Schlumberger

Company: EnCana Oil & Gas (USA)

Well: DV08B-23 (H23 4101)

Field: East Douglas Creek

County: Rio Blanco State: Colorado

SPECTROSCOPY GAMMA RAY

County: Rio Blanco
Field: East Douglas Creek
Location: SHL: 1850 FNL 1235 FEL
Well: DV08B-23 (H23 4101)
Company: EnCana Oil & Gas (USA)

Location:			
SHL: 1850 FNL 1235 FEL	Elev.	K.B.	6783.00 ft
BHL: 1850 FNL 1235 FEL		G.L.	6753.00 ft
		D.F.	6783.00 ft

Permanent Datum:	Ground Level	Elev.:	6753.00 f
Log Measured From:	Kelly Bushing	30.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
05-103-11919-00	23	4S	101

Logging Date			04-Jun-2012			
Run Number			1			
Depth Driller			6090.00 ft			
Schlumberger Depth			6090.00 ft			
Bottom Log Interval			6098.00 ft			
Top Log Interval			200.00 ft			
Casing Driller Size @ Depth			9.625 in @ 882.00 ft			
Casing Schlumberger			882 ft			
Bit Size			8.75 in			
Type Fluid In Hole			Water			
MUD	Density	Viscosity	10.2 lbm/gal	53 s		
	Fluid Loss	PH	4.8 cm3	9.2		
	Source of Sample		Active Tank			
RM @ Meas Temp			1.64 ohm.m @ 75 degF			
RMF @ Meas Temp			1.44 ohm.m @ 75 degF			
RMC @ Meas Temp			1.4 ohm.m @ 68 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.47 @ 165	0.37 @ 165		
Max Recorded Temperatures			165 degF			
Circulation Stopped	Time		04-Jun-2012	09:00:00		
Logger on Bottom	Time		04-Jun-2012	11:31:05		
Unit Number	Location:		9102	Vernal		
Recorded By			Curtis Schaaf			
Witnessed By			Joe Beer			

Disclaimer

Contents

11. Tail

Operational Run Summary

Parameter (unit)	1					
Date Log Started	04-Jun-2012					
Time Log Started	11:32:45					
Date Log Finished	04-Jun-2012					
Time Log Finished	16:08:31					
Top Log Interval (ft)	200.00					
Bottom Log Interval (ft)	6098.00					
Total Depth (ft)	6098.00					
Max Hole Deviation (deg)	9.50					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	9102					
Logging Unit Location	Vernal					
Recorded By	Curtis Schaaf					
Witnessed By	Joe Beer					
Service Order Number	BY8P-00035					

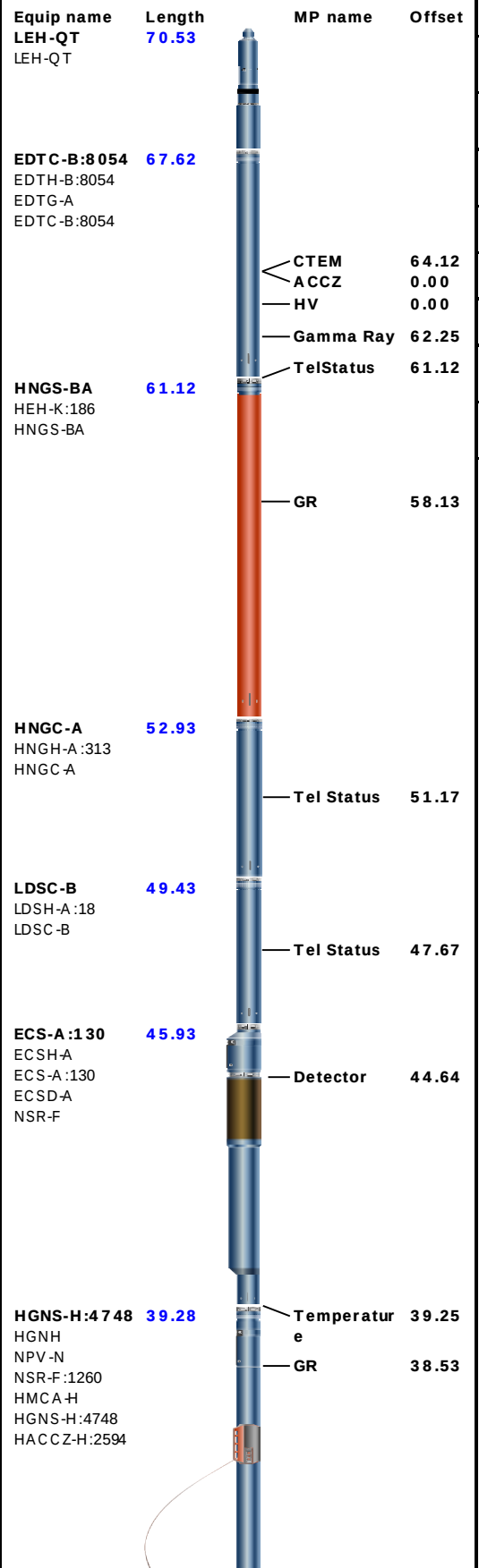
Borehole Fluids

Parameter(unit)	1					
Fluid Type	Water					
Max Recorded Temperatures (degF)	165					
Source of Sample	Active Tank					
Salinity (ppm)	1100					
Density (lbm/gal)	10.2					
Funnel Viscosity (s)	53					
Fluid Loss (cm3)	4.8					
PH	9.2					
Date/Time Circulation Stopped	04-Jun-2012 09:00:00					
Date Logger on Bottom	04-Jun-2012					
Time Logger on Bottom	11:31:05					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degF)	1.64 @ 75					
RMF @ Meas Temp (ohm.m@degF)	1.44 @ 75					
RMC @ Meas Temp (ohm.m@degF)	1.4 @ 68					

(ohm.m@degF)						
RM @ BHT (ohm.m@degF)	0.47 @ 165					
RMF @ BHT (ohm.m@degF)	0.37 @ 165					
RMC @ BHT (ohm.m@degF)	0.46 @ 165					
Total Solid (%)	6					
High Gravity Solids (%)						

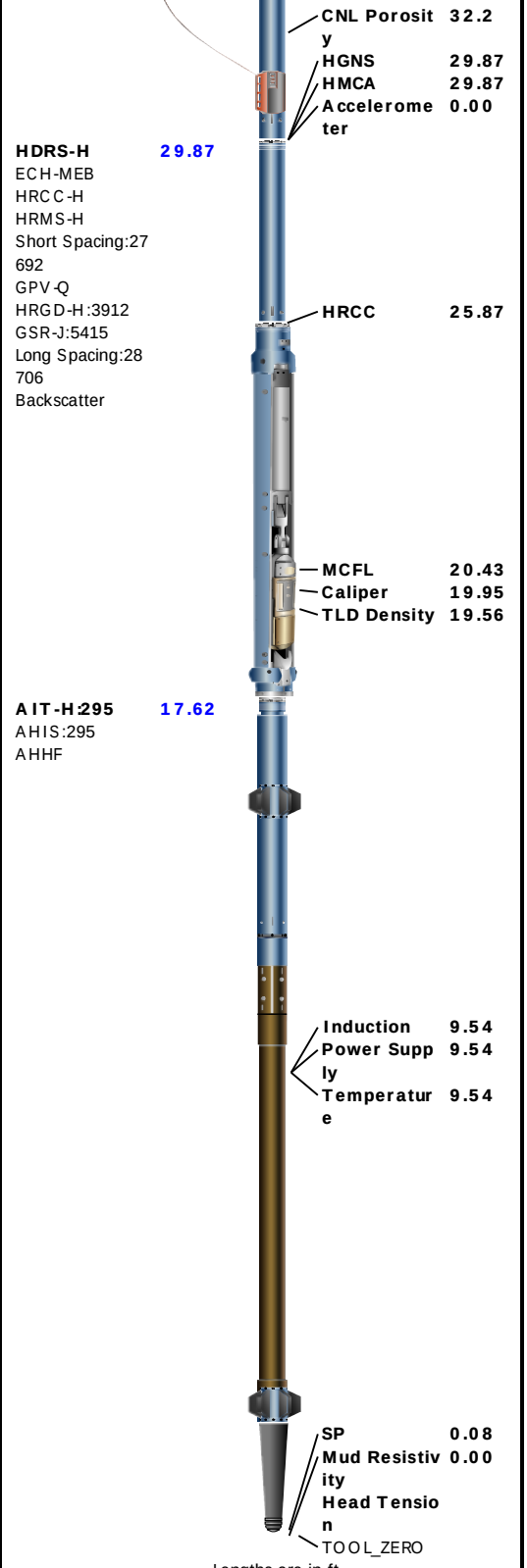
Remarks and Equipment Summary

1: Toolstring



1: Remarks

Tool string run as per Tool Sketch
Tool run eccentralized using 2 x 1" standoffs and bowspring
First run in hole, full depth procedures followed (see Depth Summary)
Maximum temperature of 165F recorded by HGNS cartridge
Maximum hole deviation 9.5deg
MATRIX: Sandstone, DENSITY: 2.68 g/cc
Hole size correction applied to neutron tool
Cement hole volume calculated using future casing diameter of 4.5"
Tool string required maximum logging speed of 1800 ft/hr



Lengths are in ft
Maximum Outer Diameter = 5.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	1		
Conveyance Type	Wireline		
Log Sequence	First Run in Hole		
Stretch Correction (ft)	4.88		
Rig Type	Land		
Depth Remark Parameters	1		
Depth Remark 1	All Schlumberger Depth procedures followed		
Depth Remark 2	IDW used as primary depth measurement device		

Depth Remark 3	Z-chart used as secondary depth reference		
Depth Remark 4	Depth correction applied to main pass via WFDD		
Depth Measuring Device	**1**		
Type	IDW-B		
Serial Number	6122		
Calibration Date	11-Oct-2011		
Calibrator Serial Number	33		
Calibration Cable Type	7-46 AXS		
Wheel Correction 1	-6		
Wheel Correction 2	-5		
Tension Device	**1**		
Type	CMTD-B/A		
Serial Number	119		
Calibration Date	26-May-2012		
Calibrator Serial Number	1002518		
Calibration Points	10		
Calibration RMS	14		
Calibration Peak Error	20		
Logging Cable	**1**		
Type	7-46A-XS		
Serial Number	71425		
Logging Cable Length (ft)	24000.00		

1

MAIN PASS, 5 INCH

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Software Version

Acquisition System	Version
MaxWell	3.0.9609.0
Application Patch	SP-20120409-3.0.9609.1919
	EXP_APL-ADT-3.0.9609.1558
	EXP_APL-OPElevation-3.0.9609.1966

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	3.0.9609.1919

Tool Elements	Description	Software Version	Firmware Version
HNGS-BA	HNGS Sonde Element	3.0.9609.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Log[4]:Up	Up	234.78 ft	6113.73 ft	04-Jun-2012 1:10:46 PM	04-Jun-2012 3:37:35 PM	0.00 ft	

All depths are referenced to toolstring zero

Log

1: Log[4]:Up 0E1519BF-BEC1-43BD-A001-C00B950669B8

Description: HNGS Basic Format: Log (HNGS Basic) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 04-Jun-2012 18:32:49

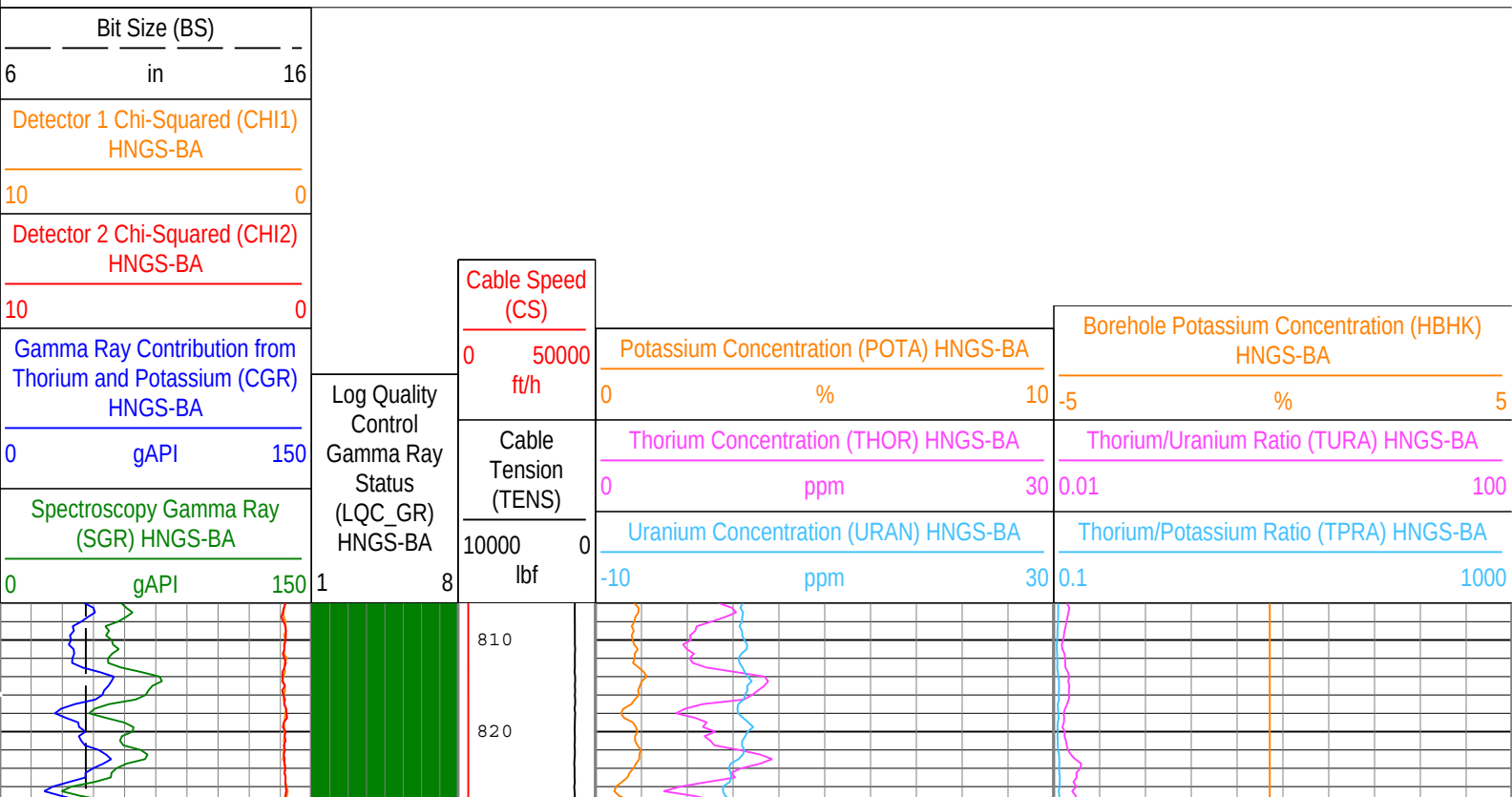
Channel	Source	Sampling

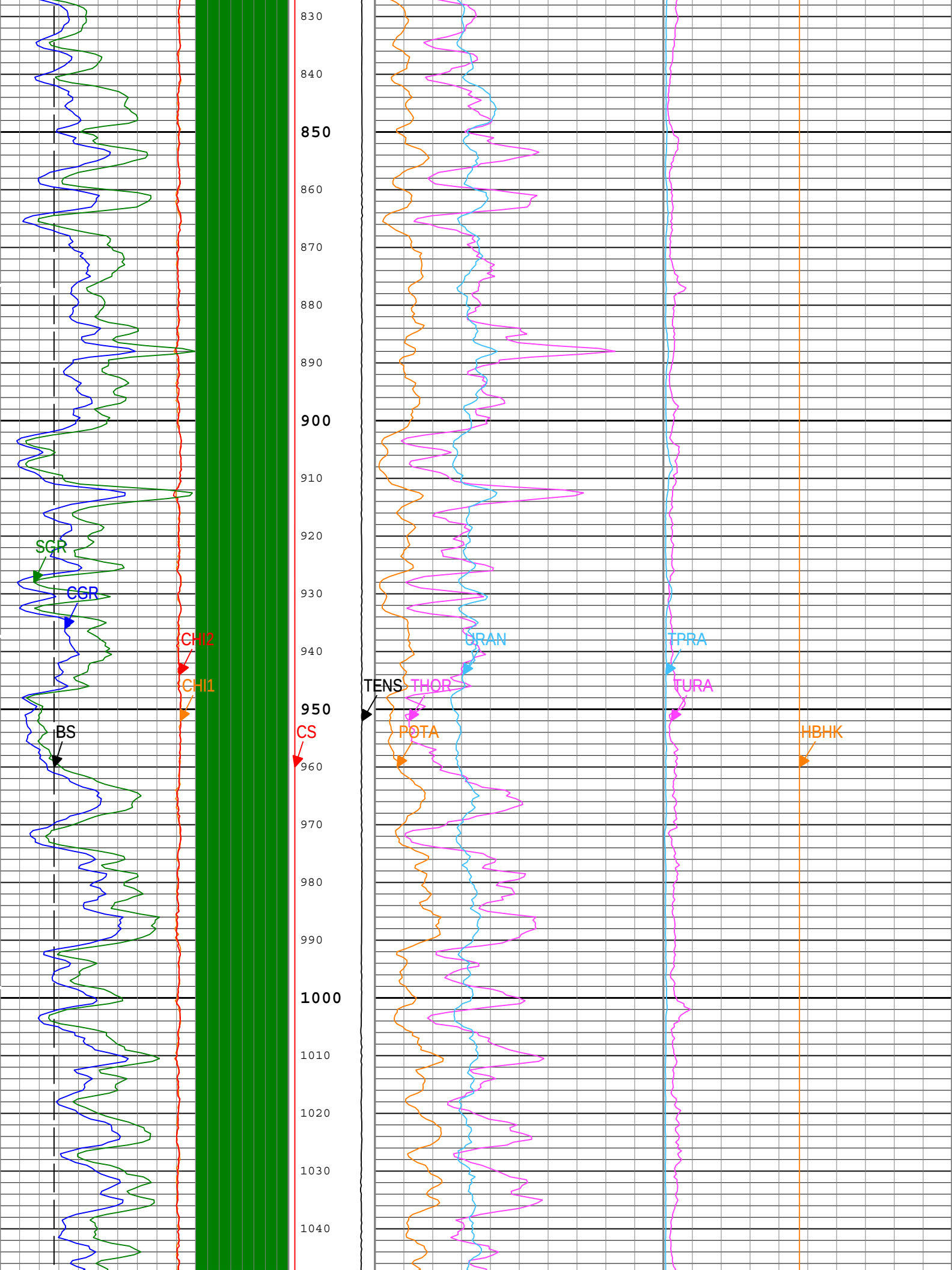
BS	Borehole	6in
CGR	HNGS-BA:HNGS-BA:HNGS-BA	6in
CHI1	HNGS-BA:HNGS-BA:HNGS-BA	6in
CHI2	HNGS-BA:HNGS-BA:HNGS-BA	6in
CS	WLWorkflow	6in
HBHK	HNGS-BA:HNGS-BA:HNGS-BA	6in
LQC_GR	HNGS-BA:HNGS-BA:HNGS-BA	6in
POTA	HNGS-BA:HNGS-BA:HNGS-BA	6in
SGR	HNGS-BA:HNGS-BA:HNGS-BA	6in
TENS	WLWorkflow	6in
THOR	HNGS-BA:HNGS-BA:HNGS-BA	6in
TIME_1900	WLWorkflow	0.1in
TPRA	HNGS-BA:HNGS-BA:HNGS-BA	6in
TURA	HNGS-BA:HNGS-BA:HNGS-BA	6in
URAN	HNGS-BA:HNGS-BA:HNGS-BA	6in

TIME_1900 - Time Marked every 60.00 (s)

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

1 - CartHwStatus - Cartridge Hardware Status :	Cartridge Hardware: Normal	Cartridge Hardware: Warning
	Cartridge Hardware: Error	
2 - CartTempStatus - Cartridge Temperature Status :	Cartridge Temperature < 150 ºC	150 ºC <= Cartridge Temperature < 175 ºC
	Cartridge Temperature >= 175 ºC	
3 - Det1TempStatus - Detector 1 Temperature Status :	Detector 1 Temperature < 50 ºC	50 ºC <= Detector 1 Temperature < 80 ºC
	Detector 1 Temperature >= 80 ºC	
4 - Det2TempStatus - Detector 2 Temperature Status :	Detector 2 Temperature < 50 ºC	50 ºC <= Detector 2 Temperature < 80 ºC
	Detector 2 Temperature >= 80 ºC	
5 - Det1CtrlLoopStatus - Detector 1 Control Loop Status :	Detector 1 Control Loop: Normal	Detector 1 Control Loop: Warning
	Detector 1 Control Loop: Error	
6 - Det2CtrlLoopStatus - Detector 2 Control Loop Status :	Detector 2 Control Loop: Normal	Detector 2 Control Loop: Warning
	Detector 2 Control Loop: Error	
7 - Det1ChiSqrdStatus - Detector 1 Chi Squared Status :	Detector 1 Chi Squared <= 3.0	Detector 1 Chi Squared > 3.0
8 - Det2ChiSqrdStatus - Detector 2 Chi Squared Status :	Detector 2 Chi Squared <= 3.0	Detector 2 Chi Squared > 3.0

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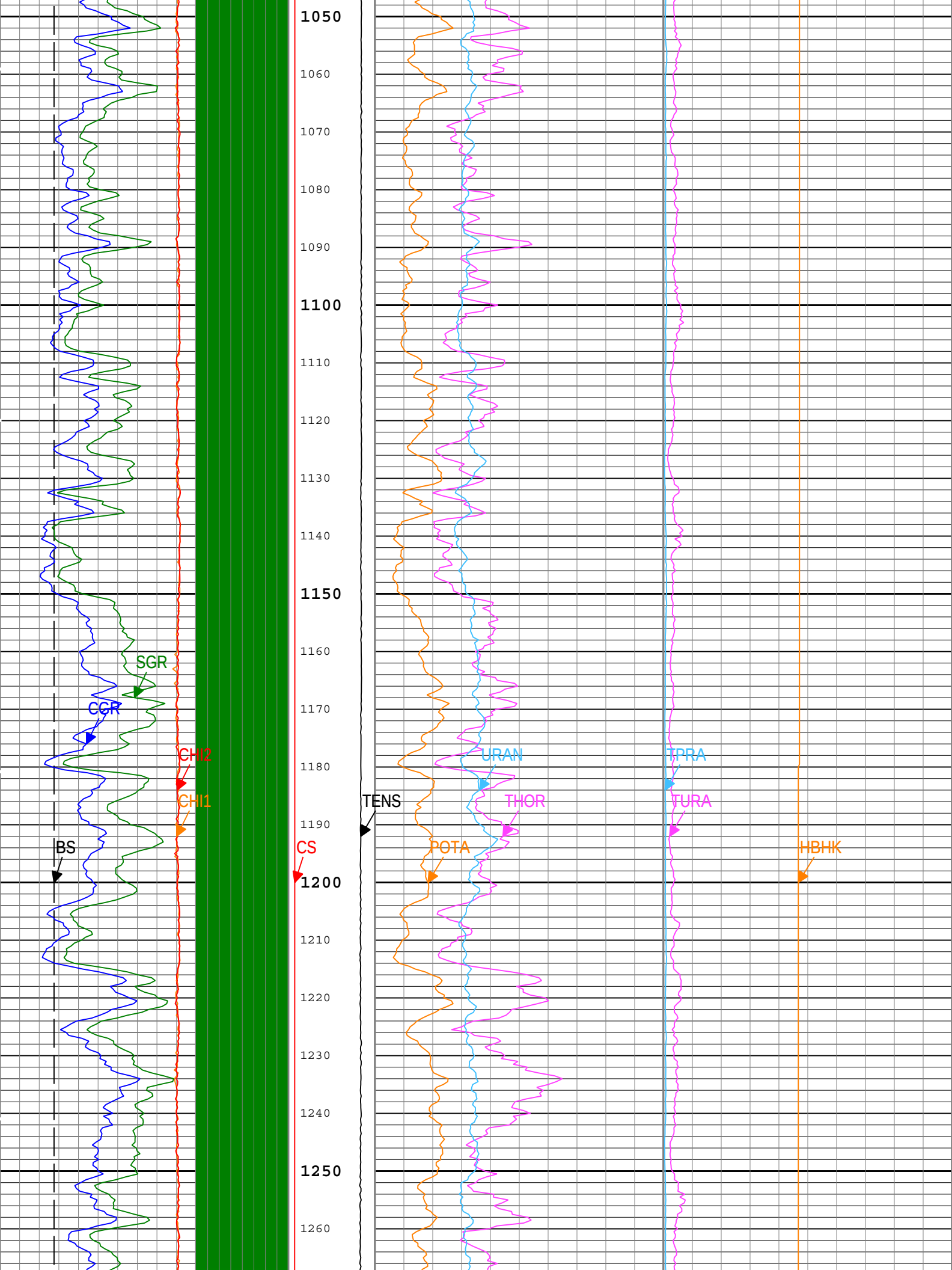
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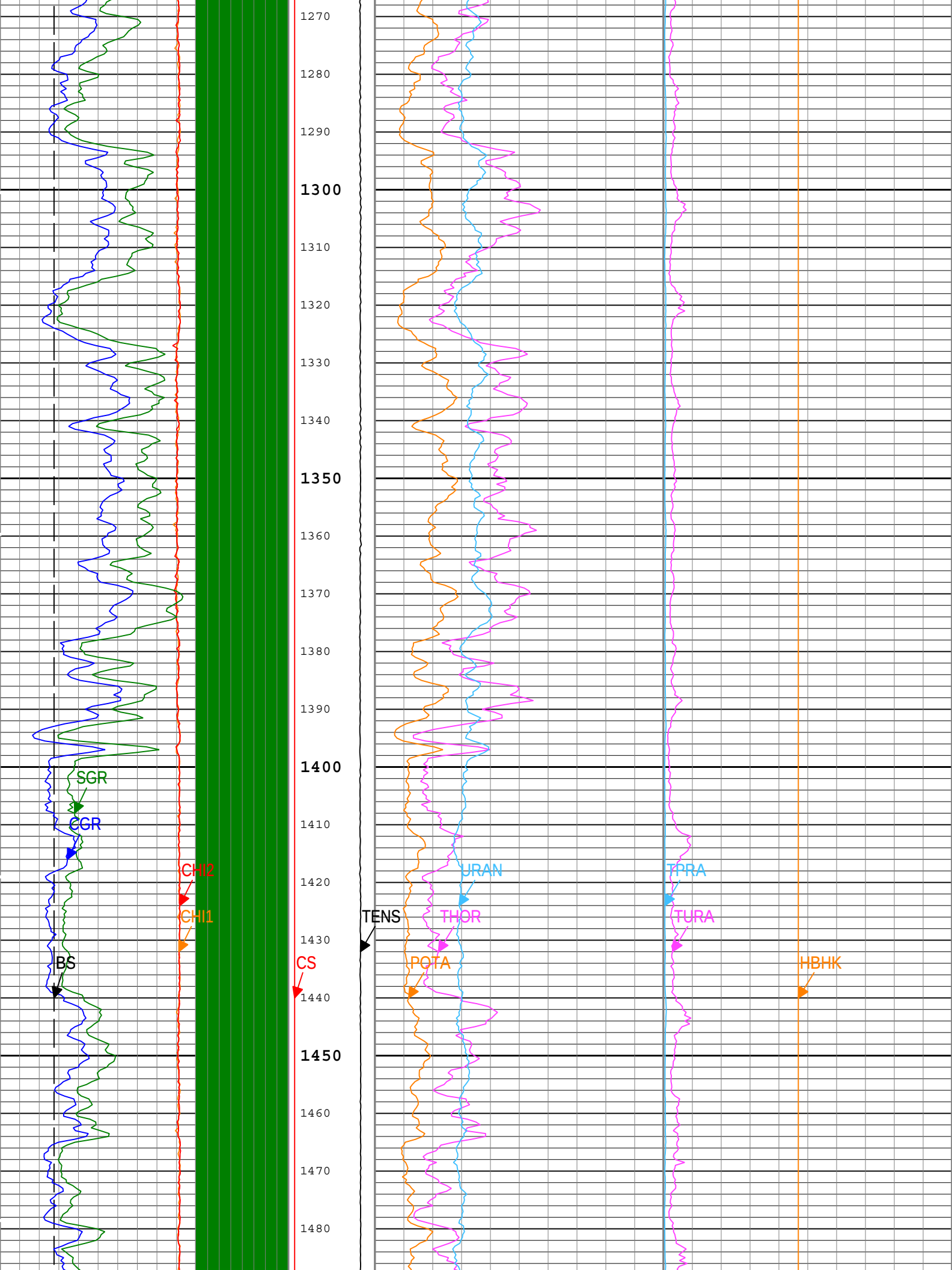
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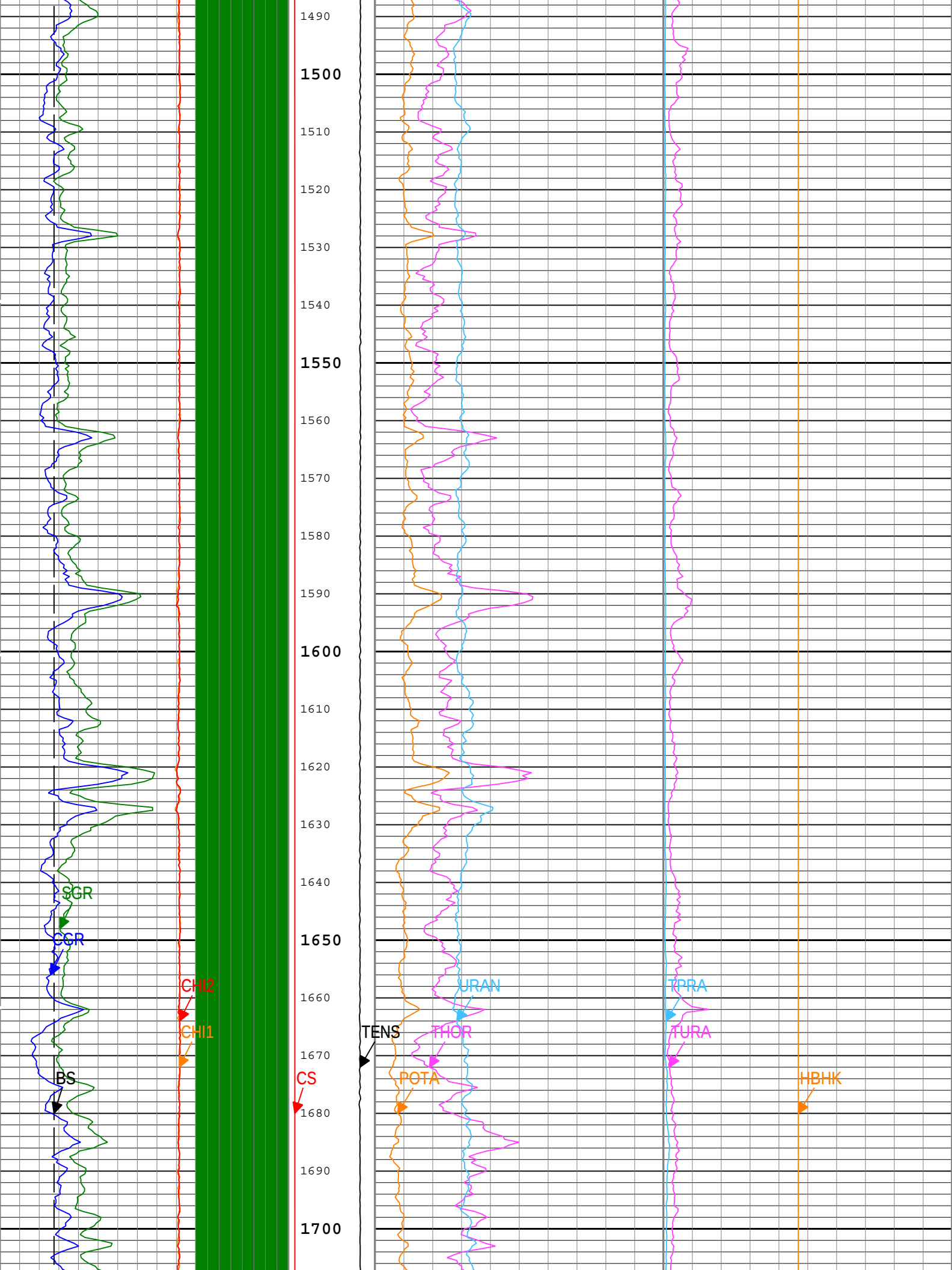
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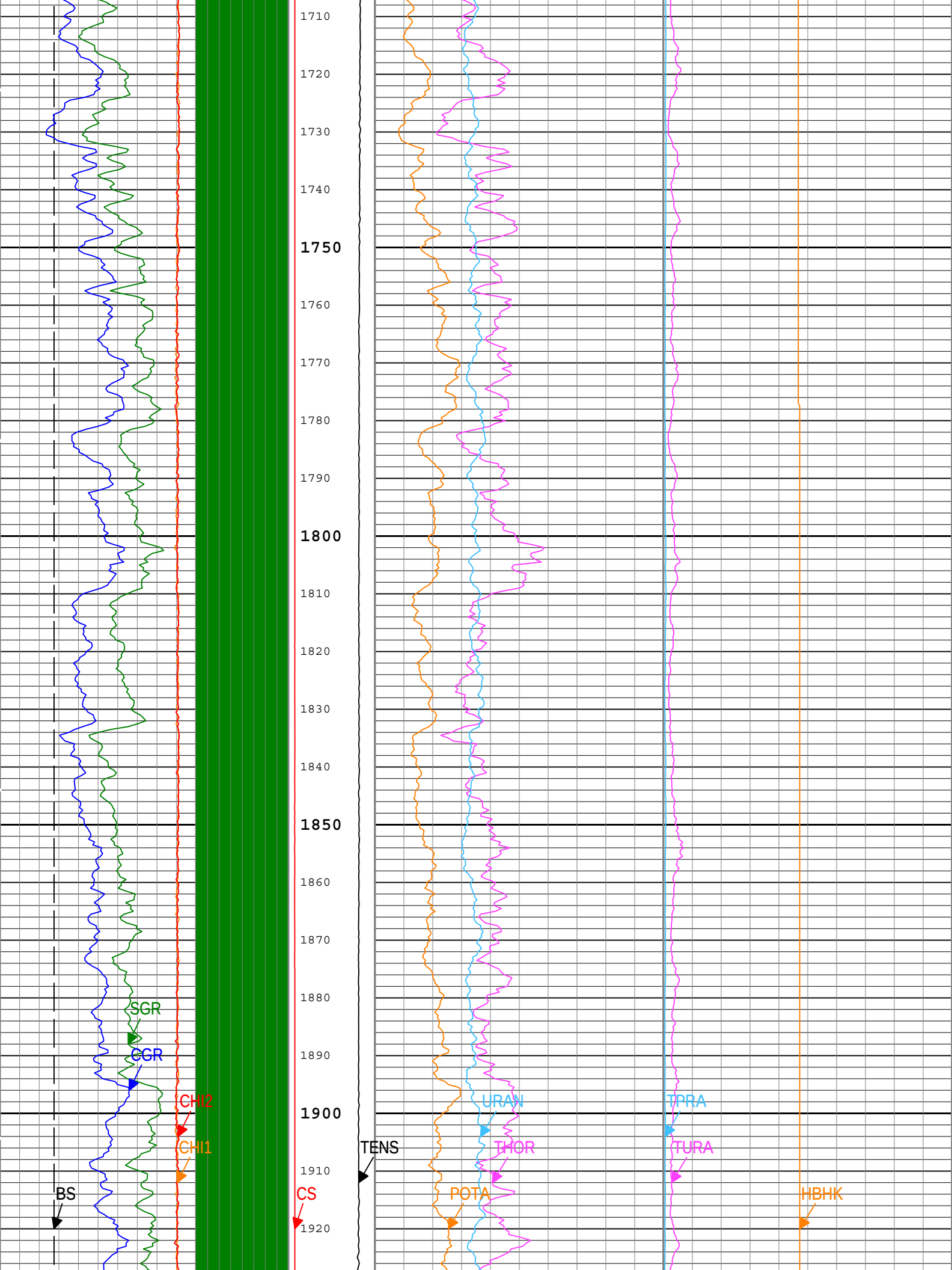
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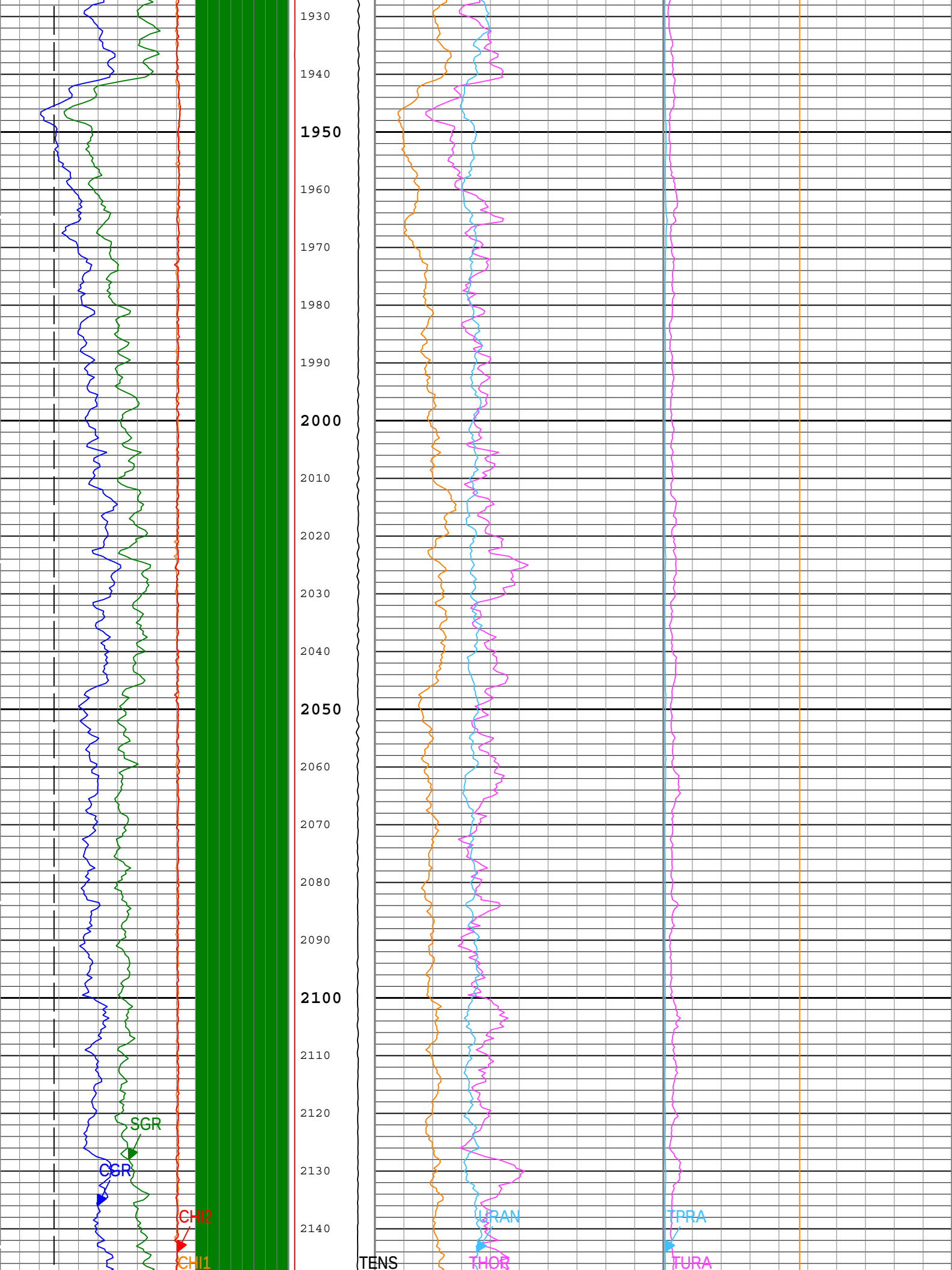
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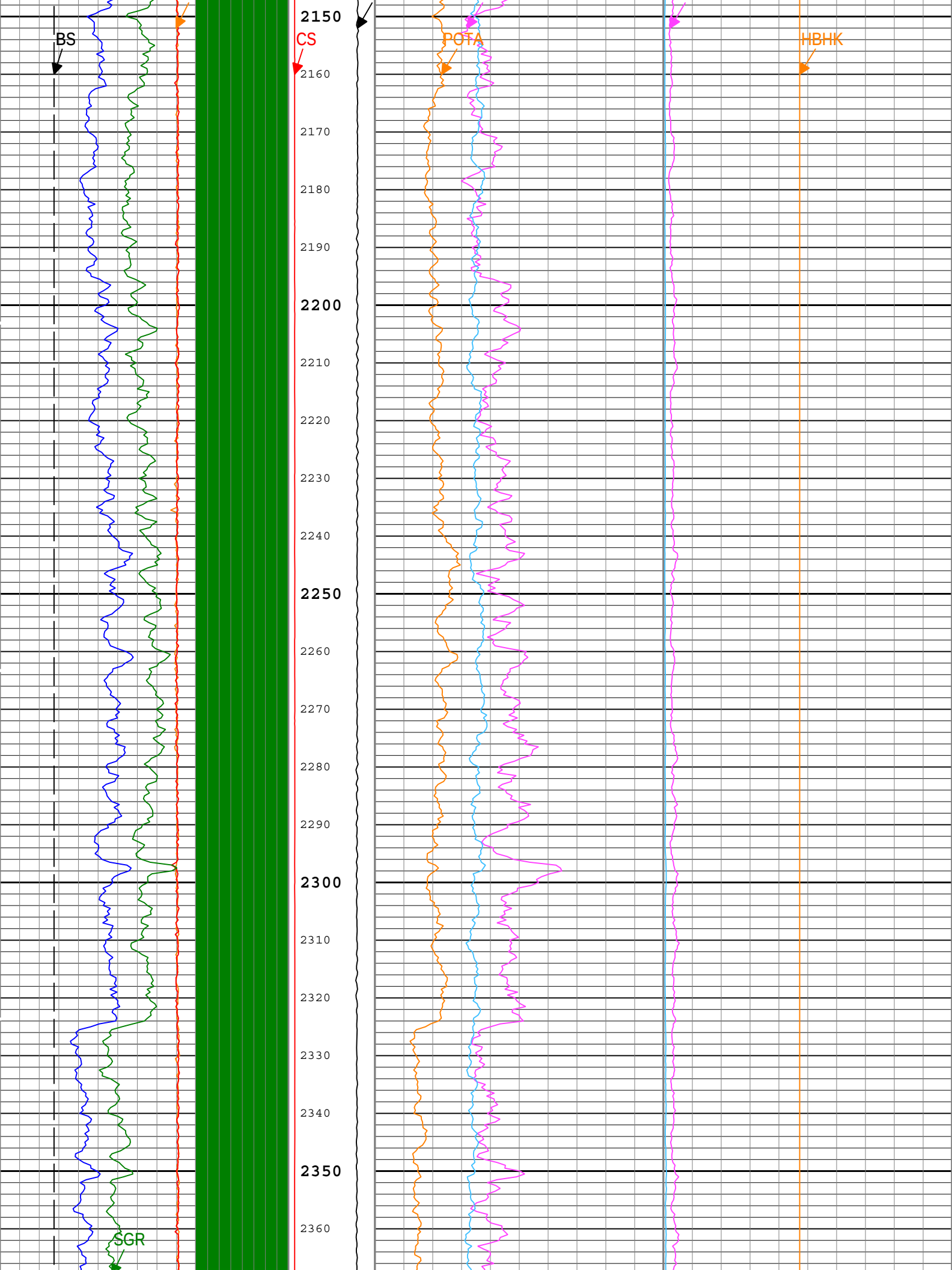
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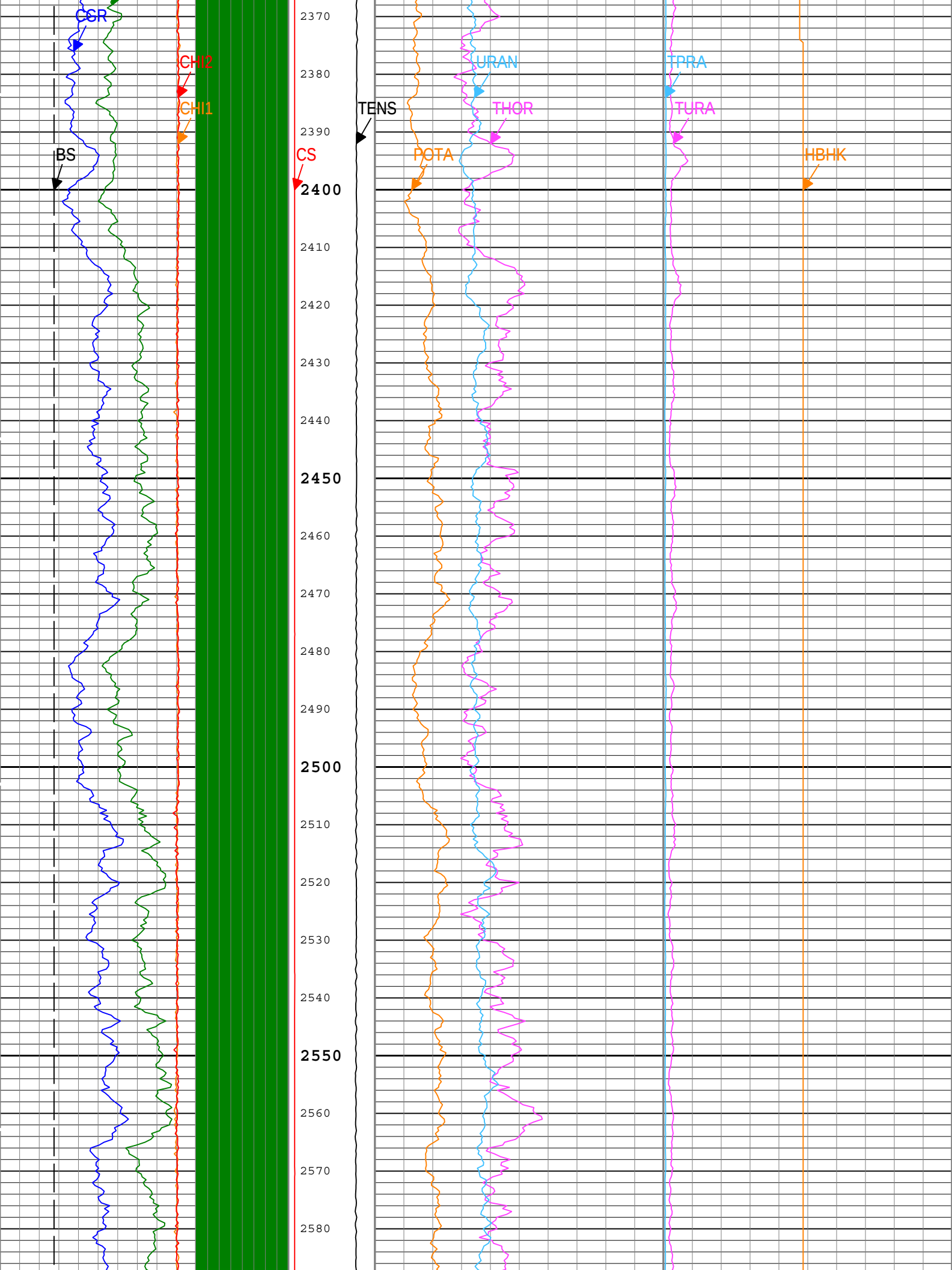
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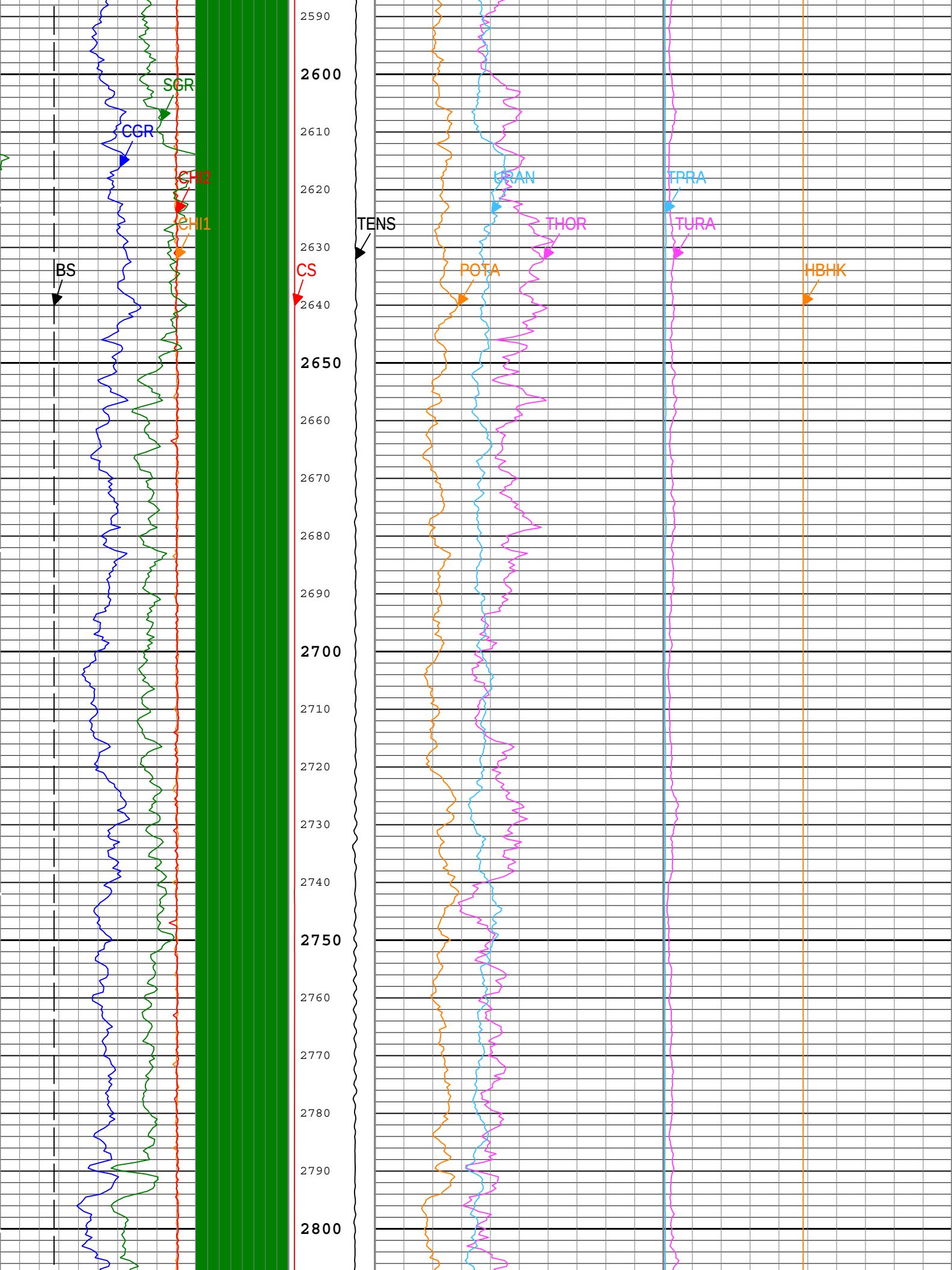
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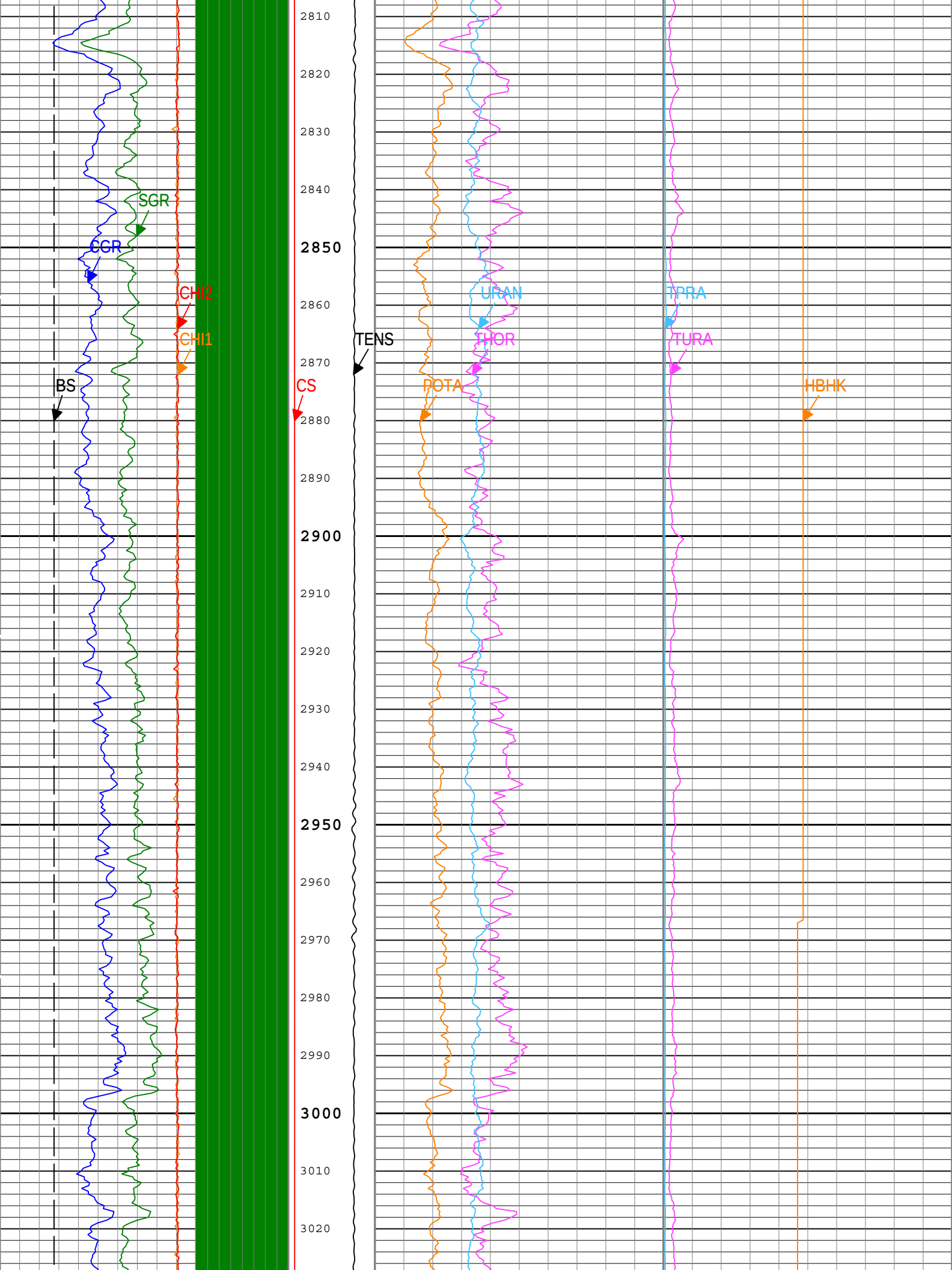
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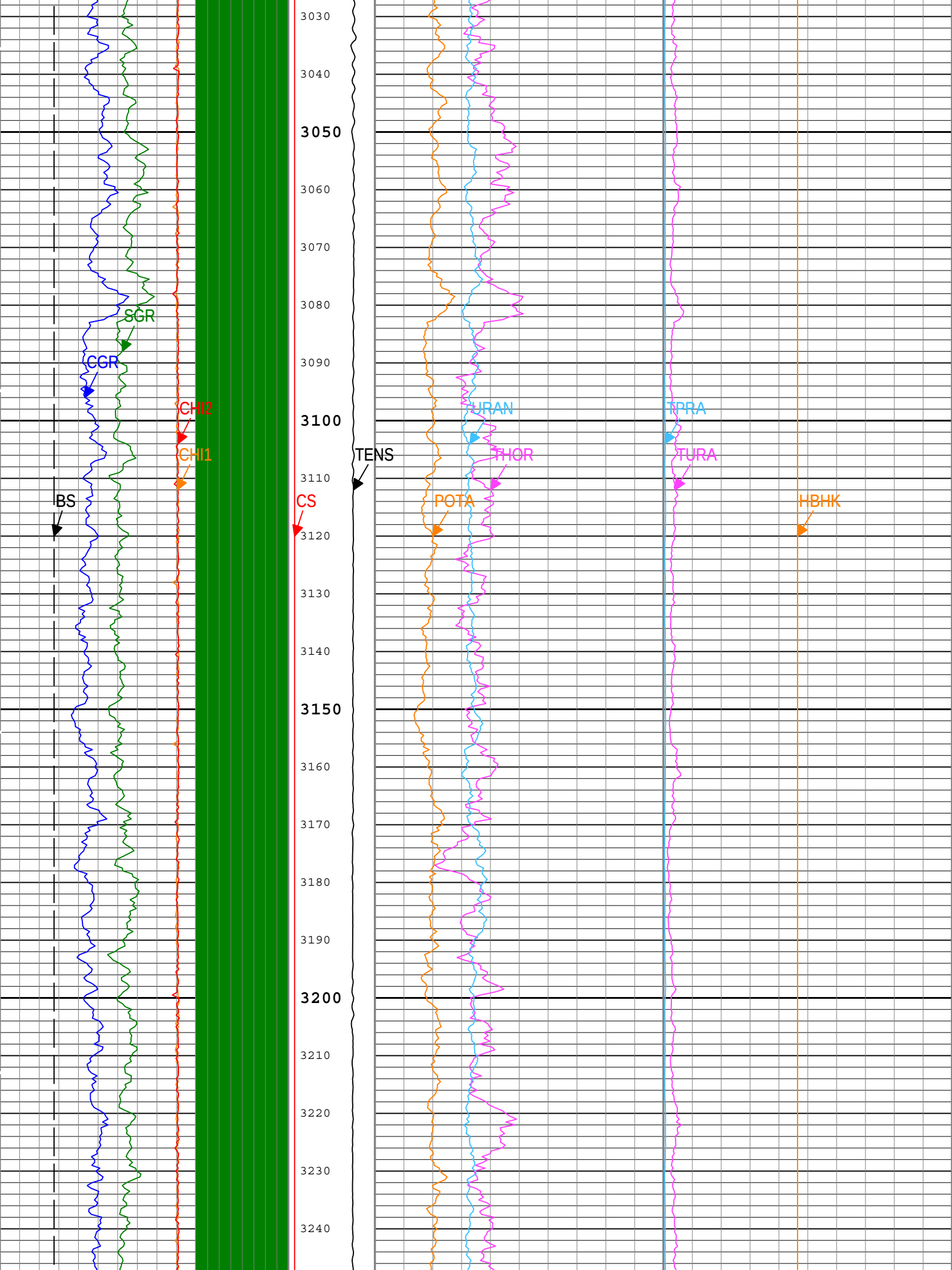
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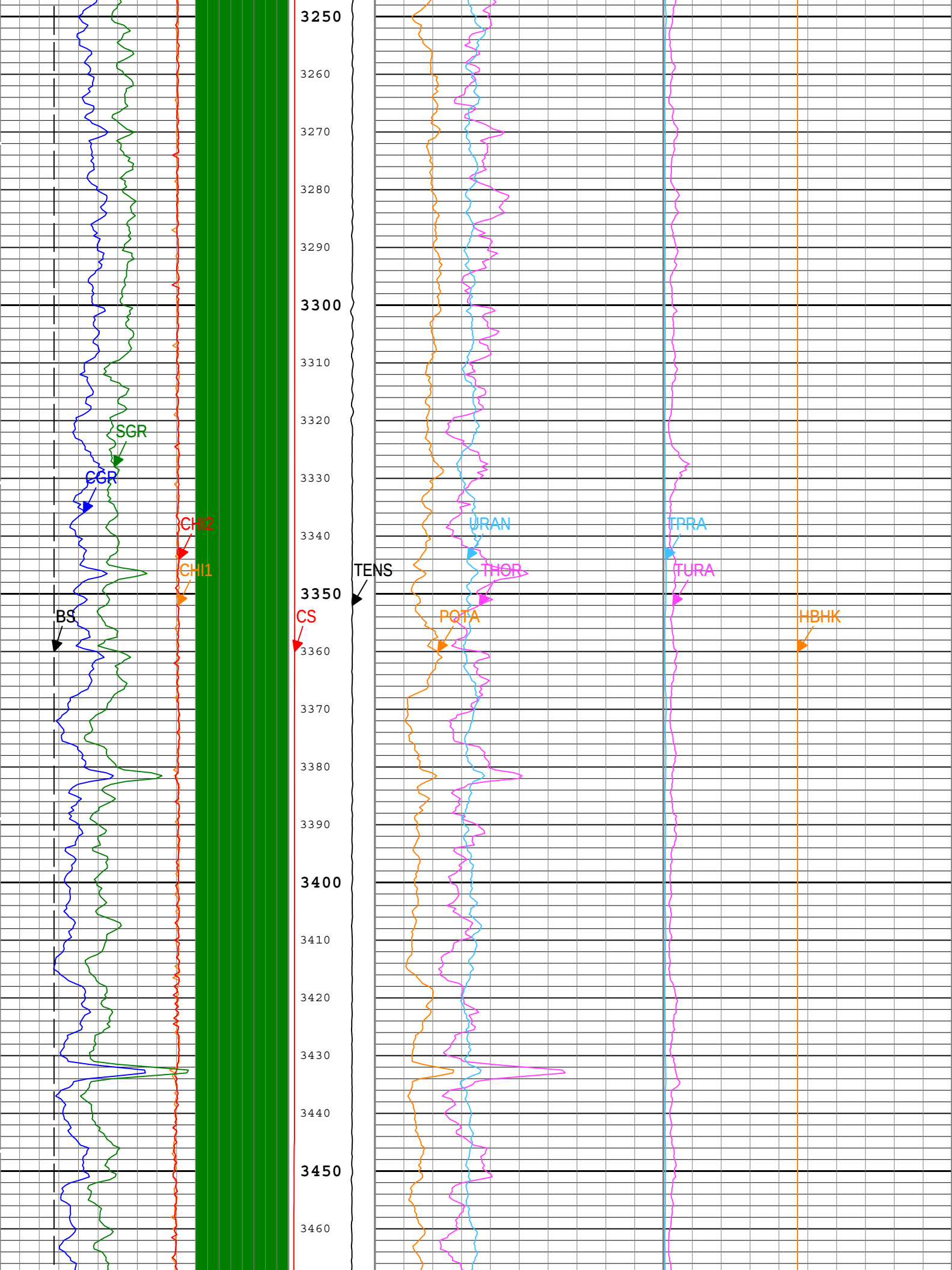
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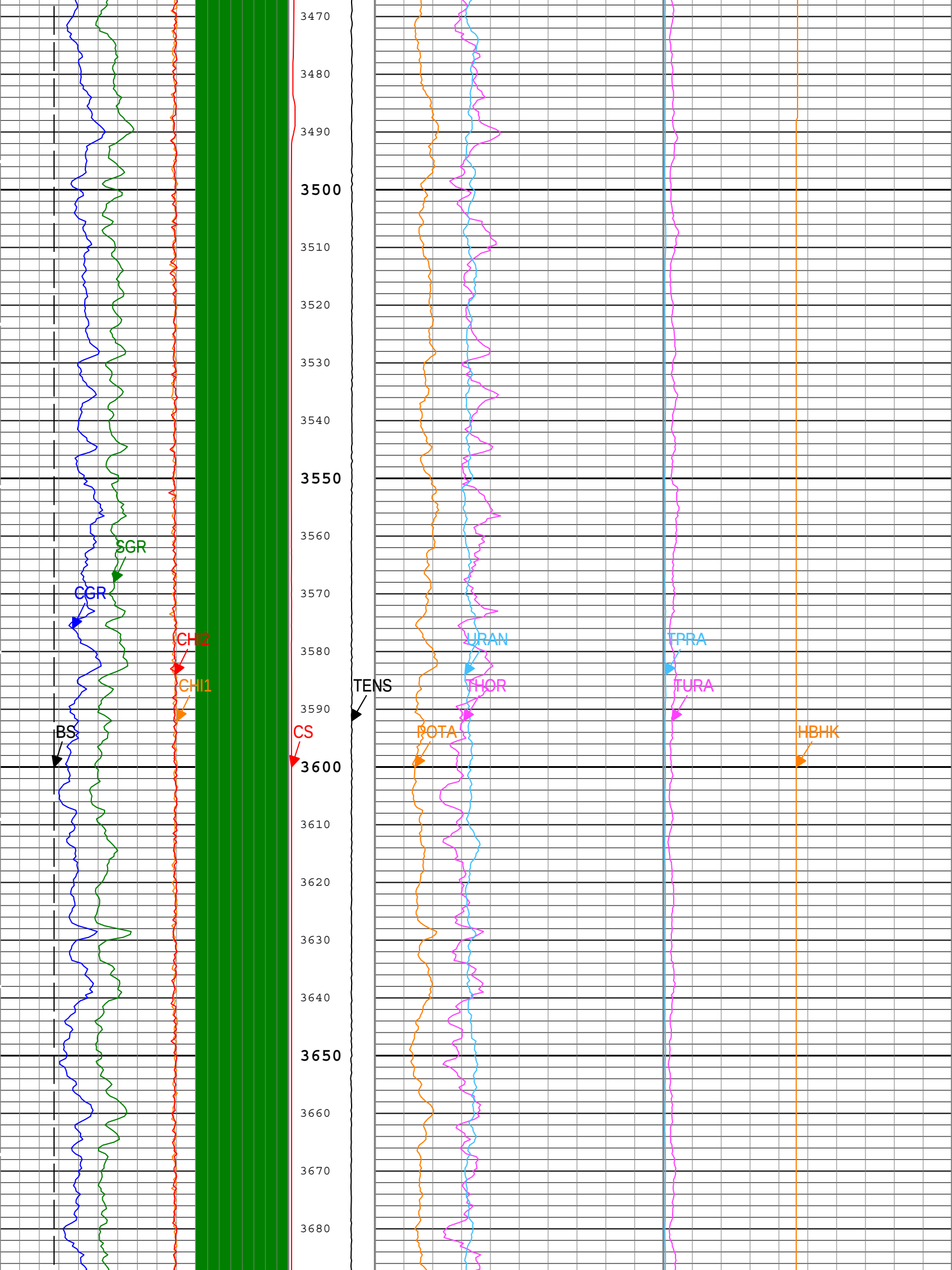
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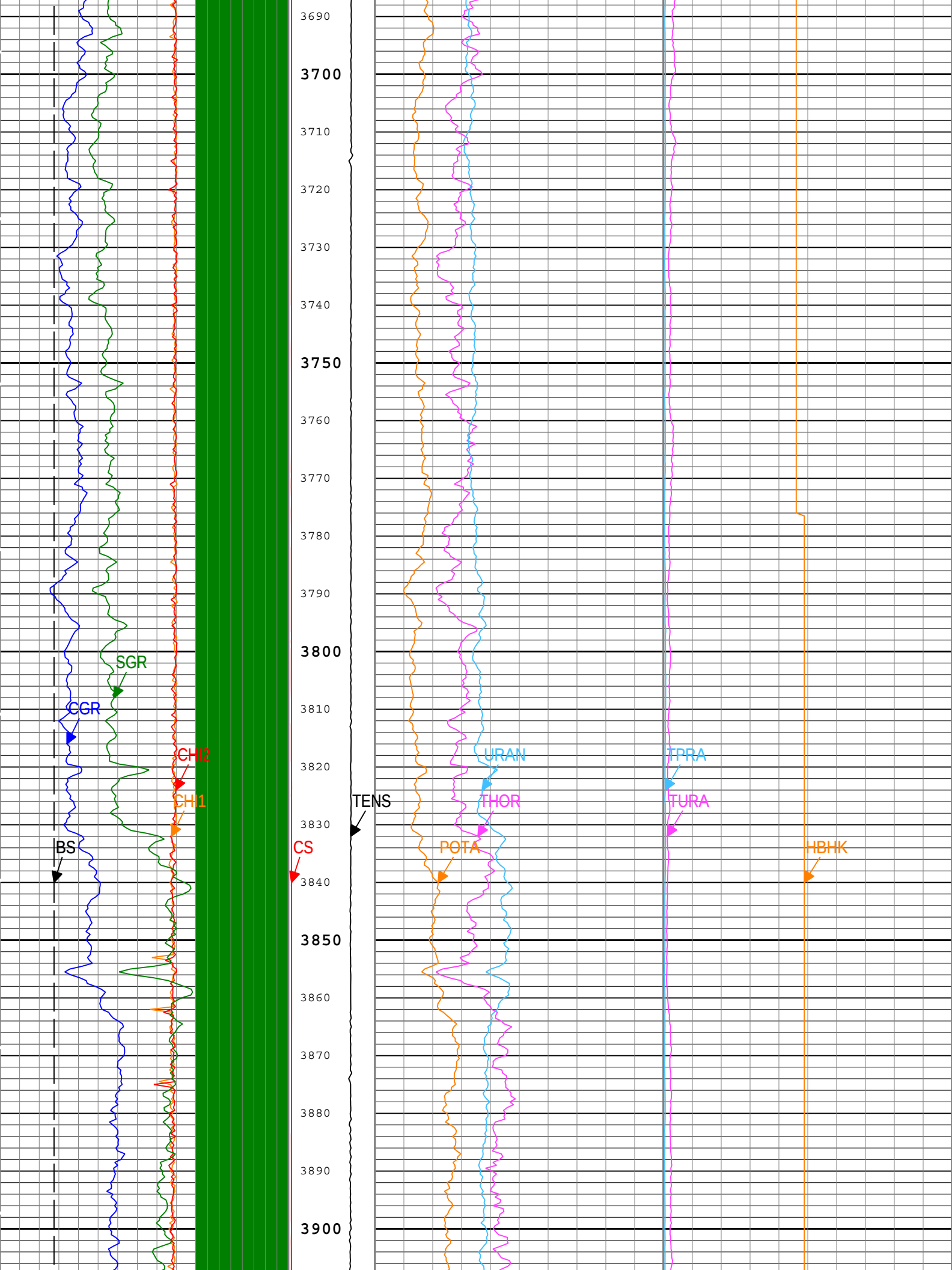
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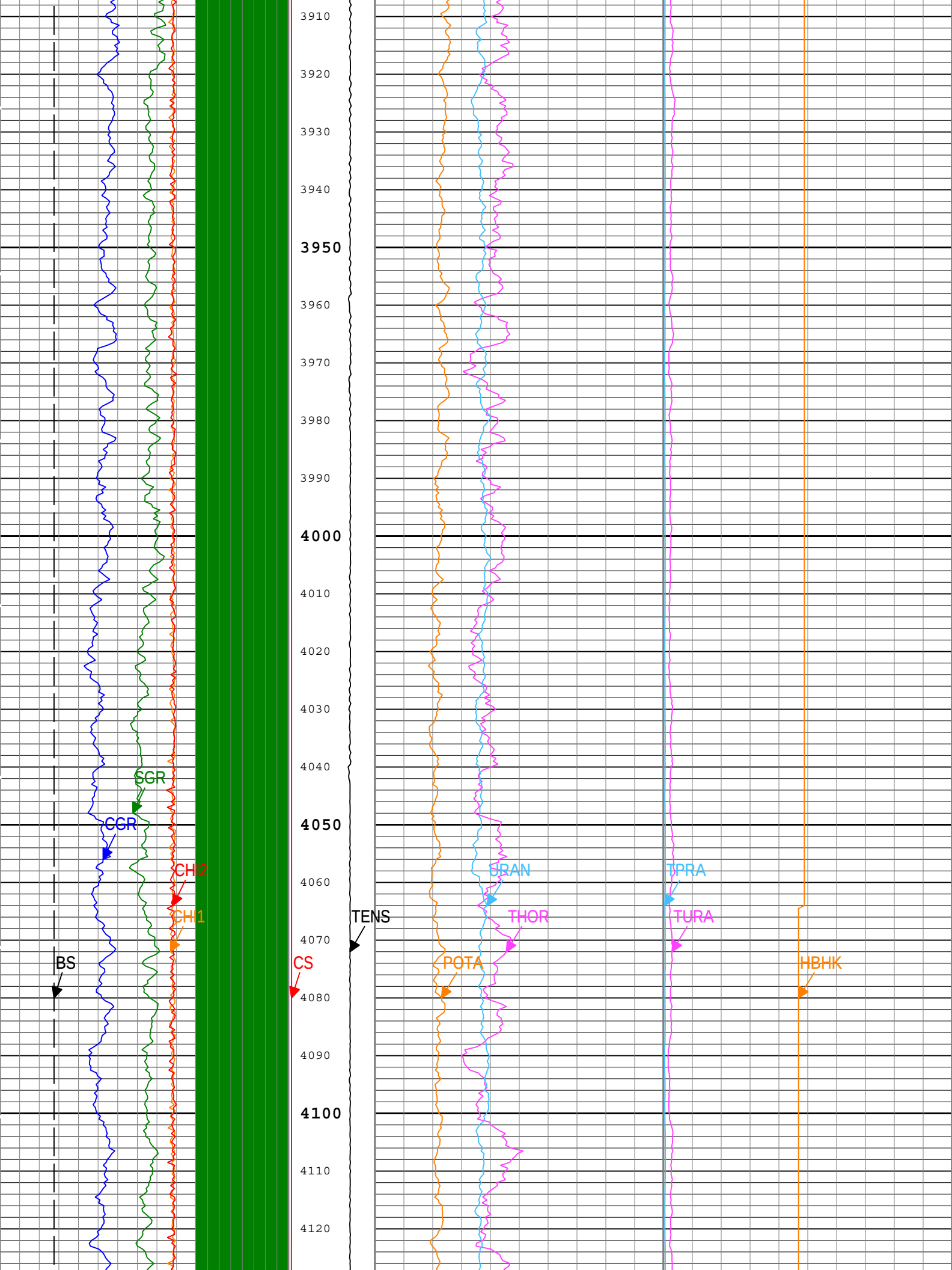
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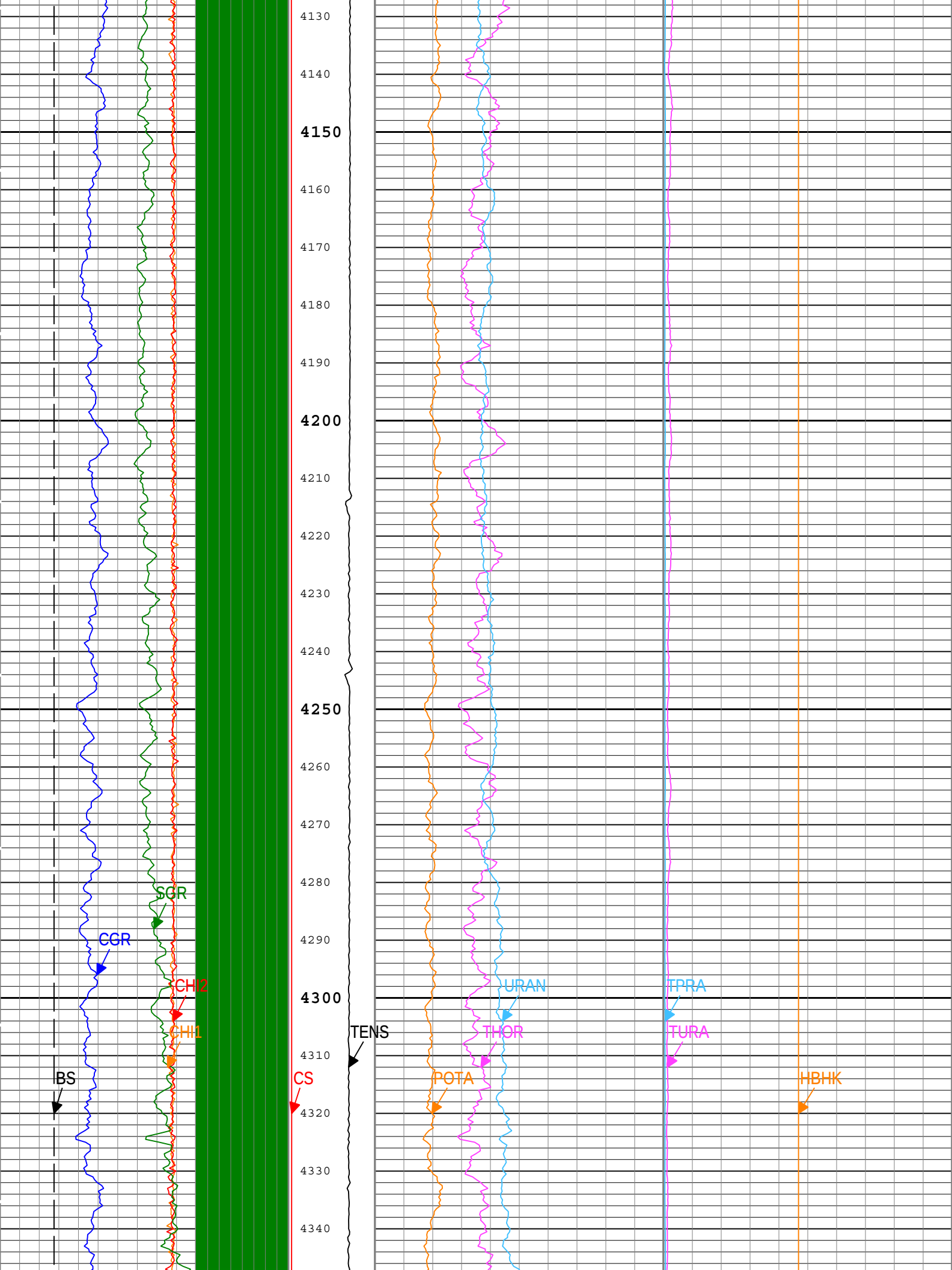
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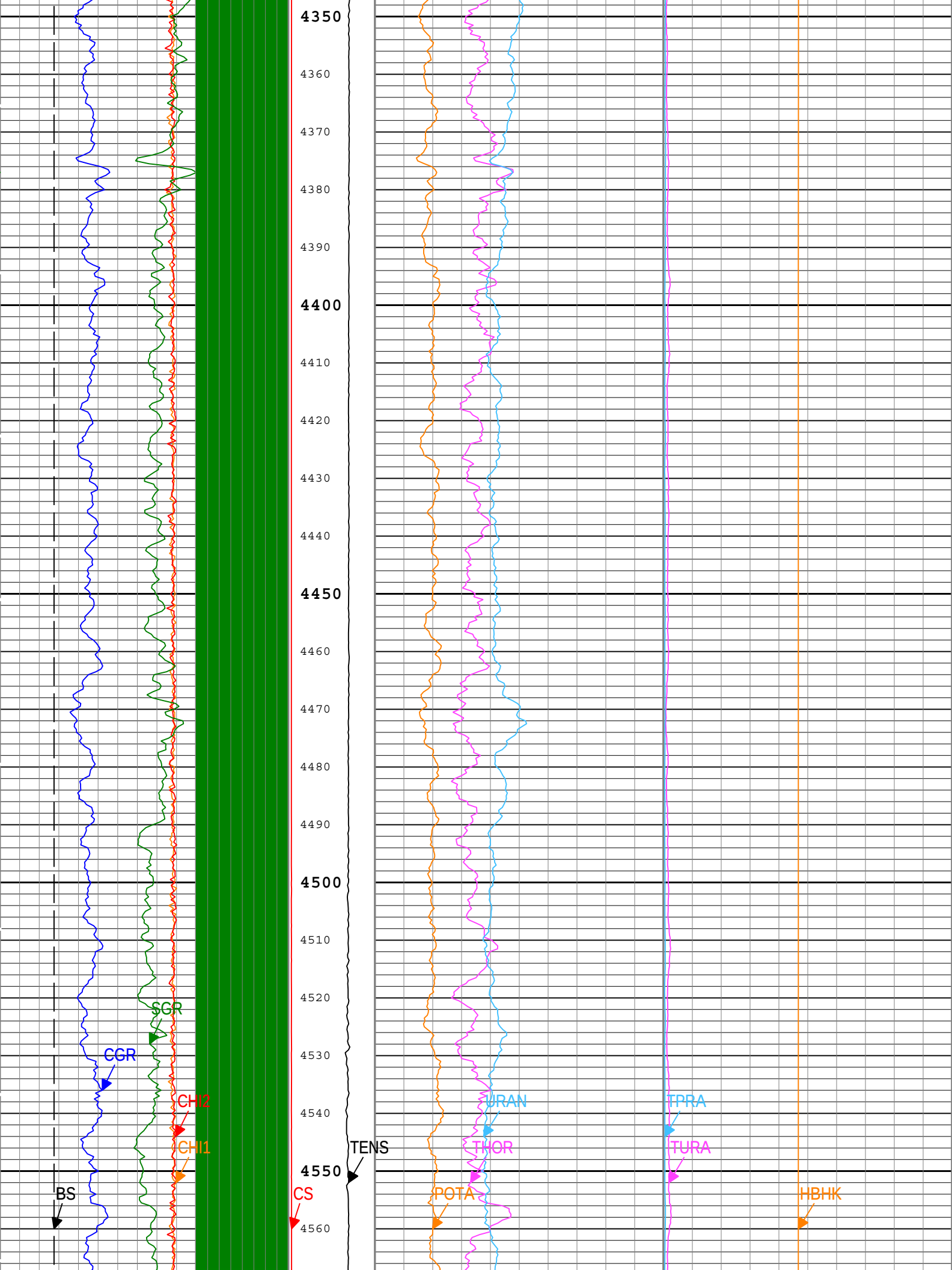
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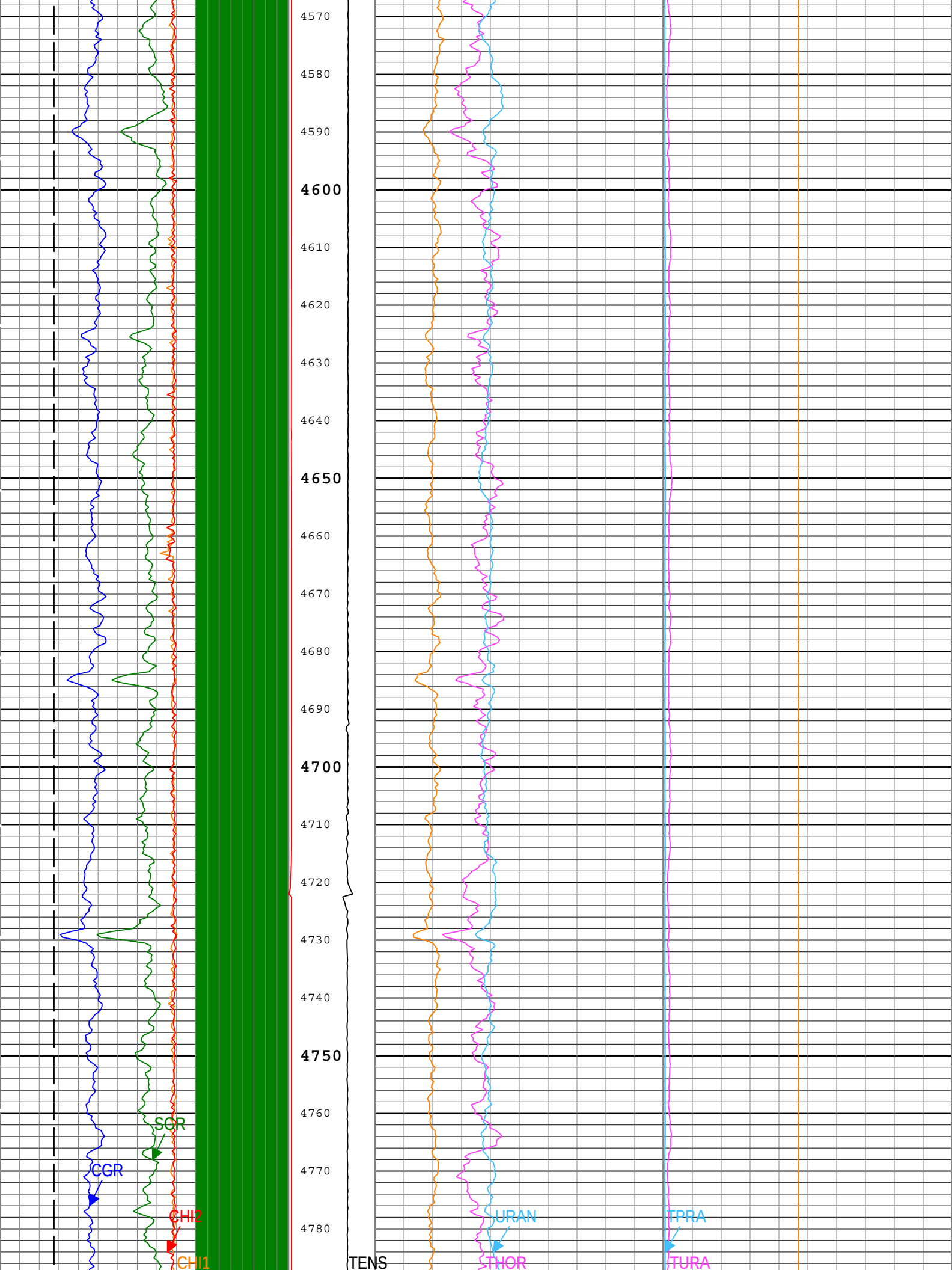
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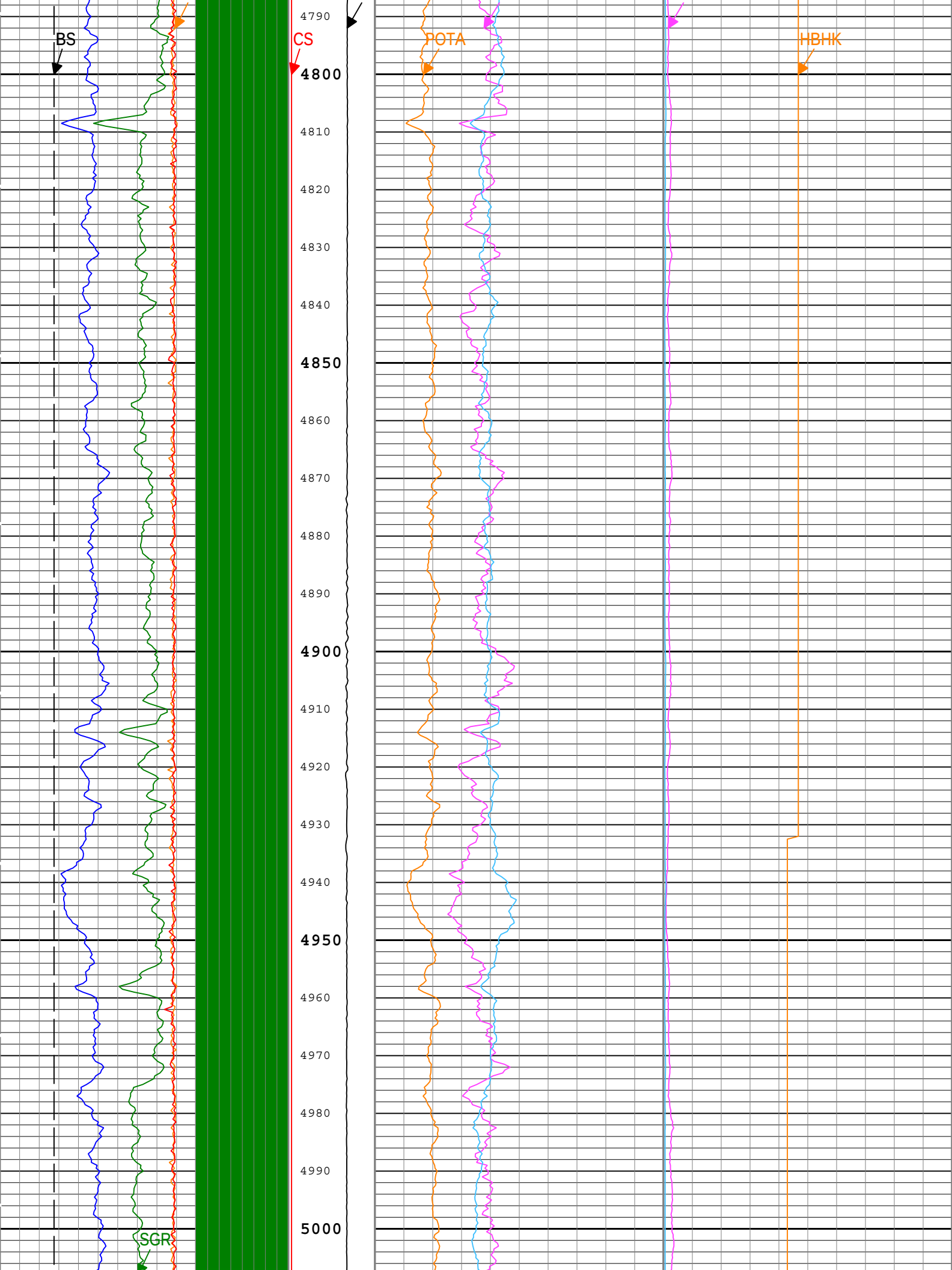
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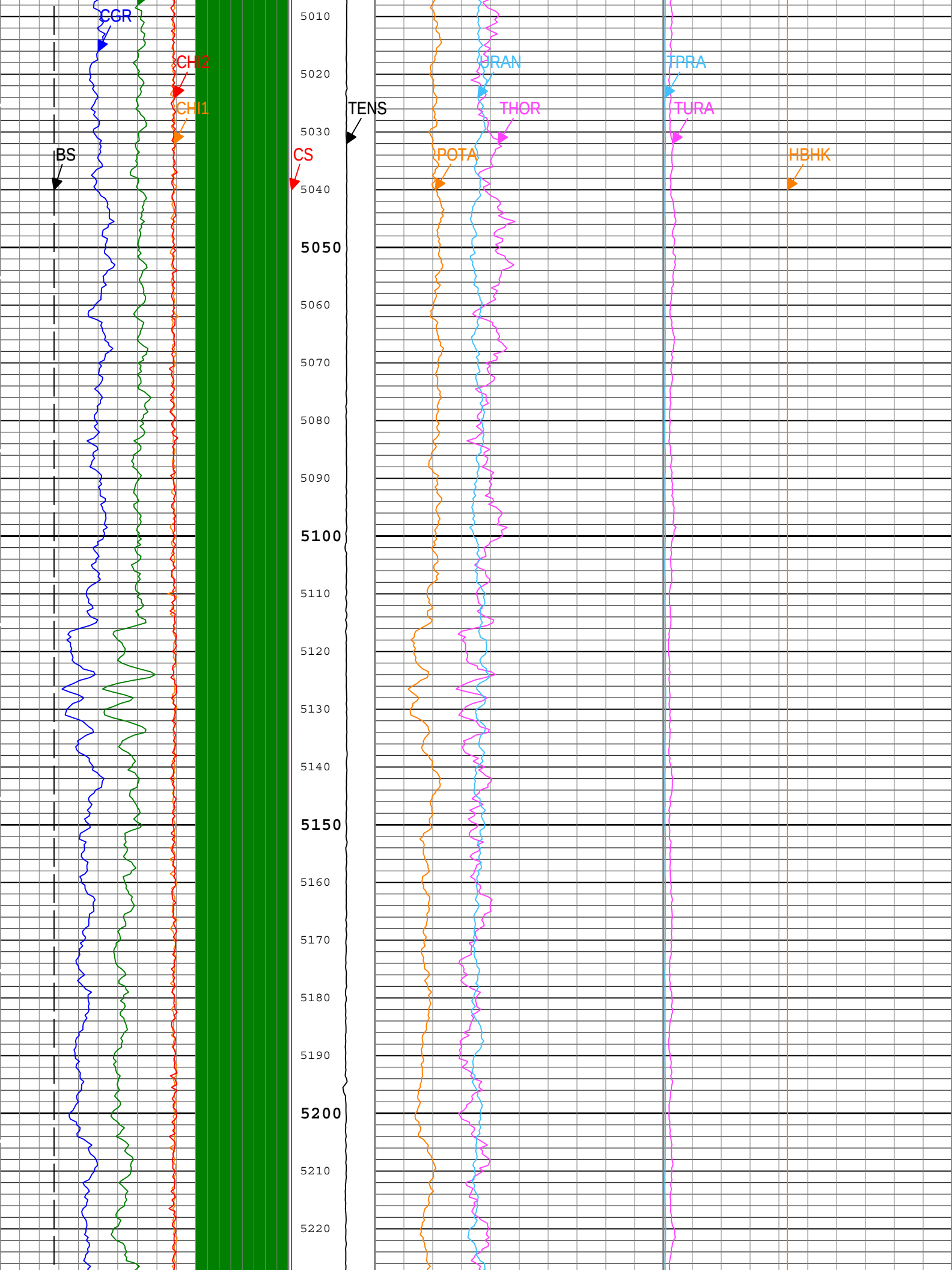
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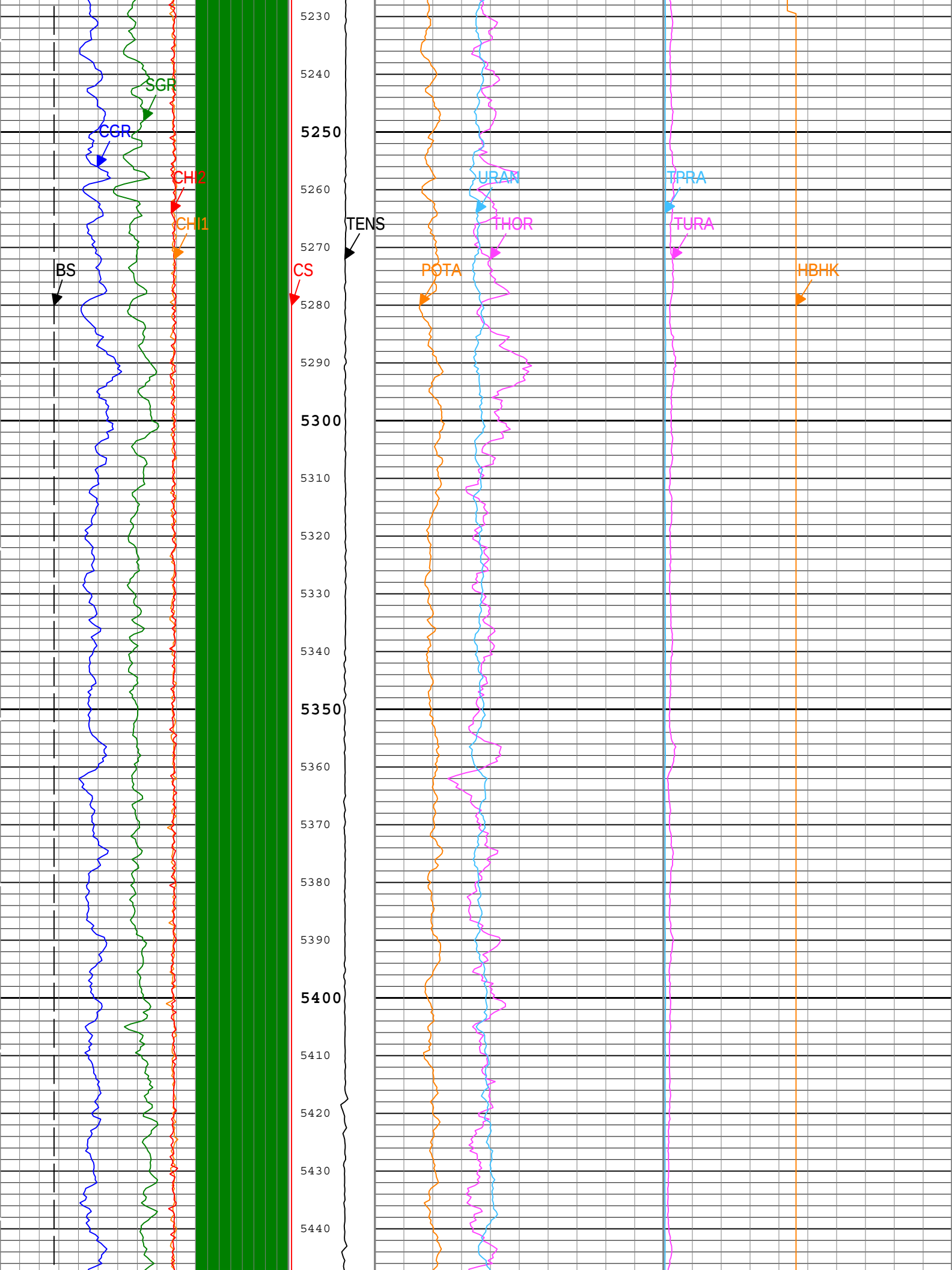
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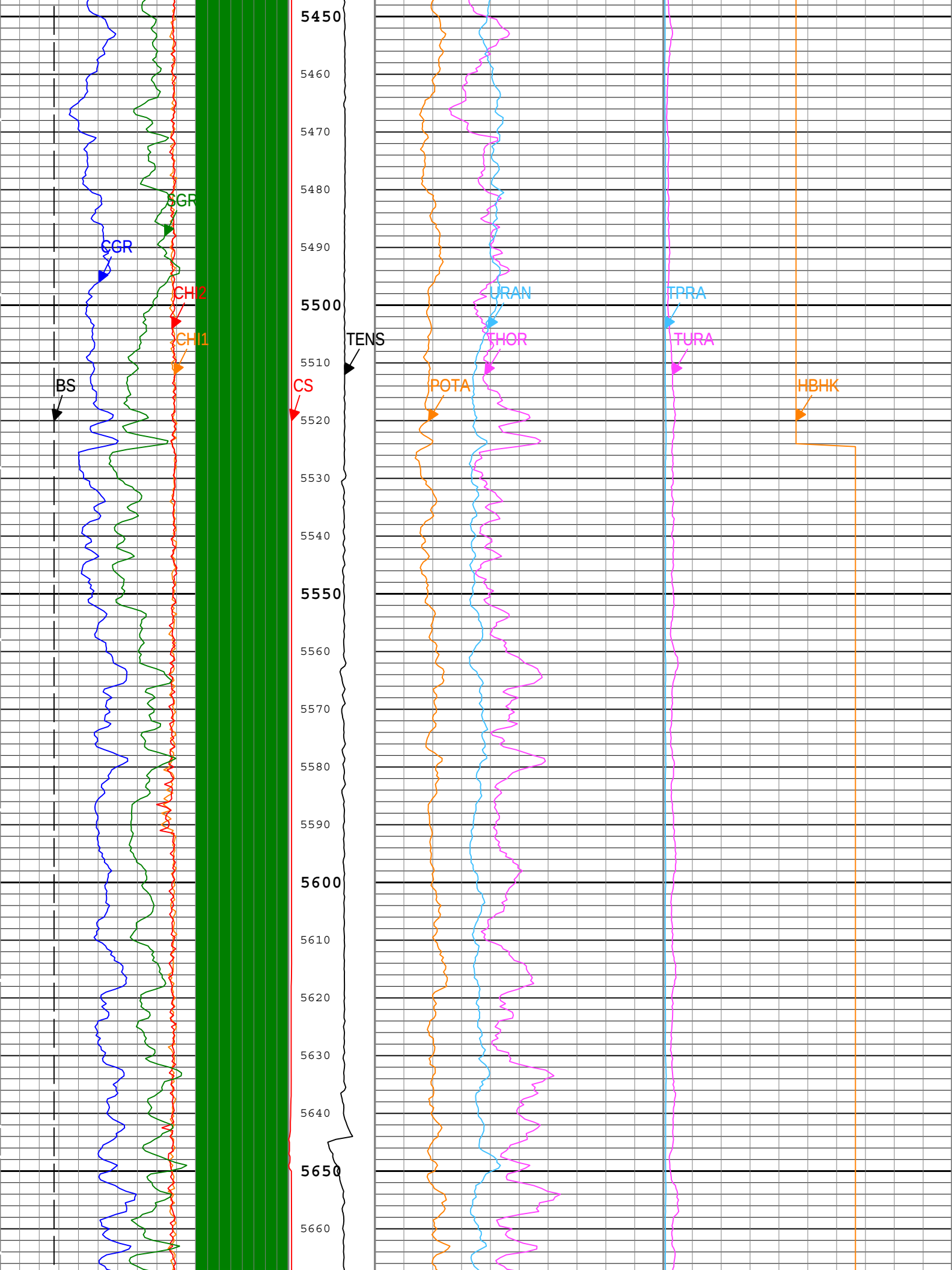
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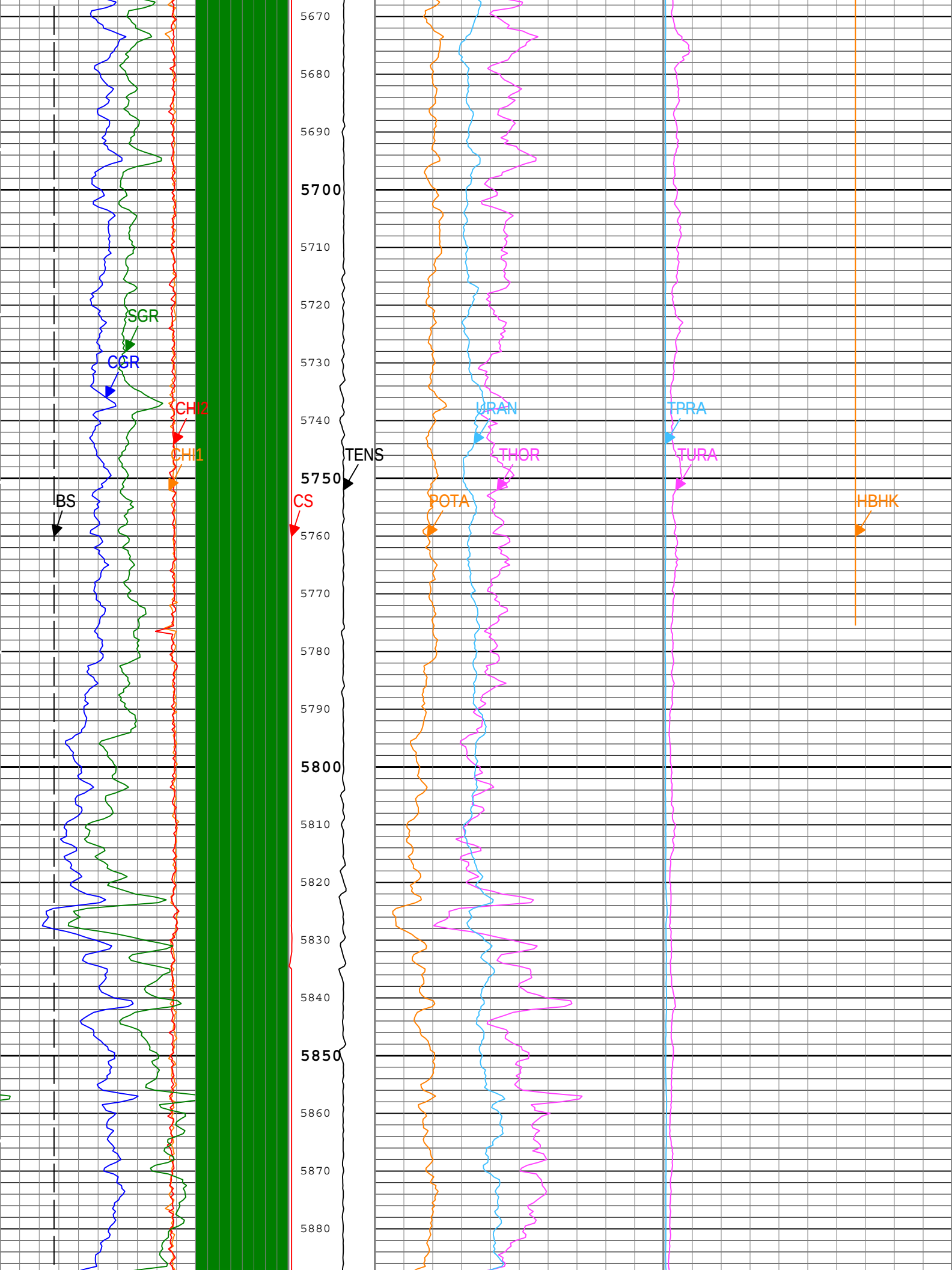
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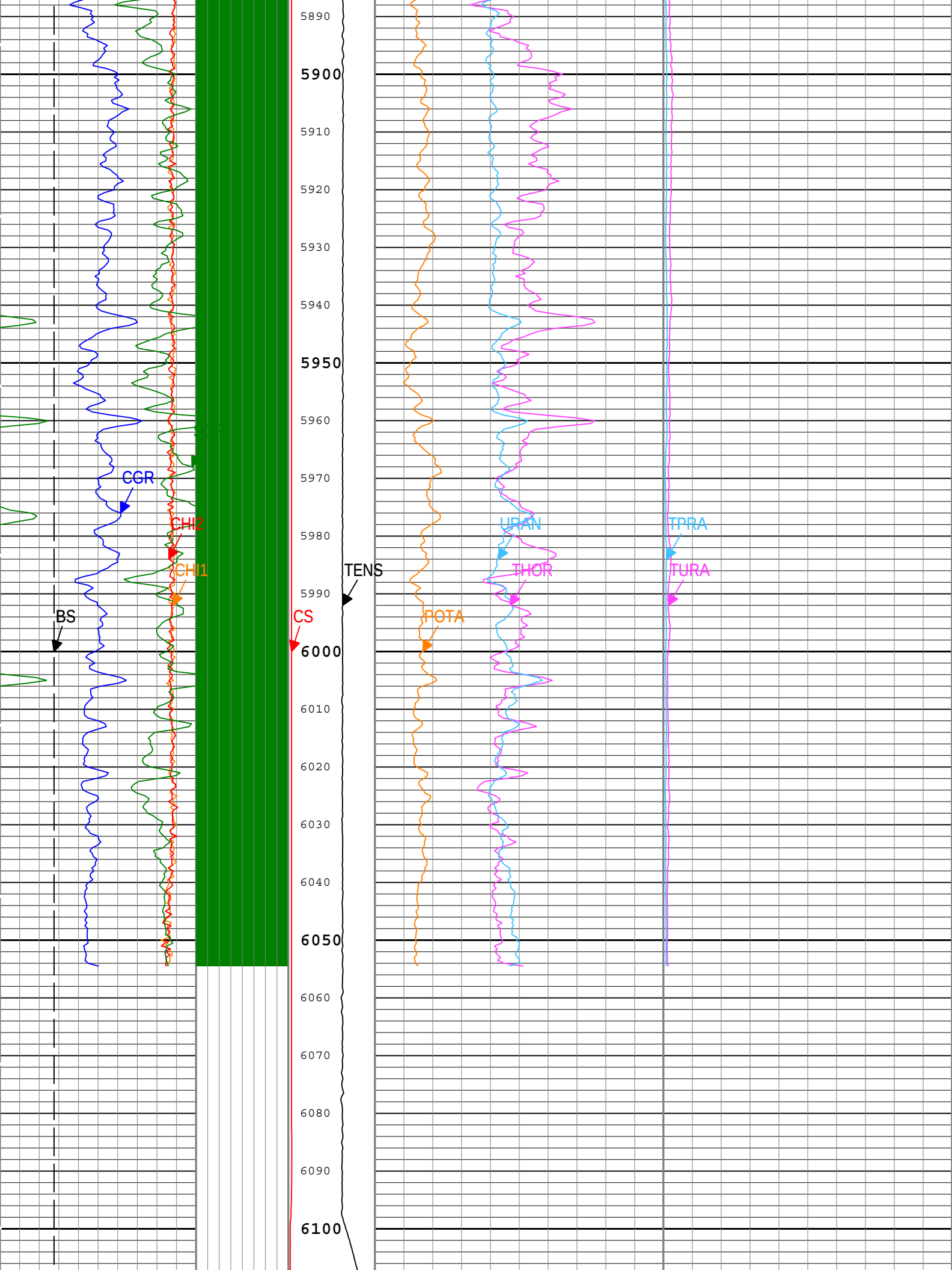
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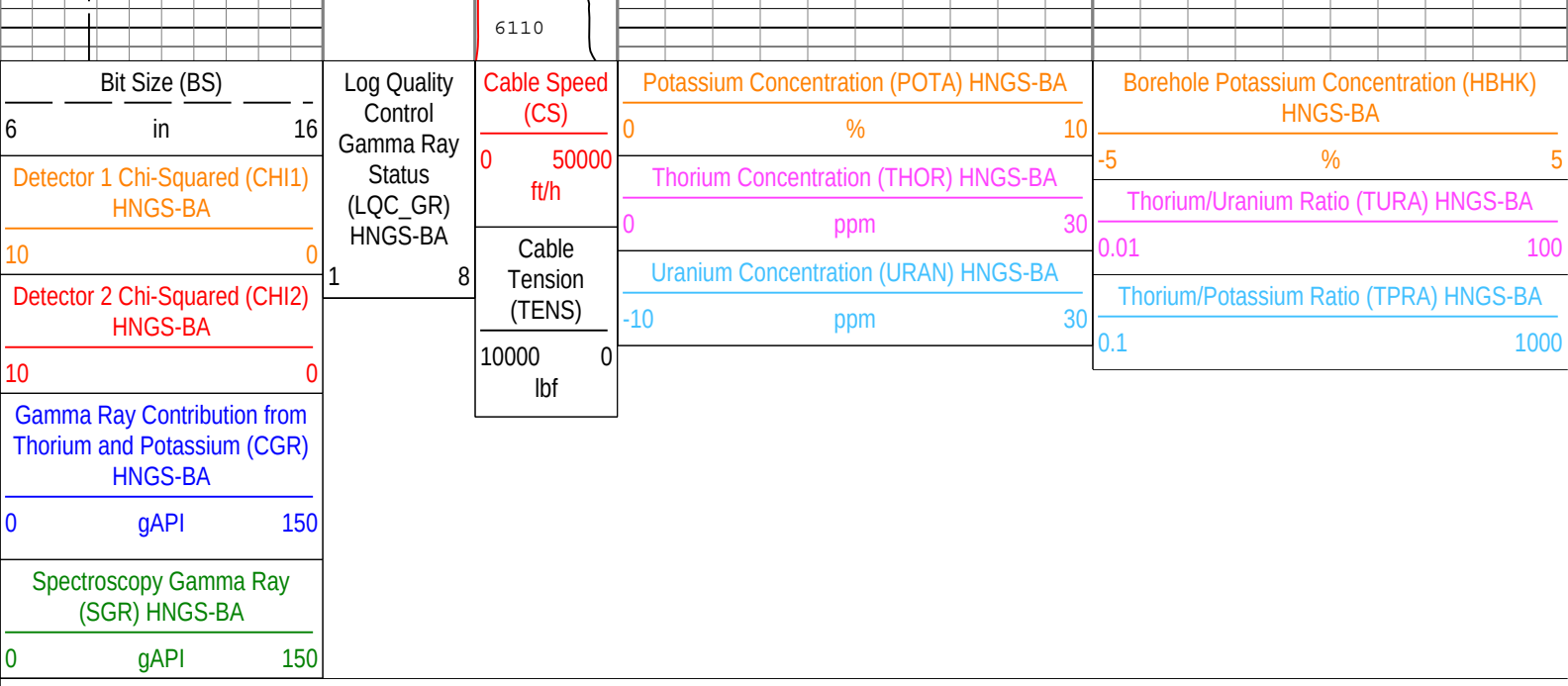

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

1 - CartHwStatus - Cartridge Hardware Status :	Cartridge Hardware: Normal	Cartridge Hardware: Warning
	Cartridge Hardware: Error	
2 - CartTempStatus - Cartridge Temperature Status :	Cartridge Temperature < 150 ºC	150 ºC <= Cartridge Temperature < 175 ºC
	Cartridge Temperature >= 175 ºC	
3 - Det1TempStatus - Detector 1 Temperature Status :	Detector 1 Temperature < 50 ºC	50 ºC <= Detector 1 Temperature < 80 ºC
	Detector 1 Temperature >= 80 ºC	
4 - Det2TempStatus - Detector 2 Temperature Status :	Detector 2 Temperature < 50 ºC	50 ºC <= Detector 2 Temperature < 80 ºC
	Detector 2 Temperature >= 80 ºC	
5 - Det1CtrlLoopStatus - Detector 1 Control Loop Status :	Detector 1 Control Loop: Normal	Detector 1 Control Loop: Warning
	Detector 1 Control Loop: Error	
6 - Det2CtrlLoopStatus - Detector 2 Control Loop Status :	Detector 2 Control Loop: Normal	Detector 2 Control Loop: Warning
	Detector 2 Control Loop: Error	
7 - Det1ChiSqrdStatus - Detector 1 Chi Squared Status :	Detector 1 Chi Squared <= 3.0	Detector 1 Chi Squared > 3.0
8 - Det2ChiSqrdStatus - Detector 2 Chi Squared Status :	Detector 2 Chi Squared <= 3.0	Detector 2 Chi Squared > 3.0

TIME_1900 - Time Marked every 60.00 (s)

Description: HNGS Basic Format: Log (HNGS Basic) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 04-Jun-2012 18:32:49

Channel Processing Parameters

Parameter	Description	ToolPath	Value	Unit
BAR1	Detector 1 Barite Constant	HNGS-BA:HNGS-BA:HNGS-BA	1	
BAR2	Detector 2 Barite Constant	HNGS-BA:HNGS-BA:HNGS-BA	1	
BARI	Barite Mud Presence Flag	Borehole	No	
BHK	Drilling Fluid Potassium Concentration	Borehole	0	%
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	COMPLETION	8.75	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H:HRCC-H:HRCC-H	0	in
CBLO	Casing Bottom (Logger)	COMPLETION	882	ft
DBCC	Barite Constant Correction Flag	HNGS-BA:HNGS-BA:HNGS-BA	None	
DFD	Drilling Fluid Density	Borehole	10.2	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
H1P	Detector 1 Allow/Disallow in Processing	HNGS-BA:HNGS-BA:HNGS-BA	Allow	

H2P	Detector 2 Allow/Disallow in Processing	HNGS-BA:HNGS-BA:HNGS-BA	Allow	
HALF	Alpha Filter Length	HNGS-BA:HNGS-BA:HNGS-BA	60	in
HATIM	Marquardt Accumulation Time	HNGS-BA:HNGS-BA:HNGS-BA	600	s
HCRB	Apply Borehole Potassium Correction	HNGS-BA:HNGS-BA:HNGS-BA	None	
HEMA	Hematite Presence Flag	Borehole	No	
SGRC	Standard Gamma Ray Correction Flag	HNGS-BA:HNGS-BA:HNGS-BA	Yes	
TPOS	Tool Position: Centered or Eccentered	HNGS-BA:HNGS-BA:HNGS-BA	Eccentered	

Tool Control Parameters

Parameter	Description	ToolPath	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLWorkflow	1800	ft/h

1

REPEAT ANALYSIS, 5 INCH

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Log[3]:Up	Up	5769.48 ft	6117.18 ft	04-Jun-2012 12:50:59 PM	04-Jun-2012 1:03:40 PM	4.88 ft	
1	Log[4]:Up	Up	234.78 ft	6113.73 ft	04-Jun-2012 1:10:46 PM	04-Jun-2012 3:37:35 PM	0.00 ft	

All depths are referenced to toolstring zero

Log

1: Log[4]:Up 0E1519BF-BEC1-43BD-A001-C00B950669B8

Description: HNGS Basic Format: Log (HNGS Basic RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 04-Jun-2012 18:32:53

Channel	Source	Sampling
LQC_GR	HNGS-BA:HNGS-BA:HNGS-BA	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

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	Detector 2 Temperature >= 80 ºC	
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	Detector 1 Control Loop: Error	
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	Detector 2 Control Loop: Error	
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8 - Det2ChiSqrdStatus - Detector 2 Chi Squared Status :	Detector 2 Chi Squared <= 3.0	Detector 2 Chi Squared > 3.0

Main To Repeat

Repeat To Main

Spectroscopy Gamma Ray (SGR) HNGS-BA

0 gAPI 150

Main To Repeat

Repeat To Main

Gamma Ray Contribution from Thorium and Potassium (CGR) HNGS-BA

0 gAPI 150

Main To Repeat

Repeat To Main

Detector 1 Chi-Squared (CHI1) HNGS-BA

10 0

Main To Repeat

Repeat To Main

Detector 2 Chi-Squared (CHI2) HNGS-BA

10 0

Main To Repeat

Repeat To Main

Bit Size (BS)

6 in 16

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

1 8

Main To Repeat

Repeat To Main

Cable Speed (CS)

0 50000 ft/h

Main To Repeat

Repeat To Main

Cable Tension (TENS)

10000 0 lbf

Main To Repeat

Repeat To Main

Thorium Concentration (THOR) HNGS-BA

0 ppm 30

Main To Repeat

Repeat To Main

Uranium Concentration (URAN) HNGS-BA

-10 ppm 30

Main To Repeat

Repeat To Main

Potassium Concentration (POTA) HNGS-BA

0 % 10

Main To Repeat

Repeat To Main

Borehole Potassium Concentration (HBHK) HNGS-BA

-5 % 5

Main To Repeat

Repeat To Main

Thorium/Uranium Ratio (TURA) HNGS-BA

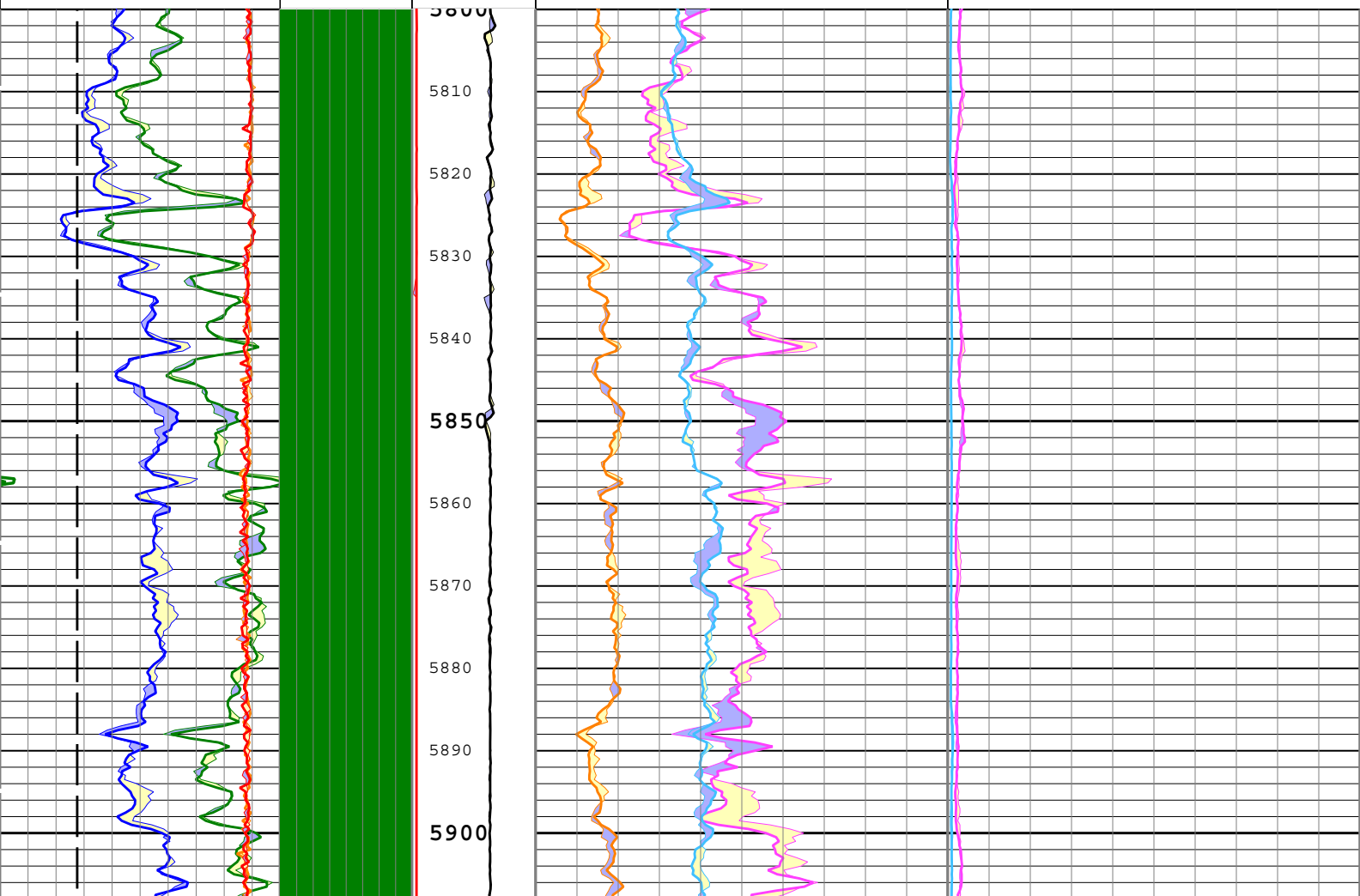
0.01 100

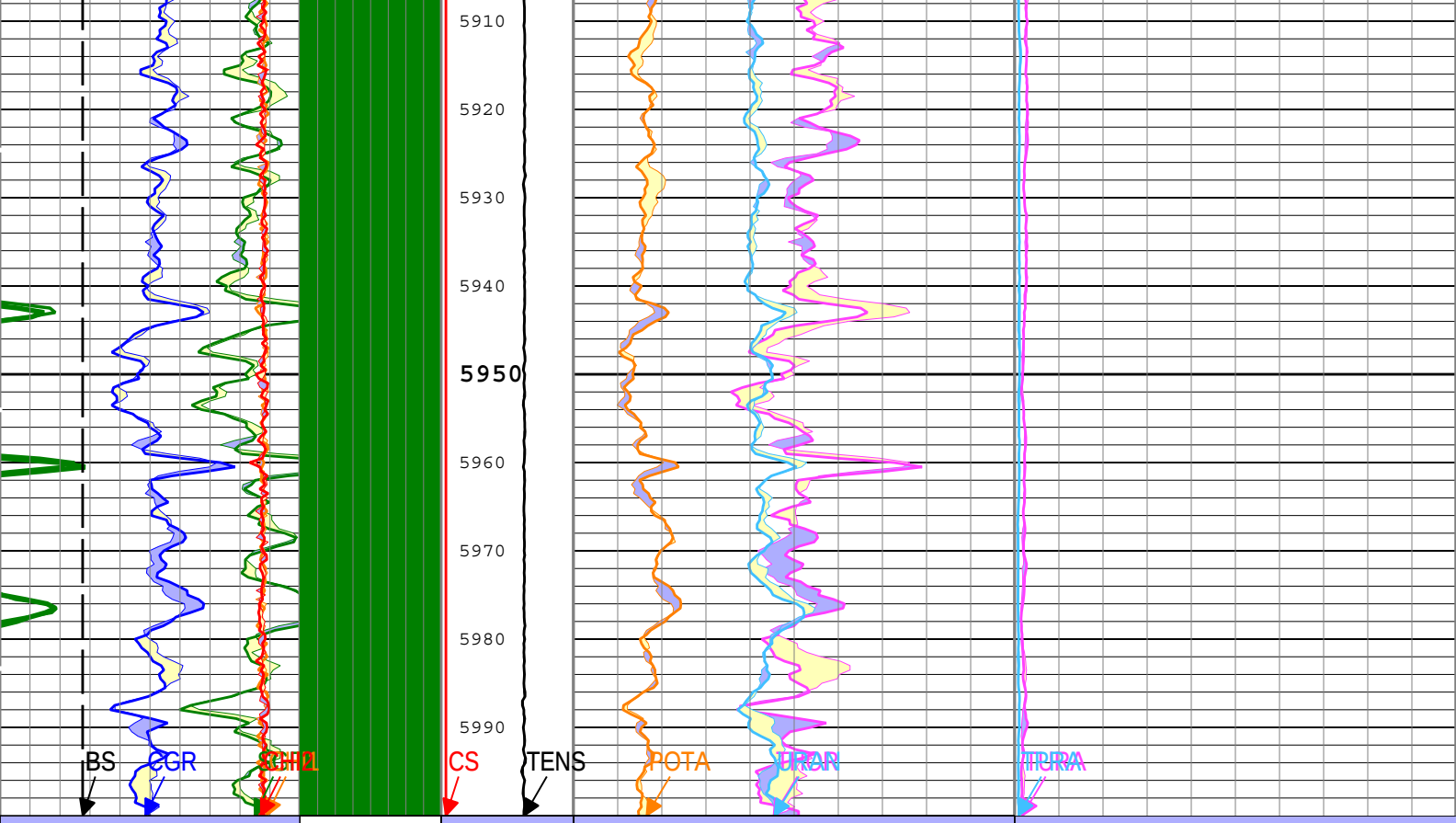
Main To Repeat

Repeat To Main

Thorium/Potassium Ratio (TPRA) HNGS-BA

0.1 1000





Main To Repeat

Repeat To Main

Spectroscopy Gamma Ray (SGR) HNGS-BA

0 gAPI 150

Main To Repeat

Repeat To Main

Gamma Ray Contribution from Thorium and Potassium (CGR) HNGS-BA

0 gAPI 150

Main To Repeat

Repeat To Main

Detector 1 Chi-Squared (CHI1) HNGS-BA

10 0

Main To Repeat

Repeat To Main

Detector 2 Chi-Squared (CHI2) HNGS-BA

10 0

Main To Repeat

Repeat To Main

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

1 8

Main To Repeat

Repeat To Main

Cable Speed (CS)

0 50000 ft/h

Main To Repeat

Repeat To Main

Cable Tension (TENS)

10000 0 lbf

Main To Repeat

Repeat To Main

Thorium Concentration (THOR) HNGS-BA

0 ppm 30

Main To Repeat

Repeat To Main

Uranium Concentration (URAN) HNGS-BA

-10 ppm 30

Main To Repeat

Repeat To Main

Potassium Concentration (POTA) HNGS-BA

0 % 10

Main To Repeat

Repeat To Main

Borehole Potassium Concentration (HBHK) HNGS-BA

-5 % 5

Main To Repeat

Repeat To Main

Thorium/Uranium Ratio (TURA) HNGS-BA

0.01 100

Main To Repeat

Repeat To Main

Thorium/Potassium Ratio (TPRA) HNGS-BA

0.1 1000

Bit Size (BS)

6 in 16

Log Quality Control Gamma Ray Status (LQC_GR) HNGS-BA

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	Cartridge Hardware: Error	
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TIME_1900 - Time Marked every 60.00 (s)

Description: HNGS Basic Format: Log (HNGS Basic RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 04-Jun-2012 18:32:53

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run 1

Primary Equipment :

Array Induction Sonde - H	AHIS	295

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 01:43:26 25-May-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.009	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.230	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.007	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.173	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.013	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	-0.157	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.010	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	-0.065	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.990	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.035	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.993	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.366	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.999	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	-0.003	3.000
Test Loop Gain - 7		Master	1.000	0.950	0.999	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.363	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 01:43:26 25-May-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-130.418	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-831.779	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	173.637	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-201.336	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	110.614	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-138.496	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	54.418	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	22.859	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.791	35.000
Sonde Error Correction Quad - 4		Master	-----	63.000	3.777	63.000

Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	14.078	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-6.595	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	8.898	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	-10.209	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-2.074	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	-9.017	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 01:43:26 25-May-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	0.650	0.500	1.092	0.800
Fine Gain		Master	0.650	0.500	1.200	0.800

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 01:43:26 25-May-2012 Before (Measured): 11:55:19 04-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.625	0.847
		Before	-----	0.363	0.631	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.006	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	66.293	131.000
		Before	-----	11.000	67.101	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.808	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.283	1.778
		Before	-----	0.762	1.295	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.012	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	65.262	130.000
		Before	-----	10.000	66.065	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.803	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.637	0.872
		Before	-----	0.374	0.643	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.006	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	61.476	126.000
		Before	-----	6.000	62.266	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.790	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.718	0.986
		Before	-----	0.422	0.725	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.007	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	60.703	125.000
		Before	-----	5.000	61.491	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.788	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.347	1.872
		Before	-----	0.802	1.360	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.013	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	54.289	119.000
		Before	-----	-1.000	55.050	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.761	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.955	2.737
		Before	-----	1.173	1.973	2.737

		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.018	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	52.388	117.000
		Before	-----	-3.000	53.135	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.747	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.955	2.737
		Before	-----	1.173	1.973	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.018	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	52.394	117.000
		Before	-----	-3.000	53.140	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.746	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.390	1.981
		Before	-----	0.849	1.401	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.011	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	48.592	113.000
		Before	-----	-7.000	49.193	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.601	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master	-----	-50.000	-0.168	50.000
		Before	-----	-50.000	-0.171	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.003	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master	-----	941.000	990.794	1040.000
		Before	-----	941.000	990.818	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.024	-----
		After-Before	-----	-----	-----	-----
Temperature Zero	V	Master	-----	-0.050	0.000	0.050
		Before	-----	-0.050	0.000	0.050
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Temperature Plus	V	Master	-----	0.870	0.917	0.960
		Before	-----	0.870	0.917	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3912

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter	
HRDD Long Spacing Detector	Long Spacing	28706
HRDD Short Spacing Detector	Short Spacing	27692
Cesium 137 Gamma-Ray Logging Source	GSR-J	5415
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	

Calibration Parameter :

Small Ring Size (Caliper Calibration Small Ring)	8.00

Large Ring Size (Caliper Calibration Large Ring)	12.00

HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 12:37:46 03-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	9.13	10.00
Large Ring	in	Before	12.00	9.00	13.24	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 15:22:40 29-May-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.599	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.690	1.696
Pe Aluminum		Master	2.570	2.470	2.537	2.670
Pe Magnesium		Master	2.650	2.550	2.623	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 15:22:40 29-May-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.3922	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.7681	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.2664	1.0000
SS Max Deviation	%	Master	0	-2.5000	1.0208	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.5544	1.5000
LS Max Deviation	%	Master	0	-3.5000	1.8506	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 15:22:40 29-May-2012 Before (Measured): 12:30:32 03-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000	-----	0.7483	-----
		Before	0.7483	0.7109	0.7451	0.7858
		Before-Master	-----	-----	-0.0032	-----
BS Window Sum	1/s	Master	1	-----	24514	-----
		Before	24514	23288	24617	25740
		Before-Master	-----	-----	103	-----
SS Window Ratio		Master	1.0000	-----	0.4790	-----
		Before	0.4790	0.4551	0.4787	0.5030
		Before-Master	-----	-----	-0.0003	-----
SS Window Sum	1/s	Master	1	-----	11553	-----
		Before	11553	10975	11551	12130
		Before-Master	-----	-----	-2	-----
LS Window Ratio		Master	1.0000	-----	0.3009	-----
		Before	0.3009	0.2858	0.3017	0.3159
		Before-Master	-----	-----	0.0008	-----
LS Window Sum	1/s	Master	1	-----	1254	-----
		Before	1254	1191	1249	1316
		Before-Master	-----	-----	-5	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 15:22:40 29-May-2012 Before (Measured): 12:30:32 03-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master	-----	1000	1960	2400
		Before	-----	1000	1923	2400
		Before-Master	-----	-100	-37	100
SS PM High Voltage	V	Master	-----	1000	1877	2400
		Before	-----	1000	1850	2400
		Before-Master	-----	-100	-27	100
LS PM High Voltage	V	Master	-----	1000	1603	2400
		Before	-----	1000	1597	2400
		Before-Master	-----	-100	-6	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 15:22:40 29-May-2012 Before (Measured): 12:30:32 03-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master	-----	5.00	11.13	25.00
		Before	-----	5.00	11.08	25.00
		Before-Master	-----	-1.00	-0.05	1.00
SS Crystal Resolution	%	Master	-----	5.00	10.01	20.00
		Before	-----	5.00	9.84	20.00

		Before-Master	-----	-1.00	-0.17	1.00
LS Crystal Resolution	%	Master	-----	5.00	8.86	20.00
		Before	-----	5.00	8.88	20.00
		Before-Master	-----	-1.00	0.02	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 11:53:13 04-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3862	4185
Deep Resistivity	ohm.m	Before	3830	3524	3775	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3809	4136

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H	4748

Auxiliary Equipment :

HGNS Accelerometer, 150 degC	HACCZ-H	2594
AmBe Neutron Logging Source	NSR-F	1260

Calibration Parameter :

Water Temperature	
Housing Size	
JIG-BKG (Jig minus background reference)	165

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 11:52:33 04-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.2	32.8

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-Feb-2004

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Accelerometer Manufacturer		Master	-----	-----	QAT_160	-----
Accelerometer Reference Temperature	degF	Master	-----	30.2	77.0	122.0
Accelerometer Coefficients - 0		Master	-----	-----	-236.900	-----
Accelerometer Coefficients - 1		Master	-----	-----	24.030	-----
Accelerometer Coefficients - 2		Master	-----	-----	0.001	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.751	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	299.600	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.998	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 16:54:48 13-Apr-2012 Before (Measured): 12:28:14 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	27.5	40.0
		Before	0	5.0	28.8	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	1.3	4.1
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	29.7	40.0
		Before	0	5.0	30.2	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.5	0.5	4.5
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5566.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2214.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Near Corrected Plus Measurement - 0	1/s	Master	-----	4700.0	5601.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Corrected Plus Measurement - 0	1/s	Master	-----	1900.0	2222.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 12:41:11 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	45.2	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	185.4	157.1	167.5	206.3
		After	-----	-----	NOT DONE	-----
		After-Before	-----	-----	-----	-----
GR Calibration Gain		Before	0.89	0.80	0.98	1.05
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

ECS-A (Elemental Capture Spectroscopy Tool) Calibration - Run 1

Primary Equipment :

The ECS sonde is used to measure elemental concentrations.	ECS-A	130

Auxiliary Equipment :

Litho-Density Spectroscopy Cartridge	LDSC-B	
Housing for the LDSC	LDSH-A	18
Housing to contain the ECS Sonde Assembly	ECSH-A	
The gamma ray BGO detector is used to detect prompt capture gamma rays for spectroscopy measurement.	ECSD-A	
The AmBe source provides neutrons for the prompt capture spectroscopy measurement.	NSR-F	

ECS Background Measurement Check - ECS Calibration Check

Master: Before (Measured): 12:37:30 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Detector resolution (20 DegC)	%	Master	13.000	11.200	NOT DONE	14.000
		Before	13.000	11.200	13.642	14.000
		After	13.000	11.200	NOT DONE	14.000
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

ECS Spectral Calibration - ECS Spectral Calibration

Master (EEPROM): 16:01:05 04-Jun-2012

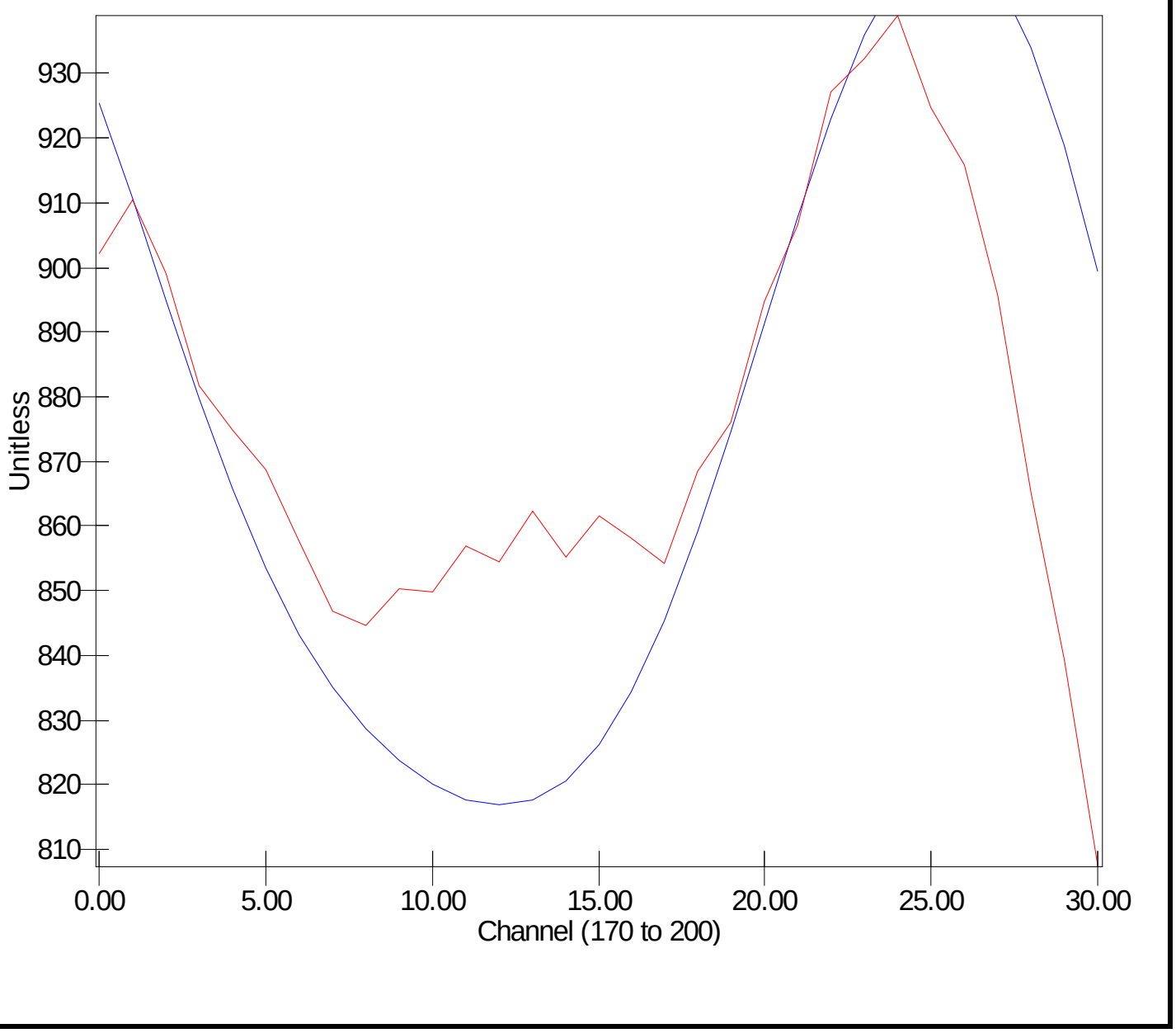
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Spectral Shift Factor		Master	1.000	-0.500	-0.243	1.500

Spectrum Without Shift Plot

SHOP

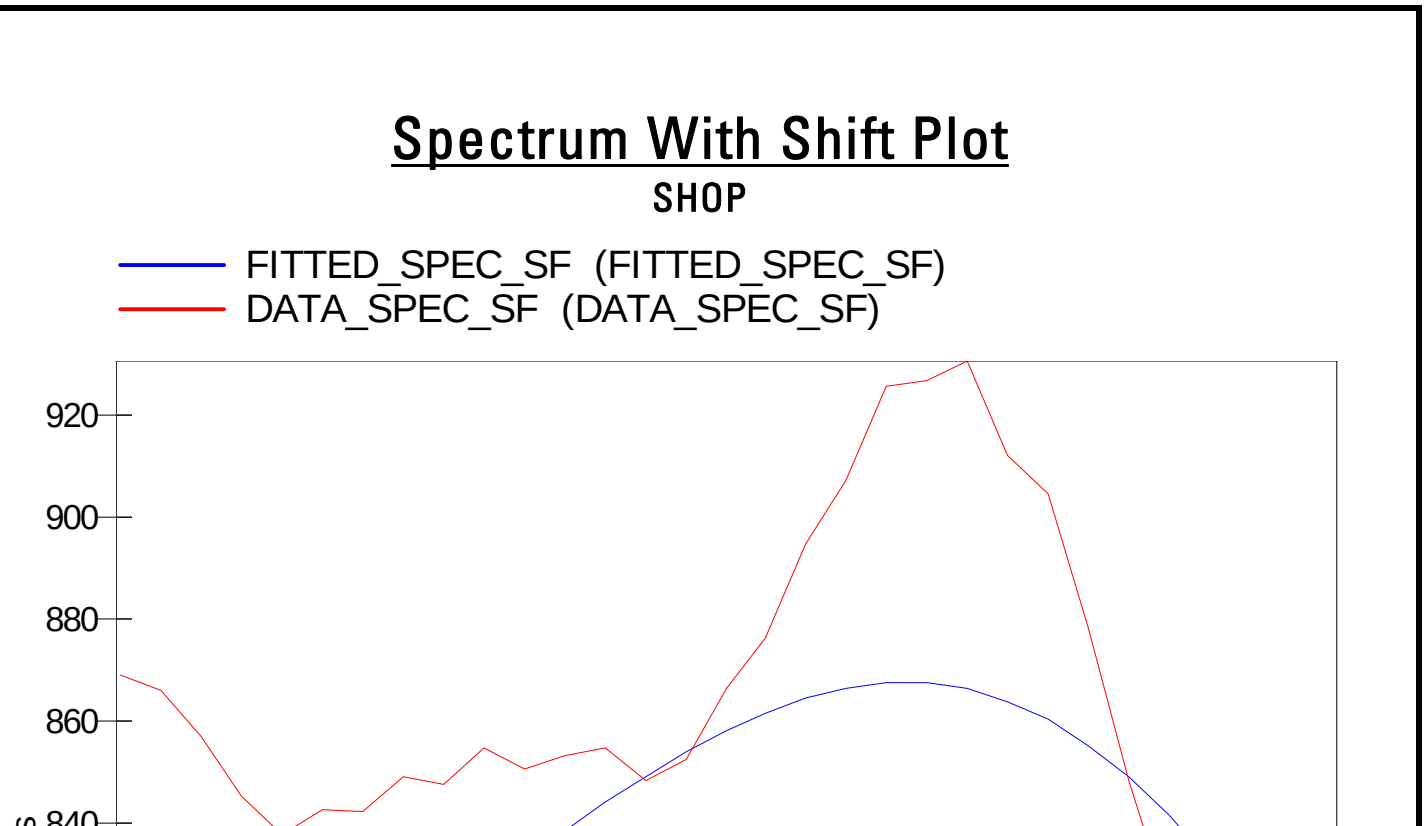
FITTED_SPEC (FITTED_SPEC)

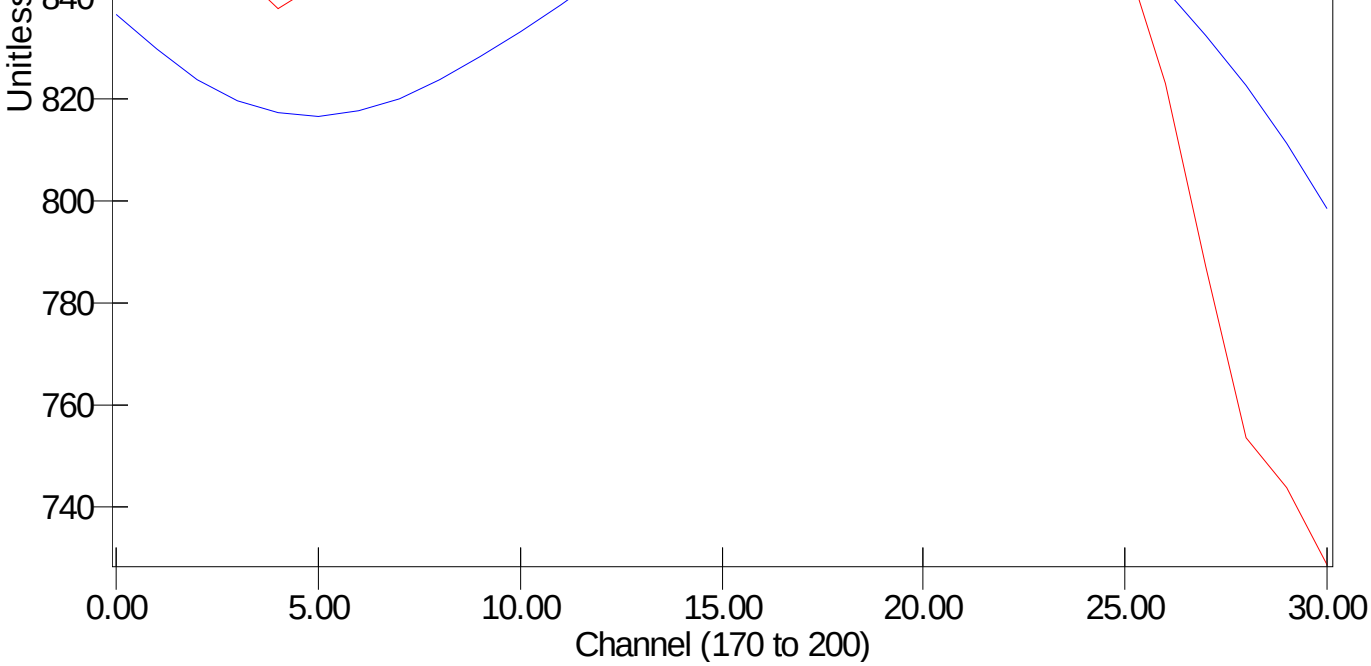
DATA_SPEC (DATA_SPEC)

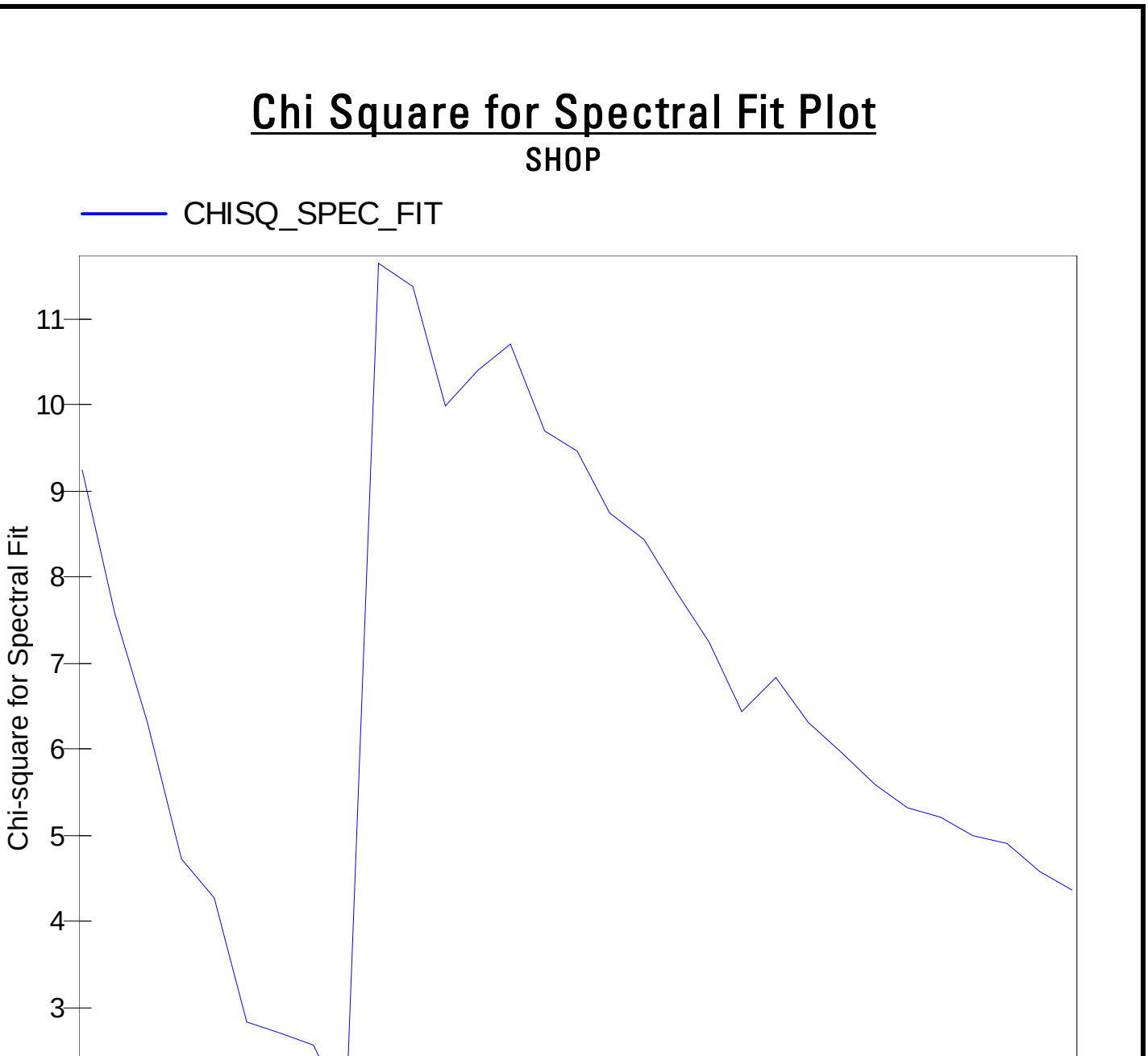


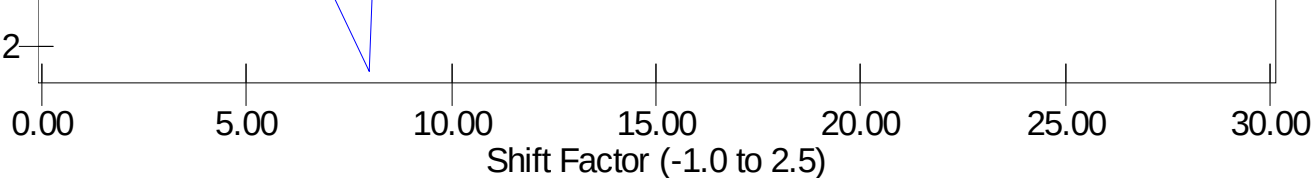
Spectrum With Shift Plot

SHOP




Unitless
840
820
800
780
760
740
0.00
5.00
10.00
15.00
20.00
25.00
30.00
Channel (170 to 200)


Chi Square for Spectral Fit Plot
SHOP
CHISQ_SPEC_FIT
Chi-square for Spectral Fit
11
10
9
8
7
6
5
4
3



HNGS-BA (Hostile-environment Natural Gamma-ray Sonde) Calibration - Run 1

Primary Equipment :

HNGS Sonde Element	HNGS-BA	

Auxiliary Equipment :

Hostile Natural Gamma Ray Cartridge	HNGC-A	
Housing for the HNGC	HNGH-A	313
HNGS Housing Element	HEH-K	186

HNGS Background and Na22 Set Point Determination - Detector 1 Check

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Na 511 Peak Location		Master	-----	-----	38.598	-----
		Before	40.000	37.500	38.704	42.500
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.106	-----
		After-Before	-----	-----	-----	-----
Na 511 Peak Resolution	%	Master	-----	-----	14.537	-----
		Before	15.500	12.000	16.149	19.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.612	-----
		After-Before	-----	-----	-----	-----
High Voltage DAC Value	V	Master	-----	-----	-----	-----
		Before	1150.000	850.000	1047.088	1600.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Na 1785 Peak Location		Master	-----	-----	139.124	-----
		Before	142.650	135.000	139.867	150.300
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.743	-----
		After-Before	-----	-----	-----	-----
Na 1785 Peak Resolution	%	Master	-----	-----	8.878	-----
		Before	8.500	7.000	8.770	11.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.108	-----
		After-Before	-----	-----	-----	-----
Temperature	degF	Master	-----	-----	-----	-----
		Before	59.900	-20.002	68.394	140.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Na Count Rate	CPS	Master	45.000	10.000	14.879	100.000
		Before	45.000	10.000	46.109	100.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	31.230	-----
		After-Before	-----	-----	-----	-----

HNGS Background and Na22 Set Point Determination - Detector 2 Check

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Na 511 Peak Location		Master	-----	-----	39.760	-----
		Before	40.000	37.500	39.624	42.500
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.136	-----

		After-Before	-----	-----	-----	-----
Na 511 Peak Resolution	%	Master	-----	-----	15.230	-----
		Before	15.500	12.000	16.459	19.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.229	-----
		After-Before	-----	-----	-----	-----
High Voltage DAC Value	V	Master	-----	-----	-----	-----
		Before	1150.000	850.000	1084.917	1600.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Na 1785 Peak Location		Master	-----	-----	141.858	-----
		Before	142.650	135.000	142.325	150.300
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.467	-----
		After-Before	-----	-----	-----	-----
Na 1785 Peak Resolution	%	Master	-----	-----	9.375	-----
		Before	8.500	7.000	9.387	11.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.012	-----
		After-Before	-----	-----	-----	-----
Temperature	degF	Master	-----	-----	-----	-----
		Before	59.900	-20.002	70.212	140.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Na Count Rate	CPS	Master	45.000	10.000	14.937	100.000
		Before	45.000	10.000	45.751	100.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	30.814	-----
		After-Before	-----	-----	-----	-----

HNGS Background and Na22 Set Point Determination - Ratio of Detector 1 to Detector 2

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coincidence Count Rate Ratio		Master	-----	-----	-----	-----
		Before	1.000	0.950	1.003	1.050
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HNGS Background and Na22 Set Point Determination - Detector 1 Calibration

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Th Peak Location - 0		Master	209.630	201.000	207.370	218.250
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Th Peak Resolution - 0	%	Master	7.000	5.000	7.063	9.000
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Background Count Rate	CPS	Master	-----	-----	-----	-----
		Before	142.500	10.000	119.460	265.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Gain Ratio - 0		Master	1.000	0.940	1.022	1.060
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HNGS Background and Na22 Set Point Determination - Detector 2 Calibration

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Th Peak Location - 0		Master	209.630	201.000	207.997	218.250

		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Th Peak Resolution - 0	%	Master	7.000	5.000	6.932	9.000	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Background Count Rate	CPS	Master	-----	-----	-----	-----	
		Before	142.500	10.000	123.131	265.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Gain Ratio - 0		Master	1.000	0.940	0.995	1.060	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HNGS Background and Na22 Set Point Determination - Detector 1 Calibration

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Na 511 Peak Set Point - 0		Master	40.000	38.000	40.000	43.500	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HNGS Background and Na22 Set Point Determination - Detector 2 Calibration

Master (Manual Entry): 13:26:13 31-Mar-2012 Before (Measured): 12:29:22 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Na 511 Peak Set Point - 0		Master	40.000	38.000	41.000	43.500	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1

Primary Equipment :

Enhanced Digital Telemetry Cartridge - B EDTC-B 8054

Calibration Parameter :

Plus Reference (Jig minus background reference) 165

EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration

Before (Measured): 11:52:29 04-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.19	31.53	32.38	32.84	

EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM): 12:33:13 04-Jun-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Initial PMT HV	V	Master	-----	-----	1574.000	-----	
Accelerometer Serial Number		Master	-----	-----	0	-----	
Accelerometer Coefficients - 0		Master	-----	-----	2.933	-----	
Accelerometer Coefficients - 1		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 2		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	-0.011	-----	
Accelerometer Coefficients - 8		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 10		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 11		Master	-----	-----	0.000	-----	

Gamma-Ray Detector Serial Number		Master	-----	-----	77758	-----

EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured): 12:46:40 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Gamma Ray Gain		Before	1.000	0.900	1.084	1.100
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured): 12:46:40 03-Jun-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	-----	0	36.011	120.000
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	165.000	150.000	152.213	180.000
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

Company: EnCana Oil & Gas (USA)

Schlumberger

Well: DV08B-23 (H23 4101)

Field: East Douglas Creek

County: Rio Blanco

State: Colorado

SPECTROSCOPY GAMMA RAY