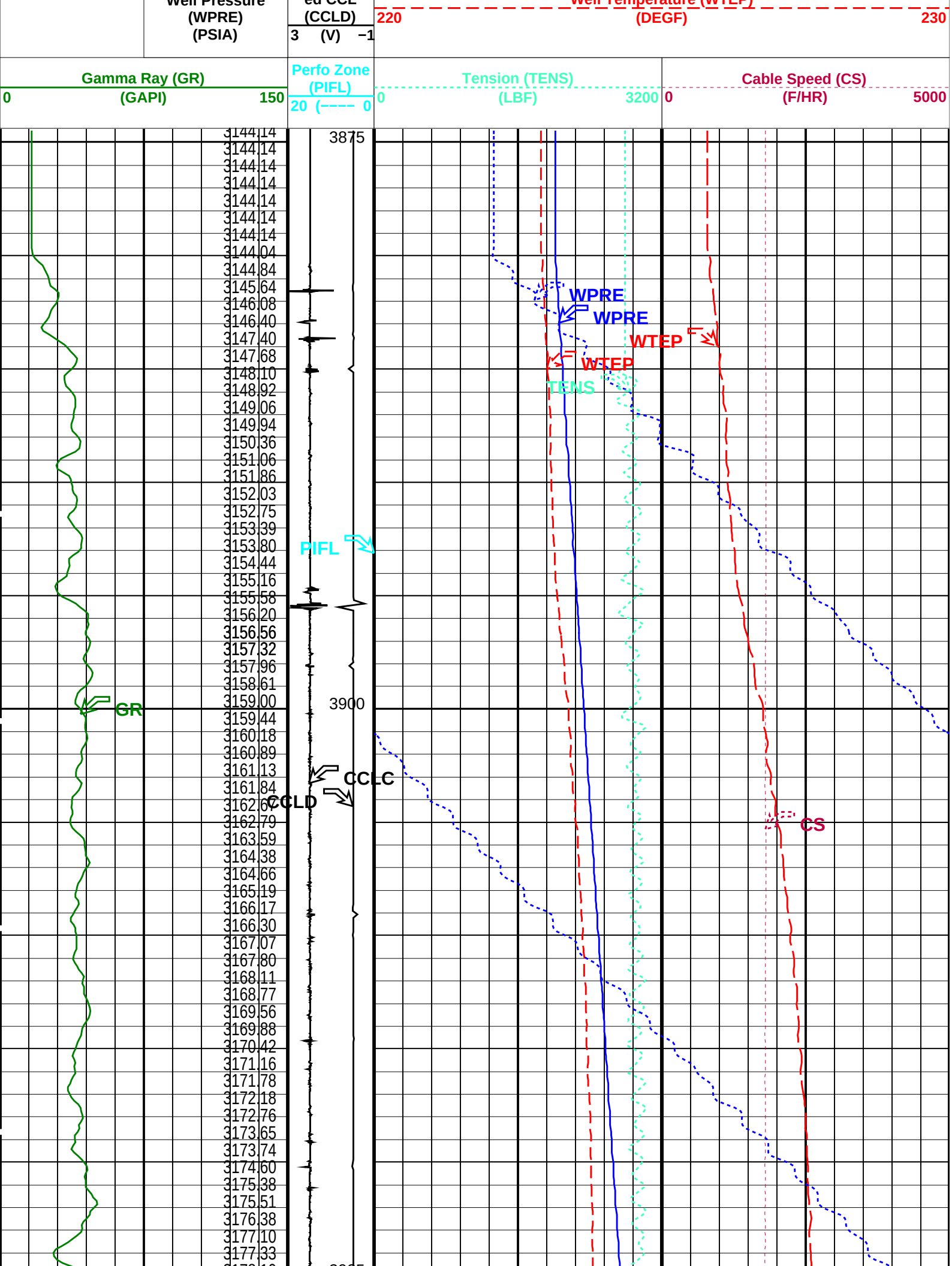
MCM

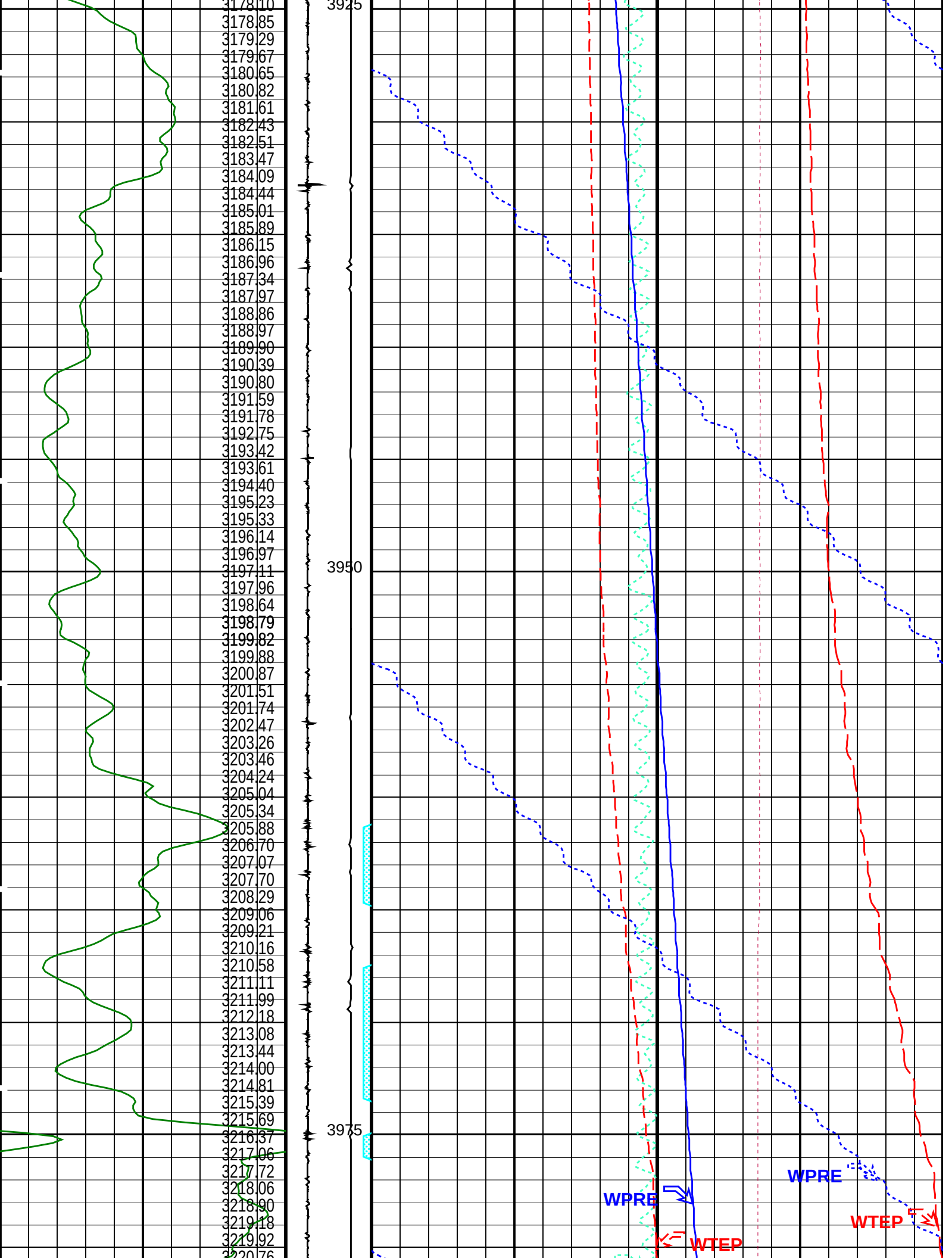
RST−C	14C0−302	PSPT−A/B	14C0−302

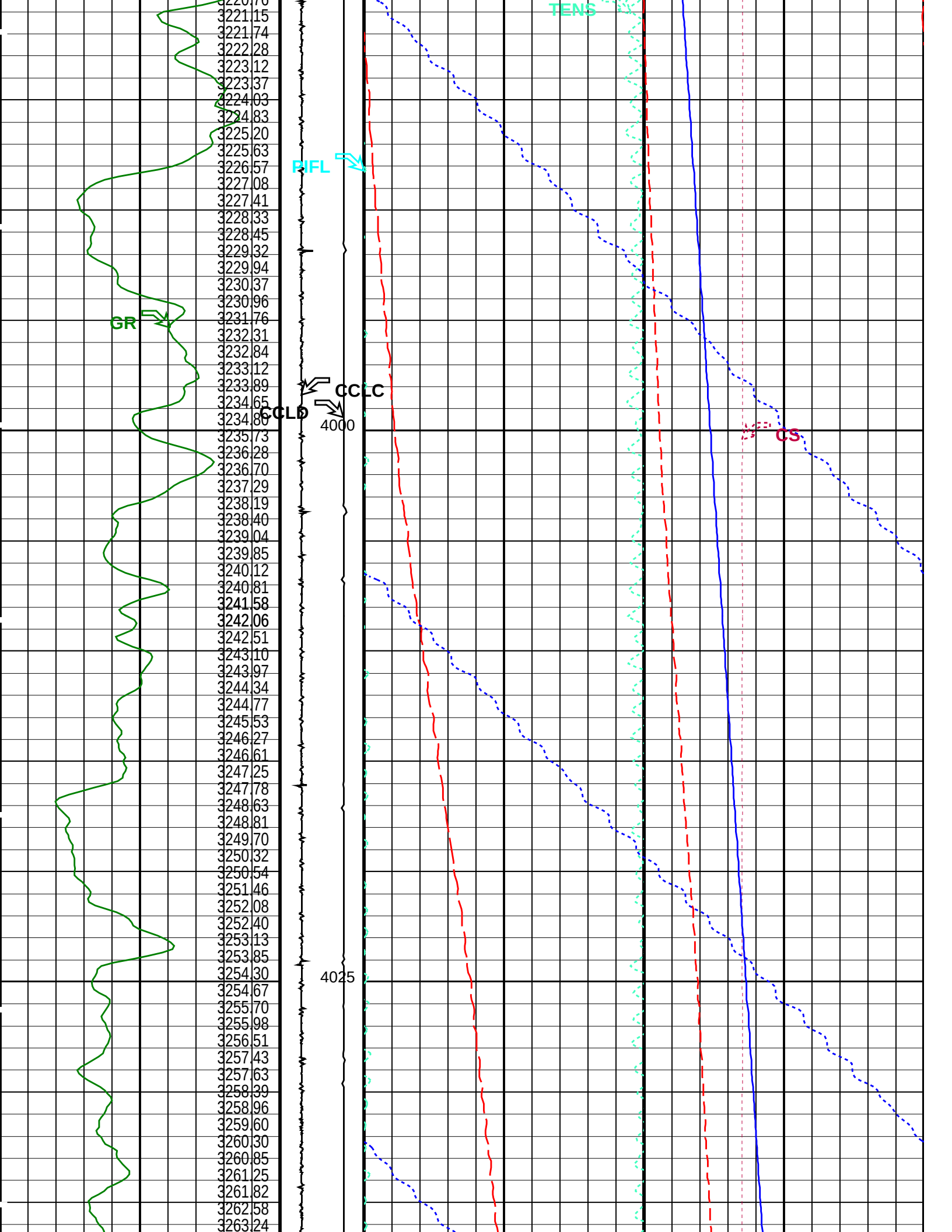
PIP SUMMARY

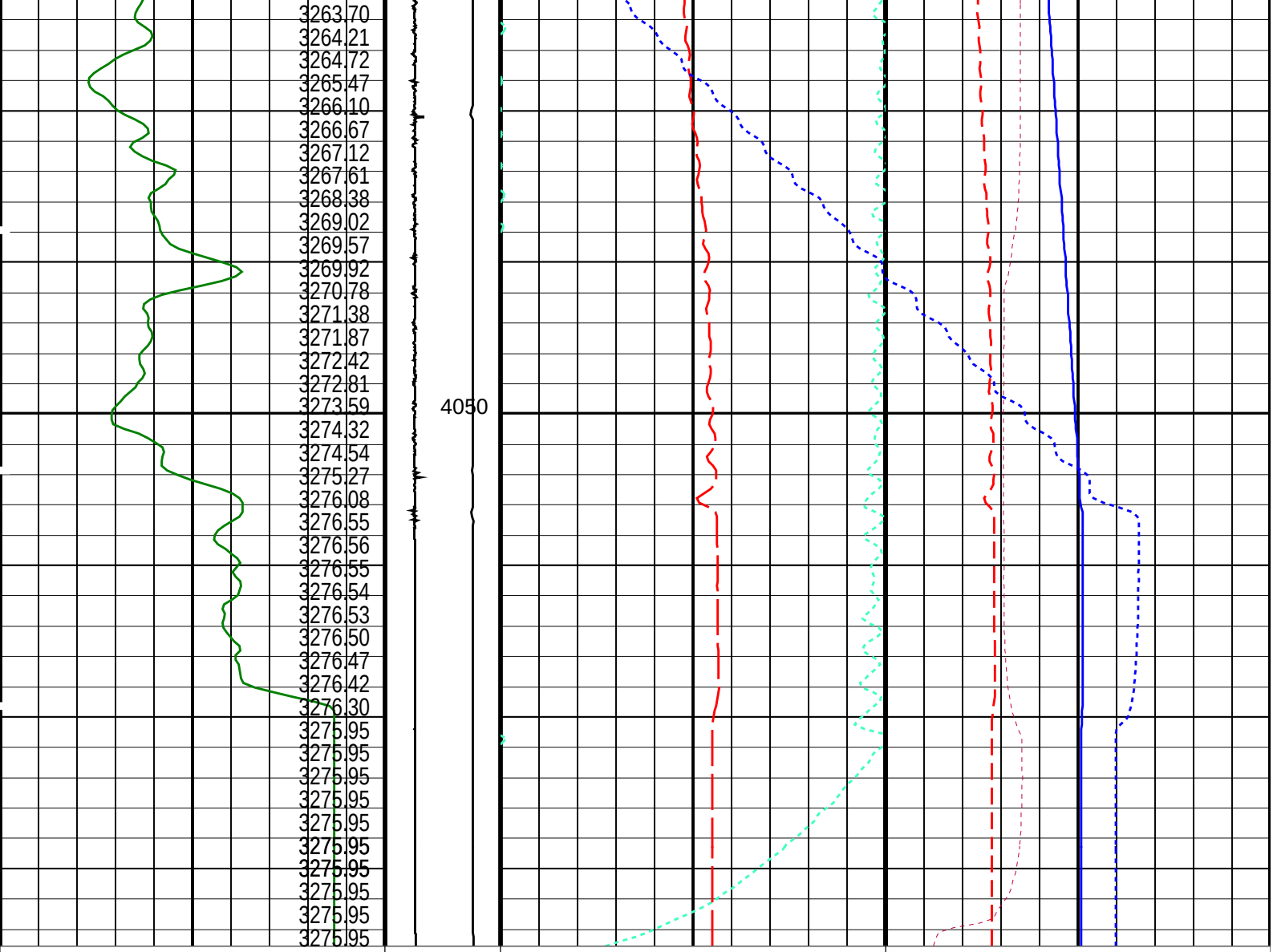
Time Mark Every 60 S

		Amplified Well Pressure (WPRE)	
		0 (PSIA)	20
	Perfo Zone From PERFO_ CURVE to D3T	Well Pressure (WPRE)	
		3050 (PSIA)	3350
	Computed CCL (CCLC)	Well Temperature (WTEP)	
		0 (DEGF)	5
	1 (V) −3		
Well Pressure	Discriminated CCL	Well Temperature (WTEP)	


Well Pressure (WPRE) (PSIA)
ed CCL (CCLD)
3 (V) −1
Well Temperature (WTEP)
220 (DEGF) 230
Gamma Ray (GR)
0 (GAPI) 150
Perfo Zone (PIFL)
20 (---- 0
Tension (TENS)
0 (LBF) 3200
Cable Speed (CS)
0 (F/HR) 5000
3875
3900
WPRE
WPRE
WTEP
WTEP
TENS
PIFL
GR
CCLC
CCLD
CS


3925
3950
3975
WPRE
WTEP
WPRE
WTEP


TENS
RIFL
GR
CCLC
CCLD
4000
CS
4025



Gamma Ray (GR)
0 (GAPI) 150

Perfo Zone (PIFL)
20 (---- 0

Tension (TENS)
0 (LBF) 3200

Cable Speed (CS)
0 (F/HR) 5000

Well Pressure (WPRE) (PSIA)

Discriminated CCL (CCLD)
3 (V) -1

Well Temperature (WTEP)
220 (DEGF) 230

Computed CCL (CCLC)
1 (V) -3

Well Temperature (WTEP)
0 (DEGF) 5

Perfo Zone From PERFO_CURVE to D3T

Well Pressure (WPRE)
3050 (PSIA) 3350

Amplified Well Pressure (WPRE)
0 (PSIA) 20

PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1_1 Vertical Scale: 1:200 Graphics File Created: 06-May-2007 10:35

OP System Version: 14C0-302

MCM

RST−C	14C0−302	PSPT−A/B	14C0−302

Parameters

DLIS Name	Description	Value	
	System and Miscellaneous		
DO	Depth Offset for Playback	0.2	M
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	RST_PSP_015LUP	FN:14	PRODUCER	06−May−2007 05:45	4067.4 M	3879.2 M

Output DLIS Files

DEFAULT	RST_PSP_022PUP	FN:21	PRODUCER	06−May−2007 10:35

Company: **Esso Australia Pty Ltd.**

Schlumberger

Well: **A−10a**
Field: **Cobia**
Rig: **Crane / Prod # 4**
Country: **Australia**

RST − C
Static & Flowing
Sigma − C/O Survey