AUSTRALIA PACIFIC LNG PTY LTD

CONDABRI 156
WELL COMPLETION REPORT

PL 265 - QUEENSLAND

Originator:
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Australia Pacific LNG Pty Ltd
ABN 68 001 646 331

Level 1, 144 Montague Road
WEST END QLD 4101

November, 2013

WELL CARD

General Data	
Well Name:	Condabri 156
Well Type:	Development
Field:	Condabri Central
Tenure:	PL 265
Location	
Latitude:	26° 55' 04.78" S
Longitude:	150° 14' 23.38" E
GDA94 Zone 56 Easting:	225 887 E
GDA94 Zone 56 Northing:	7 019 656 N
Elevation	
Ground Level (mAMSL):	310.66
Drill Floor (mAMSL):	314.46
Total Depth	
Driller:	885.00 mRT
Logger:	888.74 mRT
Drilling Rig(s)	
Drilling Rig:	Savanna 406
Date Spudded:	18/05/2013
Date TD Reached:	19/05/2013
Date Rig Released:	21/05/2013
Well Status on Rig Release Day	
Cased & Suspended	

Well Details				
	Conductor	Surface	Production	
Hole				
Size	N/A	12 1/4"	8 3/4"	
Depth from Rotary Table		123 mRT	885 mRT	
Drilling Fluid		Water-based spud mud	Water-based KCL/polymer mud	
Drill Bits - Size/Type		12 1/4" Reed RSFX510S PDC	8 3/4" Reed SKF613M PDC	
Casing				
Size/Weight/ Grade		9 5/8"/36 ppf/K-55	7"/23 ppf/K-55	
Depth - Bottom of Shoe (mRT)		120.70	880.68	
Cement				
Interval		Surface Casing: 123 mRT to surface	Production Casing: 557.21 mRT to surface	
Surface		Pumped 34.9bbl of 15.6ppg Portland GP cement lead with 1% CaCl2 & 0.25gal/10bbl NF-6 additives. 9bbl cement to surface. Cement tagged at 120 mRT.		
Production		Pumped 56bbl of 13.5ppg Portland GP cement lead with 1% Econolite Powder, 20% Pozmix A & 0.7% Halad 344 additives, followed by 12bbl of 15.2ppg Gas Tight cement tail with 0.5% CFR-3, 0.4% Halad 344 & 1% CaCl additives. 10bbl cement to surface.		

Mud System Chemicals			
Name	**Unit**	**Weight**	**Total**
Soda Ash	6	25kgs	150kgs
Drispac Plus Super Lo	1	23kgs	23kgs
AMC Biocide	4	25L	100L
AMC Dex	45	25kgs	1125kgs
Potassium Chloride	137	25kgs	3425kgs
Flowzan	9	11kgs	99kgs

DRILLING & COMPLETIONS SUMMARY

Condabri 156 was drilled vertically in the PL 265 permit to produce gas from the Walloon coal seams in the Condabri Central Field. The Condabri Central Field is located approximately 11kms northeast of Condamine in southeast Queensland. Refer to the Area Map in Appendix 1 & the Well Location Survey in Appendix 3.

The wellbore intersected 3 coal measures within the Walloon Subgroup with the potential to produce coal seam gas. These coal measures & the estimated amount of net coal for each area are as follows:

- Upper Juandah – 7.21m
- Lower Juandah – 8.13m
- Taroom – 9.70m

The total net coal is estimated at 25.04 metres. For drilling details refer to Appendix 2 (Daily Drilling Reports). Condabri 156 was drilled & suspended as a future production well.

GEOLOGICAL SAMPLES

Wireline Logs	Date	Log Type	Interval	Contractor
Logging Run 1	20/05/2013	Res-Den-Neu-GR	20.71 - 888.74 mRT	Schlumberger
Logging Run 2	5/10/2013	CBL-VDL-Map-GR-CCL	0.00 - 580.00 mRT	Vause

Full Hole Coring	Date	Interval (mGL)	Size/Cut (m)	Recovered (m)
N/A				

Sidewall Coring	Date	Interval (mGL)	Size/Cut (m)	Recovered (m)
N/A				

Mudlogging	Date	Interval (mGL)	Size/Cut (m)	Recovered (m)
N/A				

Cutting Samples	Date	Interval (mGL)	Size/Cut (m)	Recovered (m)
N/A				

WELL TESTS

Drill Stem Testing

Date	Interval (mRT)	Formation (CM)	Gas Flow Rate	Fluid Recovery	Pressures (psia)			
					Initial Flow	Initial Shut In	Final Flow	Final Shut In
N/A								

Flow Test Results

	Date	Gas Flow Rates (mmscfd)	Water Flow Rates (bwpd)	Pressure (psia)	Depth (mRT)
Initial	N/A				
Final	N/A				

Modular Formation Dynamics Tester (MDT)

Date	Interval (mRT)	Formation	Final Pump Rate (bbl/d)	Final Shut In Pressure (psia)
N/A				

SURVEYS

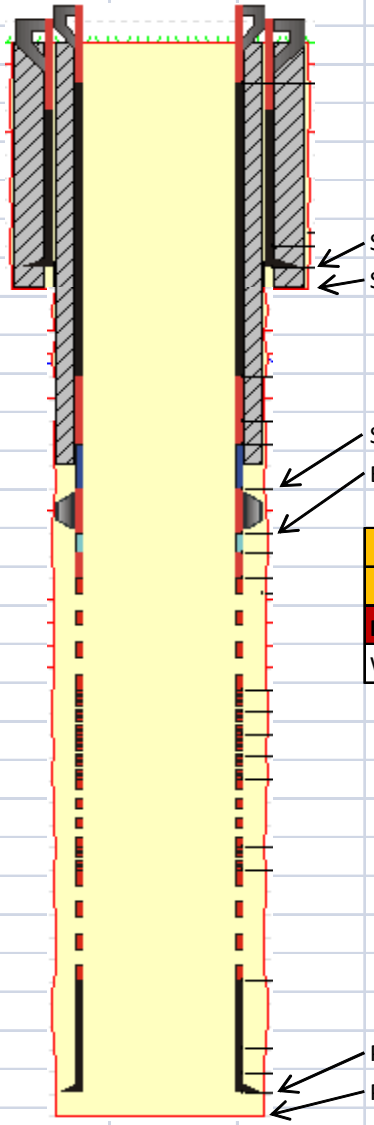
Well Location Survey

Date	Longitude	Latitude	Ground Level (mAMSL)	Easting	Northing
20/06/2013	150^0 14' 23.38" E	26^0 55' 04.78" S	310.66	225 887 E	7 019 656 N

Deviation Survey

See Appendix 7 (Directional Survey)

Current Schematic



Surface Casing: 9 5/8" @ 120.70 mRT

Surface Hole: 12 1/4" to 123 mRT

Stage Tool: 556.83 mRT

External Casing Packer: 557.54 mRT

Perforation Details		
Pre-Perforated		
Formation	Interval (mRT)	
Walloon CM	560.90	846.04

Production Casing: 7" @ 880.68 mRT

Production Hole: 8 3/4" to 885 mRT

Driller's Depth: 885 mRT

Formation Tops Summary

Formation tops were picked by Geoscientists from Wireline Logs & ROP Curve data.

Formations	mRT
Undifferentiated	9.44
Gubberamunda Sst	153.72
Westbourne Fm	337.30
Springbok Sst	444.40
Walloon Sub-Group/UJCM	546.95
Macalister Seam	569.02
Juandah Sst	614.86
Lower Juandah CM	625.71
Tangalooma Sst	769.81
Taroom CM	776.89
Eurombah Fm	867.12

GEOLOGICAL SUMMARY

The Condabri Central Field is within PL 265 which is located approximately 11kms northeast of Condamine in southeast Queensland. The Condabri CSG wells target the methane-rich coal measures of the Middle Jurassic Walloon Subgroup.

Jurassic and Cretaceous sediments accumulated in the Surat and adjacent Clarence-Moreton, Eromanga, Nambour and Mulgildie Basins. These interconnected basins formed as intracratonic sags and constitute part of the Great Artesian Basin system. Subsidence was relatively continuous and widespread and the basins generally retain relatively simple geological structures with shallow dips and little evidence of lateral compression. The Surat Basin covers an area of approximately 270,000 km2 in southern Queensland and northern New South Wales. The Walloon Subgroup is over 500 m thick in the central and eastern parts of the basin and contains numerous coal seams and has been extensively explored for opencut coal resources. The Surat Basin also contains widespread, quartzose sandstones that have been the target of numerous water bores.

The Walloon Subgroup is subdivided into the Juandah Coal Measures, Tangalooma Sandstone and Taroom Coal Measures (Jones and Patrick, 1981). The siliclastic sediments comprise very fine to medium grained volcanolithic sandstones, siltstones and claystones. The mudrocks are tuffaceous and commonly form numerous partings within coaly intervals. The coals are low rank (0.4 to 0.5 Vro); generally dull and high in ash (~20%) forming thin plies that are interbedded with claystones and siltstones to form thick coal packages. Individual coal seams (plies) cannot be traced for more than a few kilometres, but coaly packages can be traced basinwide. The unit accumulated in alluvial plain depositional environments that hosted areally restricted peat mires and lakes in a region affected by airfall tephras.

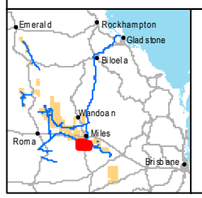
Walloon coals were derived from Middle Jurassic peat mire floras and as a result differ markedly from Permian Bowen Basin coals. Walloon coals are typically dull, high in ash and form thin plies interbedded with claystone and siltstone beds to form thick coaly packages. Petrographically the coals are vitrinite-rich, with abundant liptinite and rare inertinite. Petrographic analyses of typical Walloon coals show 75-85% vitrinite, 15-20% liptinite and less than 5% inertinite. The liptinite comprises predominantly suberinite and resinite derived from the pine-dominated flora. Liptinites are believed to produce large amounts of methane at low maturity. Despite the high vitrinite content the coals contain few thick bright bands and are predominantly dull and hard.

References: Jones, G.D. & Patrick, R.B.
1981, Stratigraphy & Coal Exploration Geology of the Northeast Surat Basin
Journal of the Coal Geology Group, Geological Society of Australia, 1(4), p. 153-163

Fatah, S.
PL 265, Condabri 156, Drilling Programme, report prepared for Origin Energy

APPENDIX 1 – LOCATION MAP

FID	Origin	Destinatio	Distance_R	Distance_U
0	Condabri 156	Condamine	10.52414	kilometres
1	Condabri 157	Condamine	10.63078	kilometres
2	Condabri 158	Condamine	11.28574	kilometres
3	Condabri 180	Condamine	12.24879	kilometres
4	Condabri 191	Condamine	10.01389	kilometres
5	Condabri 192	Condamine	9.870024	kilometres
6	Condabri 193	Condamine	9.340382	kilometres
7	Condabri 194	Condamine	9.326534	kilometres
8	Condabri 202	Condamine	8.266244	kilometres
9	Condabri 203	Condamine	8.72799	kilometres
10	Condabri 206	Condamine	9.397559	kilometres
11	Condabri 207	Condamine	9.333141	kilometres
12	Condabri 388	Condamine	10.33243	kilometres



N

Scale 1:78,998 (at A3)

0 0.5 1 2 3 4

Kilometers

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
A	Issued For Information Only	MN	HDJ	CS		19/11/2013

origin

CON LM

Date: 19 November 2013

Map Number	Doc No	Rev
1 of 1	N/A	A
	Map ID GISWR_17559	

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APPENDIX 2 – DAILY DRILLING REPORTS

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 18/05/2013
Report #: 1
Depth Progress: 119.20 m
Depth End: 123.00 mKB
Rig Release Date: 21/05/2013

State	Basin	District	Lease	Well Configuration Type
QUEENSLAND	SURAT	CONDABRI	PL 265	VERTICAL

Ground Elevation (m)	Original KB/RT Elevation (m)	Original Spud Date	AFE Duration Total (days)	Days From Spud (days)
313.00	316.80	18/05/2013		0.35

Daily Cost	Cumulative Cost	AFE Amount	AFE + Sup Amount	Project ID#	Work Order
79,431.53	79,431.53	282,771.66	282,771.66	153926	

Planned Depth (TMD) (mKB)	Wellbore	Head Count	Personnel Total Hours (hrs)	Cum Pers Tot Hr (hrs)
900.00	Original Hole	24.0	288.00	288.00

Like Kind Category	Road Condition	Weather	Temperature (°C)	Wind
Walloons preperf	Good	Fine	22	Calm

Operations @ Morning Report
RIH 8 3/4" BHA.

Last 24hr Summary
Move rig package from CON 163 to CON 156, Rig up on location, Spud well & drill surface hole to TD, Circulate hole clean, POOH, Run & cement 9 5/8" casing, WOC.

24hr Forecast
W.O.C., Nipple up and start pressure test BOP's. Make up BHA & run in hole. Finish pressure test BOP's and do accumulator draw down test. Drillout & do FIT. Drill ahead 8 3/4" production hole. Circulate, POOH.

General Remarks
0000 - 0030 Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
0030 - 0230 WOC.
0230 - 0400 Backed out landing joint and laid down. Nippled up, Cleaned & inspected BOP's. Function tested BOP's.
0400 - 0430 Pressure tested blind rams to 2" side outlets, check valve, casing, choke line and manual HCR. 250/ 1500 psi , 5/5 min.
0430 - 0500 Rig service - Grease top drive and inspect.
0500 - 0600 Function tested mud motor and make up 8 3/4" BHA. RIH to 100m.

Daily Contacts
NIGHT DRLG SUPV, ROSS McKAY; DAY DRLG SUPV, DERRYLL PALIWODA

Last Casing String
Surface, 120.70mKB

Days LTI and Days RI

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
147.00	147.00

Observation Cards (BST, STOP, etc)

Comment	No. Rpts
1. Kicker panel not rigged up on floor properly. Rectified. 2. Fence around sump not placed corrected. Rectified.	2
1. Crew took the time to show the new roughneck where to correctly place his hands while running casing. 2. Good teamwork and communication while manual handling was observed during rigging up.	7

Time Log

Start Time	End Time	Dur (hrs)	Depth Start (mKB)	Depth End (mKB)	Phase	Op Code	Activity Code	Time P-T-X	Operation
06:00	06:30	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Pre-Job Safety Meeting with crew, Truck drivers RM , WSR prior to Rig Move. Discussed rig move procedures & hazards.
06:30	07:00	0.50	3.80	3.80	MIRU	MOVE	MOB	P	Start rig move from CON 163 to CON 156
07:00	07:30	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Conduct hazard hunt by rig crew prior to entering new location
07:30	11:30	4.00	3.80	3.80	MIRU	MOVE	MOB	P	Finish moving rig package to Condabri 156. Spot equipment. Last truck released @ 12:00
11:30	12:00	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Safety meeting w/rig crew, RM & WSR prior to tour.
12:00	14:00	2.00	3.80	3.80	MIRU	MOVE	RURD	P	Rigged up surf equipment. Prepared surface hole BHA and casing. Mix spud mud, Pressure tested surface lines.
14:00	14:30	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Test ESD's & perform muster drill.
14:30	15:00	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Hazard hunt.
15:00	15:30	0.50	3.80	3.80	MIRU	MOVE	SFTY	P	Pre-spud meeting.
15:30	19:00	3.50	3.80	123.00	SURFAC	DRILL	DRLG	P	Spud well & Drill 12 1/4" surface hole from 3.8m to 123m.
19:00	19:30	0.50	123.00	123.00	SURFAC	DRILL	CIRC	P	Circ & cond hole, pump 2 x 10 Bbl hi-vis sweeps.
19:30	20:30	1.00	123.00	123.00	SURFAC	CASING	TRIP	P	POOH & layout BHA.
20:30	21:00	0.50	123.00	123.00	SURFAC	CASING	SFTY	P	PJSM w/rig crew, RM & WSR prior to rigging to & running surf csg.
21:00	22:00	1.00	123.00	123.00	SURFAC	CASING	RNCS	P	Rig up to & run 10 jts of 9 5/8" surf csg set @ 120.2m.
22:00	22:30	0.50	123.00	123.00	SURFAC	CEMENT	SFTY	P	PJSM w/cementers, rig crew, RM & OSR prior to rigging to & cementing 9 5/8" csg
22:30	23:30	1.00	123.00	123.00	SURFAC	CEMENT	CMNT	P	Rig up cement head and surface lines. Pump 10 bbl water press test lines to 2500 psi. Pump 10 bbls water spacer. Mix and pump 36 bbls of 15.6 ppg cement. Drop plug and displace with 30 bbl water. Pump plug with 265psi hold 1500 psi 5 min. Bleed back 0.5bbl, floats held. Good returns throughout job 14 bbls cement returns to surface.
23:30	00:00	0.50	123.00	123.00	SURFAC	CEMENT	WOC	P	W.O.C. Prepare to nipple up BOP.

Report Printed: 18/11/2013

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 18/05/2013
Report #: 1
Depth Progress: 119.20 m
Depth End: 123.00 mKB
Rig Release Date: 21/05/2013

Fluid / Mud Checks

Time	Depth (mKB)	Density (lb/gal)	Funnel Viscosity (s/qt)	pH	PV Override (cp)	YP Override (lbf/100ft²)
18:00	97.00	8.50	30			

MBT (lb/bbl)	Chlorides (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sand (%)	T (fl) (°C)	API Filtrate (mL/30min)

Mud Lost to Hole (bbl)	Mud Lost (Surf) (bbl)	Daily Mud Cost	Cumulative Mud Cost	Cum Mud Lost to Surface (bbl)	Cum Mud Lost to Hol...

Last BOP Drill

Type	Days Since Last Check (days)	Last Date	Days Until Next Check (days)	Next Date	No. Occur
BOP Drill					

Safety Meetings / Operational Checks

Date	Type	Description	Tour	Comment
18/05/2013	Pre-Job Safety Meeting	Pre-Job Safety Meeting	Day	Pre-Job Safety Meeting with crew, Truck drivers RM , WSR prior to Rig Move. Discussed rig move procedures & hazards
18/05/2013	Pre-Tour Meeting	Pre-Tour Meeting	Day	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
18/05/2013	Test Rig ESD	Test Rig ESD	Day	Test ESD's & Muster drill
18/05/2013	Hazard Hunt	Hazard Hunt	Day	Conduct Hazard hunt & Muster drill
18/05/2013	Pre-Spud Meeting	Pre-Spud Meeting	Day	Conduct Pre-Spud Meeting
18/05/2013	Pre-Job Safety Meeting	Pre-Job Safety Meeting	Night	PJSM w/rig crew, NRM & NWSR prior to rigging to & running Surface csg Discussed procedures & hazards involved.
18/05/2013	Pre-Job Safety Meeting	Pre-Job Safety Meeting	Day	Held PJSM w/rig crew, cement crew, NRM & NWSR prior to cementing surface csg. Discussed hazards & procedures.

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 1

Nozzles (/32")	Depth In (mKB)	Depth Out (mKB)	Comment
14/14/14/14/14/14/14	3.80	123.00	

Bit Run	Drill Bit	IADC Bit Dull	Length (m)	BHA ROP (m/hr)
RR	12 1/4in, Reed Hycalog, RSFX510S, E155479	2-1-CT-N/S-X-0-NO-TD	0.25	

Drill String Components

Item Description	ID (in)	OD (in)	Jts	Len (m)	Cum Len (m)
HWDP	2.750	4	3	25.94	123.00
X/O 4 IF - 4 FH	2.500	6 1/4	1	0.42	97.06
Drill Collar	2.500	6 1/4	10	95.68	96.64
Bit Sub	2.500	8	1	0.71	0.96

Drilling Parameters: 3.80 - 123.00 mKB

Cum Depth Drilled (m)	Cum Drilling Time (hrs)	Interval ROP (m/hr)	Flow Rate (gpm)	Weight on Bit (lbf)	RPM (rpm)
119.20			400	12.0	120

Stand Pipe Pressure (psi)	Drill Str Wt (1000lbf)	SO Str Wt (1000lbf)	PU Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)	Drilling Torque
650.0	30	33	35	34	2,500.0

Fluid / Mud Additive Amounts

Description	Consumed	Cost (/unit)	Size	Units

Cement Fluids

Surface Casing Cement - Surface Cement, Top: 3.80 mKB; Bottom: 123.00 mKB

Density (lb/gal)	Class	Volume Pumped (bbl)	Cmnt Rtrn (bbl)	Top Measurement Method
15.60	A	36.0	14.0	Returns to Surface

CmprStr 1 (psi)	CmprStr 2 (psi)	Time of 1st Compressive Strength Test (hrs)	Time of 2nd Compressive Strength Test (hrs)	T(compr str) (°C)
100.0	500.0	2.16	4.44	30

Type	Add	Amount	Amount Units	Conc	Conc Unit
Accelerator	Calcium Chloride	156.0	lb	1.0	%BWOC
Cement	Class A Cement	166.0	sk	94.0	lb/sk
Defoamer	NF-6	1.0	gal	0.25	gal/10bblM

Logs

Type	Date	Run No.	Depth Top (mKB)	Depth Bottom (mKB)	Logging Company
	20/05/2013	2			Schlumberger
Calliper (Cal)	20/05/2013	1			Schlumberger
Density (DEN)	20/05/2013	1			Schlumberger
Deviation (GPIT)	20/05/2013	1			Schlumberger
Gamma Ray (GR)	20/05/2013	1			Schlumberger
Neutron (Neu)	20/05/2013	1			Schlumberger
Resistivity (Res)	20/05/2013	1			Schlumberger
Spontaneous Potential (SP)	20/05/2013	1			Schlumberger
Temperature Survey (Temp)	20/05/2013	1			Schlumberger
CBL	5/10/2013	1	586.00		Vause

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Undifferentiated			3.80
Gubberamunda Sst			180.00
Westbourne Fm			314.00
Springbok Sst.			431.00
Upper Juandah CM			539.00
Macalister Seam			565.00
Juandah Sst.			620.00
Lower Juandah CM			624.00
Tangalooma Sst.			749.00
Taroom CM			761.00
Eurombah Fm.			879.00

Pressure Test

Pressure Test	Stage of Oper	Reference	P/T Parameters	Compl...	Date Completed	Confirmed By	Comment
7" Casing Hanger	Landing Production Casing		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min
Production Casing	Post Plug Bump		2000psi/10...	Yes	21/05/2013	ROSS McKAY	2000psi/10min
A/B-Section	Wellhead N/U		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 19/05/2013
Report #: 2
Depth Progress: 762.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

State	Basin	District	Lease	Well Configuration Type
QUEENSLAND	SURAT	CONDABRI	PL 265	VERTICAL

Ground Elevation (m)	Original KB/RT Elevation (m)	Original Spud Date	AFE Duration Total (days)	Days From Spud (days)
313.00	316.80	18/05/2013		1.35

Daily Cost	Cumulative Cost	AFE Amount	AFE + Sup Amount	Project ID#	Work Order
49,609.83	129,041.36	282,771.66	282,771.66	153926	

Planned Depth (TMD) (mKB)	Wellbore	Head Count	Personnel Total Hours (hrs)	Cum Pers Tot Hr (hrs)
900.00	Original Hole	25.0	300.00	588.00

Like Kind Category	Road Condition	Weather	Temperature (°C)	Wind
Walloons preperf	Good	Cool	18	Calm

Operations @ Morning Report
RIH, Wiper trip, Wait on loggers.

Last 24hr Summary
Wait on cement, Nipple up and pressure test BOP's. Make up BHA, Run in hole. Pressure test BOP's and do accumulator draw down test. RIH, drill shoe track and 3m new hole to 126m. FIT w/ 8.4ppg Drill mud. Applied pressure = 93 psi. EMW = 12.92 ppg. Drill 8 3/4" production hole from 126m to 885m .(TD)

24hr Forecast
Circulate, POOH. Wiper trip, Wait on Wireline loggers, Run wireline logs. Run & cmt 7" production.

General Remarks
0000 - 0030 Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
0030 - 0300 POOH from 885m to 120m w/400 gpm, 350 m/hr. Flow checks @ 840m, 440m, 120m
0300 - 0330 Emergency Drill - Bomb Threat.
0330 - 0430 Wait on Loggers.
0430 - 0600 Commence Wiper Trip.

Daily Contacts
NIGHT DRLG SUPV, ROSS McKAY; DAY DRLG SUPV, DERRYLL PALIWODA

Last Casing String
Surface, 120.70mKB

Days LTI and Days RI

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
148.00	148.00

Observation Cards (BST, STOP, etc)

Comment	No. Rpts
1. Motorman took time out to correctly show Leasehand how to strap and drift casing. 2. All crew members were reminded again about the need for double eye protection while using high pressure cleaner. 3. Good communication was observed while crew members were changing out the head on the mud pump. 4. Correct hand and body placement was observed while the Floorhand and Motorhand were using the tongs. 5. Correct manual handling techniques were observed while crew members were unpacking pallets. 'Nose to Toes'	12

Time Log

Start Time	End Time	Dur (hrs)	Depth Start (mKB)	Depth End (mKB)	Phase	Op Code	Activity Code	Time P-T-X	Operation
00:00	00:30	0.50	123.00	123.00	SURFAC	CEMENT	SFTY	P	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
00:30	02:30	2.00	123.00	123.00	SURFAC	CEMENT	WOC	P	W.O.C. Prepare to nipple up BOP.
02:30	04:00	1.50	123.00	123.00	SURFAC	CEMENT	NUND	P	Backed out landing joint and laid down. Nippled up, Cleaned & inspected BOP's. Function tested BOP's.
04:00	04:30	0.50	123.00	123.00	SURFAC	CEMENT	BOPE	P	Pressure tested blind rams to 2" side outlets, check valve, casing, choke line and manual HCR. 250/ 1500 psi , 5/5 min.
04:30	05:00	0.50	123.00	123.00	SURFAC	CEMENT	SVRG	P	Rig Service - Inspect & Grease Top Drive.
05:00	06:30	1.50	123.00	123.00	SURFAC	CEMENT	TRIP	P	Function tested mud motor and make up 8 3/4" BHA. RIH to 100m.
06:30	08:00	1.50	123.00	123.00	SURFAC	CEMENT	BOPE	P	Pressure tested annular 250/1000 psi 5/5 min, Pipe rams, HCR, inside kill valve to 250/1500 psi, 5/5 min. Conducted accumulator draw down test.
08:00	08:30	0.50	123.00	123.00	SURFAC	CEMENT	SFTY	P	Conducted BOP drill. Well secure in 60sec. Discussed well control procedures, soft shut in. Power failure.
08:30	09:00	0.50	123.00	123.00	SURFAC	CEMENT	DRLG	P	RIH from 100 m Tag cement @ 120 m, drill shoe track and 3m new formation, 126 m.
09:00	10:00	1.00	123.00	126.00	SURFAC	CEMENT	FIT	P	Circulate hole clean & perform FIT at 128m w/ 8.4ppg water base drilling mud. Applied surface pressure 93psi, EMW 12.92 ppg.
10:00	12:00	2.00	126.00	280.00	PROD1	DRILL	DRLG	P	Drill 8 3/4" production hole from 126 m to 280 m. GPM 300/400gpm. SPP 1200/1600psi, Diff 300/600psi, WOB 8/12 klb.
12:00	12:30	0.50	280.00	280.00	PROD1	DRILL	SFTY	P	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
12:30	14:30	2.00	280.00	444.00	PROD1	DRILL	DRLG	P	Drill 8 3/4" production hole from 280 m to 444 m. GPM 300/400gpm. SPP 1200/1600psi, Diff 300/600psi, WOB 8/12 klb.Gas peaks @
14:30	15:00	0.50	444.00	444.00	PROD1	DRILL	SFTY	P	Conducted BOP drill.
15:00	18:00	3.00	444.00	625.00	PROD1	DRILL	DRLG	P	Drill 8 3/4" production hole from 444 m to 625m. GPM 300/400gpm. SPP 1200/1600psi, Diff 300/600psi, WOB 8/12 klb.
18:00	18:30	0.50	885.00	885.00	PROD1	DRILL	SVRG	P	Rig Service - Mud pump.
18:30	23:00	4.50	625.00	885.00	PROD1	DRILL	DRLG	P	Drill 8 3/4" production hole from 625m to 885m. GPM 300/400gpm. SPP 1200/1600psi, Diff 300/600psi, WOB 8/12 klb.Gas peaks @ 575m = 35.%, 698m = 34.6%, 788m = 29.2%, 832m = 37.3%
23:00	23:30	0.50	885.00	885.00	PROD1	EVALFM	CIRC	P	Pump 2 x 10bbl Hi-Vis sweep, Circulate & condition hole.

Report Printed: 18/11/2013

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 19/05/2013
Report #: 2
Depth Progress: 762.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

Time Log

Start Time	End Time	Dur (hrs)	Depth Start (mKB)	Depth End (mKB)	Phase	Op Code	Activity Code	Time P-T-X	Operation
23:30	00:00	0.50	885.00	885.00	PROD1	EVALFM	SVRG	P	Rig Service - Grease injector

Fluid / Mud Checks

Time	Depth (mKB)	Density (lb/gal)	Funnel Viscosity (s/qt)	pH	PV Override (cp)	YP Override (lbf/100ft²)
19:00	646.00	8.90	39	8.5	9.0	9.0

MBT (lb/bbl)	Chlorides (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sand (%)	T (fl) (°C)	API Filtrate (mL/30min)
12.0	18,000		17,999.999	0.3	26	7.5

Mud Lost to Hole (bbl)	Mud Lost (Surf) (bbl)	Daily Mud Cost	Cumulative Mud Cost	Cum Mud Lost to Surface (bbl)	Cum Mud Lost to Hol...
		7,578.20	7,578.20		

Last BOP Drill

Type	Days Since Last Check (days)	Last Date	Days Until Next Check (days)	Next Date	No. Occur
BOP Drill	0	19/05/2013	1	20/05/2013	2

Safety Meetings / Operational Checks

Date	Type	Description	Tour	Comment
19/05/2013	Pre-Tour Meeting	Pre-Tour Meeting	Night	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
19/05/2013	BOP Drill	BOP Drill	Day	Conducted BOP drill. Well secure in 60sec. Discussed well control procedures and everyone's roles and responsibilities.
19/05/2013	Pre-Tour Meeting	Pre-Tour Meeting	Day	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
19/05/2013	BOP Drill	BOP Drill	Day	Conducted BOP drill. Well secure in 60sec. Discussed well control procedures and everyone's roles and responsibilities.

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Nozzles (/32")	Depth In (mKB)	Depth Out (mKB)	Comment
15/15/15/15/15/15	123.00	885.00	

Bit Run	Drill Bit	IADC Bit Dull	Length (m)	BHA ROP (m/hr)
RR	8 3/4in, Reed Hycalog, SKF613M, A161335	1-1-CT-N/S-X-0-NO-TD	0.25	58.6

Drill String Components

Item Description	ID (in)	OD (in)	Jts	Len (m)	Cum Len (m)
Coil	3.120	3 1/2	1	791.00	885.00
Dimple sub		4 3/4	1	0.37	94.00
X/O 4 1/2 XH - 3 1/2 IF		6 1/4	1	0.30	93.63
Drill Collar	2.500	6 1/4	8	76.59	93.33
X/O 4 1/2 IF Pin - 4 IF Box		6 3/4	1	0.65	16.74
Float Sub		6 3/4	1	0.71	16.09
Mud Motor (S#: F67280, 4/5 Lobe, 7 Stage)		6 3/4	1	7.87	15.38
X/O 4 1/2 Reg Pin- 4 IF Pin		6 3/4		0.53	7.51
Stabilizer		8 3/4	1	1.71	6.98
Drill Collar		6 3/4	1	5.02	5.27

Drilling Parameters: 123.00 - 885.00 mKB

Cum Depth Drilled (m)	Cum Drilling Time (hrs)	Interval ROP (m/hr)	Flow Rate (gpm)	Weight on Bit (lbf)	RPM (rpm)
762.00	13.00	58.6	400	12.0	0

Stand Pipe Pressure (psi)	Drill Str Wt (1000lbf)	SO Str Wt (1000lbf)	PU Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)	Drilling Torque
	28	24	34	28	2,500.0

Fluid / Mud Additive Amounts

Description	Consumed	Cost (/unit)	Size	Units
Drispac Plus Regular	1.0	142.83	22.68	sacks
Soda Ash	1.0	22.97	25.0	sacks
BioCide	3.0	120.10	25.0	kg
Flowzan	7.0	178.89	25.0	sacks
Aus-Dex	36.0	76.25	25.0	sacks
Potassium Chloride	117.0	26.11	25.0	sacks

Logs

Type	Date	Run No.	Depth Top (mKB)	Depth Bottom (mKB)	Logging Company
	20/05/2013	2			Schlumberger
Calliper (Cal)	20/05/2013	1			Schlumberger
Density (DEN)	20/05/2013	1			Schlumberger
Deviation (GPIT)	20/05/2013	1			Schlumberger
Gamma Ray (GR)	20/05/2013	1			Schlumberger
Neutron (Neu)	20/05/2013	1			Schlumberger
Resistivity (Res)	20/05/2013	1			Schlumberger
Spontaneous Potential (SP)	20/05/2013	1			Schlumberger
Temperature Survey (Temp)	20/05/2013	1			Schlumberger
CBL	5/10/2013	1	586.00		Vause

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Undifferentiated			3.80
Gubberamunda Sst			180.00
Westbourne Fm			314.00
Springbok Sst.			431.00
Upper Juandah CM			539.00
Macalister Seam			565.00
Juandah Sst.			620.00
Lower Juandah CM			624.00
Tangalooma Sst.			749.00
Taroom CM			761.00
Eurombah Fm.			879.00

Pressure Test

Pressure Test	Stage of Oper	Reference	P/T Parameters	Compl...	Date Completed	Confirmed By	Comment
7" Casing Hanger	Landing Production Casing		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min
Production Casing	Post Plug Bump		2000psi/10...	Yes	21/05/2013	ROSS McKAY	2000psi/10min
A/B-Section	Wellhead N/U		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 20/05/2013
Report #: 3
Depth Progress: 0.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

State	Basin	District	Lease	Well Configuration Type
QUEENSLAND	SURAT	CONDABRI	PL 265	VERTICAL

Ground Elevation (m)	Original KB/RT Elevation (m)	Original Spud Date	AFE Duration Total (days)	Days From Spud (days)
313.00	316.80	18/05/2013		2.35

Daily Cost	Cumulative Cost	AFE Amount	AFE + Sup Amount	Project ID#	Work Order
119,136.71	248,178.07	282,771.66	282,771.66	153926	

Planned Depth (TMD) (mKB)	Wellbore	Head Count	Personnel Total Hours (hrs)	Cum Pers Tot Hr (hrs)
900.00	Original Hole	31.0	372.00	960.00

Like Kind Category	Road Condition	Weather	Temperature (°C)	Wind
Walloons preperf	Good	Fine	19	Calm

Operations @ Morning Report
Rig Release @ 0630.

Last 24hr Summary
POOH. Wait on loggers, Wiper Trip, Run wireline logs, Rig up & Run 7" Production Casing to 602m.

24hr Forecast
Move to Con 158, Rig up on Location.

General Remarks
0000 - 0030 Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
0030 - 0100 Run 7" Production Casing from 602to 880.68m. ACP Set @ 560.52 - 557.54m. Pick up wt 87klbs, String wt 65 klbs, Slack off wt 60 klbs.
0100 - 0130 Circulate casing 2 x annular capacity. Land out 7" hanger in A-section and pressure test to 3000psi for 5min.
0130 - 0200 Held PJSM w/rig crew, cement crew, RM & WSR prior to cementing Production csg. Discussed hazards & procedures.
0200 - 0330 Rig up cmt head and surface lines. Load dart.Pump 5 bbl water press test surface lines to 3000 psi 5 min. Displace dart with 72 bbl drilling mud. Inflate ACP with 1235 psi. Open stage tool with 2174 psi. Pump 5 bbl water spacer. Mix & pump 20 bbls Of Scavenger 10.5 ppg. Mix and pump 56 bbl 13.5 lead cement. Mix & pump 12 bbls Gas Tight cmt. Drop plug displace with 62bbl mud & 10 bbls water. Bump plug with 620psi hold 2000 psi. Hold 10 min. Bleed back 0.5 bbl. Floats held. Good returns throughout job, 10bbl of 13.5 cement returned to surface.
0330 - 0630 Lay out cmt head and landing joint. Flush & nipple down BOP's Clean mud tanks.Install B section. Rig Release @ 0630

Daily Contacts
DAY DRLG SUPV, DERRYLL PALIWODA; NIGHT DRLG SUPV, ROSS McKAY

Last Casing String
Production, 880.68mKB

Days LTI and Days RI

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
149.00	149.00

Observation Cards (BST, STOP, etc)

Comment	No. Rpts
1.Good body placement was observed while using rig tongs. 2.Teamwork nd correct isolation was used while fixing locking pins on loader. 3.Good communication was observed between the driller and third party wireline loggers while rigging up their tools. 4.Crew were observed following correct confined space work procedures.	11

Time Log

Start Time	End Time	Dur (hrs)	Depth Start (mKB)	Depth End (mKB)	Phase	Op Code	Activity Code	Time P-T-X	Operation
00:00	00:30	0.50	885.00	885.00	PROD1	EVALFM	SFTY	P	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
00:30	03:00	2.50	885.00	885.00	PROD1	EVALFM	TRIP	P	POOH from 885m to 120m w/400 gpm, 350 m/hr. Flow checks @ 840m, 440m, 120m
03:00	03:30	0.50	885.00	885.00	PROD1	EVALFM	SFTY	T	Emergency Drill - Bomb Threat.
03:30	04:30	1.00	885.00	885.00	PROD1	EVALFM	WAIT	T	Wait on Loggers.
04:30	08:30	4.00	885.00	885.00	PROD1	EVALFM	TRIP	T	Run back in hole for wiper trip.
08:30	09:00	0.50	885.00	885.00	PROD1	EVALFM	CIRC	T	Circ & cond hole
09:00	12:00	3.00	885.00	885.00	PROD1	EVALFM	TRIP	T	POOH from 885m to 240m @ 200m/hr & pump @ 300GPM w/flow checks @ 840m & 442m
12:00	12:30	0.50	885.00	885.00	PROD1	EVALFM	SFTY	T	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
12:30	13:30	1.00	885.00	885.00	PROD1	EVALFM	TRIP	T	Continue POOH from 240m to 94m @ 200m/hr & pump @ 300GPM w/flow check @ 117m
13:30	15:00	1.50	885.00	885.00	PROD1	EVALFM	WAIT	T	Wait on Loggers.
15:00	16:00	1.00	885.00	885.00	PROD1	EVALFM	TRIP	P	Disconnect coil, layout BHA & service mudmotor
16:00	16:30	0.50	885.00	885.00	PROD1	EVALFM	SFTY	P	Pre-job safety meeting w/Schlumberger, rig crew, WSR prior to rigging up loggers. Discussed procedures & hazards
16:30	21:30	5.00	885.00	885.00	PROD1	EVALFM	ELOG	P	Run 1: PEX-AIT-GPIT max dia. 6.75", tool string length= 15.72m, wt in air= 443 kgs. RIH f/ surface to TD at 6,000 ft/hr. Tag TD at 886.26m, - 1.26m off driller's depth. Log repeat pass from 886.26m to 795m at 1800ft/hr. RIH to 886.26m & logged from 886.26m to 10m at 1800ft/hr for main pass. POOH to surface at 1800 ft/hr. Monitored well on trip tank, static.
21:30	22:00	0.50	885.00	885.00	PROD1	CASING	SFTY	P	PJSM Reviewed rigging up and running Production casing procedures & hazards with crew.
22:00	00:00	2.00	885.00	885.00	PROD1	CASING	RNCS	P	Rig up & RIH with 7" perforated production casing to 602m

Report Printed: 18/11/2013

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 20/05/2013
Report #: 3
Depth Progress: 0.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

Fluid / Mud Checks

Time	Depth (mKB)	Density (lb/gal)	Funnel Viscosity (s/qt)	pH	PV Override (cp)	YP Override (lbf/100ft²)
00:00	885.00	8.90	38	8.7	6.0	10.0

MBT (lb/bbl)	Chlorides (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sand (%)	T (fl) (°C)	API Filtrate (mL/30min)
12.0	14,000		14,900.000	0.0	28	6.6

Mud Lost to Hole (bbl)	Mud Lost (Surf) (bbl)	Daily Mud Cost	Cumulative Mud Cost	Cum Mud Lost to Surface (bbl)	Cum Mud Lost to Hol...
		1,681.08	9,259.28		

Last BOP Drill

Type	Days Since Last Check (days)	Last Date	Days Until Next Check (days)	Next Date	No. Occur
BOP Drill	1	19/05/2013	0	20/05/2013	2

Safety Meetings / Operational Checks

Date	Type	Description	Tour	Comment
20/05/2013	Pre-Tour Meeting	Pre-Tour Meeting	Night	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
20/05/2013	Bomb Threat	Bomb Threat	Night	Conduct Emergency Drill - Bomb Threat. Well secured & all operations shutdown. Discussed Response & Evacuation Plans.
20/05/2013	Pre-Tour Meeting	Pre-Tour Meeting	Day	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
20/05/2013	Pre-Job Safety Meeting	Pre-Job Safety Meeting	Day	Pre-job safety meeting w/Schlumberger, rig crew, NRM & NWSR prior to rigging up loggers. Discussed procedures & hazards

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Nozzles (/32")	Depth In (mKB)	Depth Out (mKB)	Comment

Bit Run	Drill Bit	IADC Bit Dull	Length (m)	BHA ROP (m/hr)

Drill String Components

Item Description	ID (in)	OD (in)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth Drilled (m)	Cum Drilling Time (hrs)	Interval ROP (m/hr)	Flow Rate (gpm)	Weight on Bit (lbf)	RPM (rpm)

Stand Pipe Pressure (psi)	Drill Str Wt (1000lbf)	SO Str Wt (1000lbf)	PU Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)	Drilling Torque

Fluid / Mud Additive Amounts

Description	Consumed	Cost (/unit)	Size	Units
Flowzan	2.0	178.89	25.0	sacks
Soda Ash	5.0	22.97	25.0	sacks
Aus-Dex	9.0	76.25	25.0	sacks
Potassium Chloride	20.0	26.11	25.0	sacks

Logs

Type	Date	Run No.	Depth Top (mKB)	Depth Bottom (mKB)	Logging Company
	20/05/2013	2			Schlumberger
Calliper (Cal)	20/05/2013	1			Schlumberger
Density (DEN)	20/05/2013	1			Schlumberger
Deviation (GPIT)	20/05/2013	1			Schlumberger
Gamma Ray (GR)	20/05/2013	1			Schlumberger
Neutron (Neu)	20/05/2013	1			Schlumberger
Resistivity (Res)	20/05/2013	1			Schlumberger
Spontaneous Potential (SP)	20/05/2013	1			Schlumberger
Temperature Survey (Temp)	20/05/2013	1			Schlumberger
CBL	5/10/2013	1	586.00		Vause

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Undifferentiated			3.80
Gubberamunda Sst			180.00
Westbourne Fm			314.00
Springbok Sst.			431.00
Upper Juandah CM			539.00
Macalister Seam			565.00
Juandah Sst.			620.00
Lower Juandah CM			624.00
Tangalooma Sst.			749.00
Taroom CM			761.00
Eurombah Fm.			879.00

Pressure Test

Pressure Test	Stage of Oper	Reference	P/T Parameters	Compl...	Date Completed	Confirmed By	Comment
7" Casing Hanger	Landing Production Casing		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min
Production Casing	Post Plug Bump		2000psi/10...	Yes	21/05/2013	ROSS McKAY	2000psi/10min
A/B-Section	Wellhead N/U		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 21/05/2013
Report #: 4
Depth Progress: 0.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

State	Basin	District	Lease	Well Configuration Type
QUEENSLAND	SURAT	CONDABRI	PL 265	VERTICAL

Ground Elevation (m)	Original KB/RT Elevation (m)	Original Spud Date	AFE Duration Total (days)	Days From Spud (days)
313.00	316.80	18/05/2013		2.63

Daily Cost	Cumulative Cost	AFE Amount	AFE + Sup Amount	Project ID#	Work Order
41,319.90	289,497.97	282,771.66	282,771.66	153926	

Planned Depth (TMD) (mKB)	Wellbore	Head Count	Personnel Total Hours (hrs)	Cum Pers Tot Hr (hrs)
900.00	Original Hole	31.0	201.70	1,161.70

Like Kind Category	Road Condition	Weather	Temperature (°C)	Wind
Walloons preperf	Good	Fine	3	Calm

Operations @ Morning Report
Rig Release @ 0630.

Last 24hr Summary
Finish running 7" production casing. Land csg shoe @ 880.68Set ACP @ 557.54m - 560.52m. Cement prod casing. Good returns throughout job, w/10 bbl of 13.5ppg cement returns to surface. R/D Halliburton. Nipple down BOP's, dump and clean mud tanks. Install "B" section, pressure test to 3000 psi. Rig Release @ 06:30 hrs.

24hr Forecast
Move to Con 158, Rig up on Location.

General Remarks
Rig Release @ 0630.

Daily Contacts
DAY DRLG SUPV, DERRYLL PALIWODA; NIGHT DRLG SUPV, ROSS McKAY

Last Casing String
Production, 880.68mKB

Days LTI and Days RI

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
150.00	150.00

Observation Cards (BST, STOP, etc)

Comment	No. Rpts

Time Log

Start Time	End Time	Dur (hrs)	Depth Start (mKB)	Depth End (mKB)	Phase	Op Code	Activity Code	Time P-T-X	Operation
00:00	00:30	0.50	914.00	914.00	PROD1	CASING	SFTY	P	Pre-Tour Meeting. Discussed the days operations & reviewed SOPS.
00:30	01:00	0.50	914.00	914.00	PROD1	CASING	RNCS	P	RIH from 820m with 7" perforated production casing w/ACP to be set @ 557.54m to 560.52m. and csg shoe @ 880.68m. Pick up wt 87klbs, String wt 65 klbs, Slack off wt 60 klbs,
01:00	01:30	0.50	914.00	914.00	PROD1	CASING	CIRC	P	Circulate casing 2 x annular capacity. Land out 7" hanger in A-section and pressure test to 3000psi for 5min.
01:30	02:00	0.50	914.00	914.00	PROD1	CEMENT	SFTY	P	Held PJSM w/rig crew, cement crew, RM & WSR prior to cementing Production csg. Discussed hazards & procedures.
02:00	03:30	1.50	914.00	914.00	PROD1	CEMENT	CMNT	P	Rig up cmt head and surface lines. Load dart.Pump 5 bbl water press test surface lines to 3000 psi 5 min. Displace dart with 72.5 bbl drilling mud. Inflate ACP with 1028 psi. Open stage tool with 2244 psi. Pump 5 bbl water spacer. Mix & pump 20 bbls Of Scavenger 10.5 ppg. Mix and pump 69 bbl 13.5 lead cement. Mix & pump 12 bbls Gas Tight cmt. Drop plug displace with 72 bbl mud & 10 bbls water. Bump plug with 620psi hold 2000 psi. Hold 10 min. Bleed back 0.5bbl. Floats held. Good returns throughout job, 10 bbl of cement returned to surface.
03:30	06:30	3.00	914.00	914.00	DEMOB	MOVE	RURD	P	Lay out cmt head and landing joint. Flush & nipple down BOP's Clean mud tanks.Install B section. Rig Release @ 0630

Fluid / Mud Checks

Time	Depth (mKB)	Density (lb/gal)	Funnel Viscosity (s/qt)	pH	PV Override (cp)	YP Override (lbf/100ft²)

MBT (lb/bbl)	Chlorides (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sand (%)	T (fl) (°C)	API Filtrate (mL/30min)

Mud Lost to Hole (bbl)	Mud Lost (Surf) (bbl)	Daily Mud Cost	Cumulative Mud Cost	Cum Mud Lost to Surface (bbl)	Cum Mud Lost to Hol...
			9,259.28		

Last BOP Drill

Type	Days Since Last Check (days)	Last Date	Days Until Next Check (days)	Next Date	No. Occur
BOP Drill	1	19/05/2013	0	21/05/2013	2

Safety Meetings / Operational Checks

Date	Type	Description	Tour	Comment
21/05/2013	Pre-Job Safety Meeting	Pre-Job Safety Meeting	Night	Held PJSM w/rig crew, cement crew, NRM & NWSR prior to cementing Production csg. Discussed hazards & procedures.

Safety Incidents

Date	Comment	Category

Daily Drilling

CONDABRI 156

Rig: SAVANNA 406

Report Date: 21/05/2013
Report #: 4
Depth Progress: 0.00 m
Depth End: 885.00 mKB
Rig Release Date: 21/05/2013

Drill Strings: BHA # <BHA No.?>

Nozzles (/32")	Depth In (mKB)	Depth Out (mKB)	Comment

Bit Run	Drill Bit	IADC Bit Dull	Length (m)	BHA ROP (m/hr)

Drill String Components

Item Description	ID (in)	OD (in)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth Drilled (m)	Cum Drilling Time (hrs)	Interval ROP (m/hr)	Flow Rate (gpm)	Weight on Bit (lbf)	RPM (rpm)

Stand Pipe Pressure (psi)	Drill Str Wt (1000lbf)	SO Str Wt (1000lbf)	PU Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)	Drilling Torque

Fluid / Mud Additive Amounts

Description	Consumed	Cost (/unit)	Size	Units

Cement Fluids

Production Casing Cement - Lead Cement, Top: 3.80 mKB; Bottom: 420.90 mKB

Density (lb/gal)	Class	Volume Pumped (bbl)	Cmnt Rtrn (bbl)	Top Measurement Method
13.50	A	69.0	10.0	Returns to Surface

CmprStr 1 (psi)	CmprStr 2 (psi)	Time of 1st Compressive Strength Test (hrs)	Time of 2nd Compressive Strength Test (hrs)	T(compr str) (°C)
500.0	2,231.0	6.45	72.00	41

Type	Add	Amount	Amount Units	Conc	Conc Unit
Cement	Class A Cement	159.0	sk	94.0	lb/sk
Cement	Pozmix A	3,291.0	lb	20.0	%BWOC
Extender	Econolite Powder	164.0	lb	1.0	%BWOW
Fluid Loss	Halad 344	114.0	lb	0.7	%BWOC

Production Casing Cement - Tail Cement, Top: 420.90 mKB; Bottom: 557.54 mKB

Density (lb/gal)	Class	Volume Pumped (bbl)	Cmnt Rtrn (bbl)	Top Measurement Method
15.20	A	12.0		

CmprStr 1 (psi)	CmprStr 2 (psi)	Time of 1st Compressive Strength Test (hrs)	Time of 2nd Compressive Strength Test (hrs)	T(compr str) (°C)

Type	Add	Amount	Amount Units	Conc	Conc Unit
Accelerator	Calcium Chloride	42.0	lb	1.0	%BWOW
Cement	Class A Cement	47.0	sacks	94.0	lbs/sx
Fluid Loss	Halad 344	17.0	lb	0.4	%BWOW
Friction Reducer	CFR-3	21.0	lb	0.5	%BWOW

Logs

Type	Date	Run No.	Depth Top (mKB)	Depth Bottom (mKB)	Logging Company
	20/05/2013	2			Schlumberger
Calliper (Cal)	20/05/2013	1			Schlumberger
Density (DEN)	20/05/2013	1			Schlumberger
Deviation (GPIT)	20/05/2013	1			Schlumberger
Gamma Ray (GR)	20/05/2013	1			Schlumberger
Neutron (Neu)	20/05/2013	1			Schlumberger
Resistivity (Res)	20/05/2013	1			Schlumberger
Spontaneous Potential (SP)	20/05/2013	1			Schlumberger
Temperature Survey (Temp)	20/05/2013	1			Schlumberger
CBL	5/10/2013	1	586.00		Vause

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Undifferentiated			3.80
Gubberamunda Sst			180.00
Westbourne Fm			314.00
Springbok Sst.			431.00
Upper Juandah CM			539.00
Macalister Seam			565.00
Juandah Sst.			620.00
Lower Juandah CM			624.00
Tangalooma Sst.			749.00
Taroom CM			761.00
Eurombah Fm.			879.00

Pressure Test

Pressure Test	Stage of Oper	Reference	P/T Parameters	Compl...	Date Completed	Confirmed By	Comment
7" Casing Hanger	Landing Production Casing		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min
Production Casing	Post Plug Bump		2000psi/10...	Yes	21/05/2013	ROSS McKAY	2000psi/10min
A/B-Section	Wellhead N/U		3000psi/5...	Yes	21/05/2013	ROSS McKAY	3000psi/5min

APPENDIX 3 – WELL LOCATION SURVEY

SURVEY PLAN

Scale 1: 30000 — Lengths are in Metres.

500 0 500 1000 1500 2000 2500 3000 3500 4000 4500

BM's are deep driven star pickets in concrete collar with witness post.

Co-ordinates obtained by RTK/GPS.

Distances are 'grid'.

N

OPM 129725

153°59'40" 5979.31 (Not to Scale)

51°56'05" 11 050.58 (Not to Scale)

Parish of Picurda

KOGAN - CONDAMINE ROAD

"Condabri #156"

"Condabri #158"

70°34'40" 783.0

179°20'30" 955.22

71°27'15" 2367.79

6°05'05" 767.39

"Condabri #159"

85°18'05" 833.55

"Condabri #162"

135°51'45" 709.33

179°02'05" 1210.27

"Condabri #161"

150°33'25" 726.59

"Condabri #163"

161 FTY1867 (State Forest)

37°49'30" 1963.06

ROAD

CS BMI

48 SP245917

66°15' 1809.91

148°24'40" 1831.99

Emt X SP249513

Emt W SP249512

PSM 187253

5°46' 19.21 SOUTH COND TBMI

Emt D SP245917

Emt E SP245917

1 SP245917

7°49'40" 1499.63

OPM 10138

(Not to Scale) 6723.49 285°35'55"

2 SP179380

BM CS107

108°44'15" 988.1

"Condabri #166"

56°53'55" 674.24

57°09'05" 659.95

179°53'55" 1084.80

"Condabri #165"

1227.39

"Condabri #167"

69°14' 33.39

76°40'15" 2868.5

OP

PM133638

Emt A RP134171

100°24'20" 3042.38

Emt B SP179331

PL265

350°34'10"

26°55'10" 776.36

32°14'45" 131.1

107°48'20" 1170.38

"Condabri #169"

64°30'30" 805.72

100°26'55" 679.85

"Condabri #168"

177°23'45" 1450.95

Emt A RG566

ELERSLEA LANE

1 SP179380

Emt A RP134172

Emt C SP179332

376.11 320°53'55"

WEDCON 4

ROAD

62°17'55" 432.72

341°23'35" 1274.12

26°39'10" 1438.22

Str Pkt 9000

138°58' 1314.8

"Condabri #173"

"Condabri #174"

179°48'20" 846.14

52 RG46

COOLOOMALA CREEK

38°19'55" 999.45

1571.31 323°14'25"

"Condabri #181"

WEDCON 1

53 RG47

83 RG41

48°21'30" 586.24

PSM 158502

Emt D SP179333

WEDCON 3

38°56'40" 908.16

1080.9 191°32'45"

78°27'30" 1342.48

297°23'35" 769.26

WEDCON 2

314°51'20"

"Condabri #178"

1603.11 298°02'35"

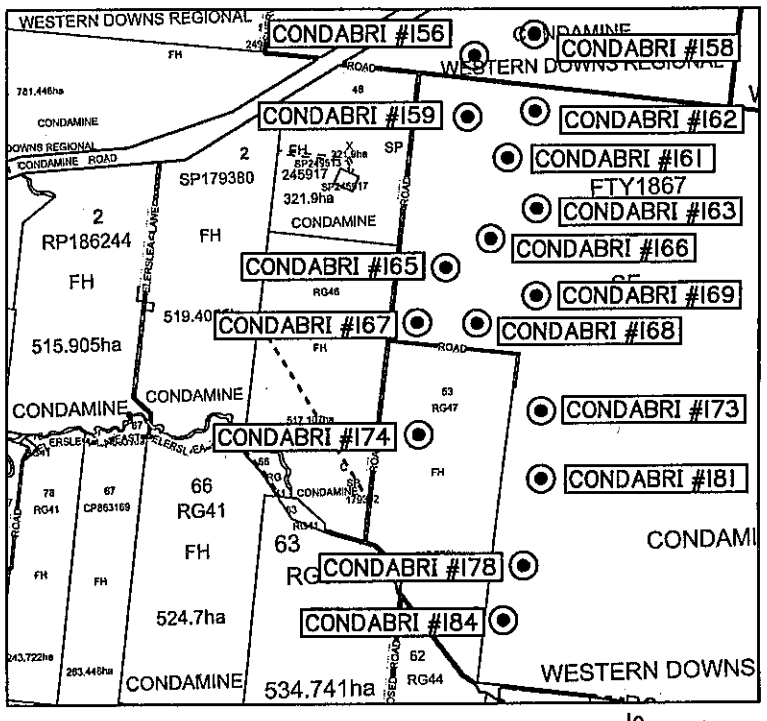
716.47 200°50'35"

"Condabri #184"

ELERSLEA EAST

Locality

Not to Scale



0 50 mm 100 mm 150 mm

State copyright reserved.

I, John Robert CAMPBELL
hereby certify that I have surveyed the location of the petroleum well as shown on this plan, that the survey was performed in accordance with the *Petroleum and Gas (Production and Safety) Act 2004* and associated Regulations and Standards and achieves the accuracies of the Standards and the survey was completed on 20/06/2013.

Licensed Surveyor

Date 15.7.13

MINING RESOURCES

Plan of Condabri #156, #158, #159, #161, #162, #163, #165–#169, #173, #174, #178, #181 & #184.

PARISH: ***CONDAMINE*** COUNTY: *Rogers*

LOCALITY: *CONDAMINE* LOCAL AUTHORITY: *Western Downs R.C*

SCALE: *1:30000*

Mining District: *Dalby*

MP43731

Catalogued:	Examined:	Registered:	Drawn by:	Meridian:	Field Notes:
../../..	../../..	../../.. Chief Surveyor	JMB	MGA by RTK/GPS Zone 56	NO

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ADDITIONAL SHEET

Origin of Co-ords MGA/AHD Zone 56

Station	Easting	Northing	Height
OPM 10138	215304.204	7018477.976	282.913

MGA Co-ords Zone 56

Station	Easting	Northing	Height
OPM 129725	224004.485	7025291.226	300.963
PSM133638	221780.086	7016670.124	298.63
PSM158502	224152.212	7013751.413	301.423
PSM187253	221986.262	7018174.891	294.995
WEDCON1	224590.32	7014140.95	303.09
WEDCON2	224835.21	7013397.48	305.85
WEDCON3	226150.54	7013666.09	313.81
WEDCON4	224803.66	7016132.48	304.99
STR PKT 9000	225855.361	7016210.347	309.625
CS BM1	223642.895	7018903.822	300.727
BM CS107	224602.536	7017343.283	304.801
SOUTH COND TBM1	221984.334	7018155.783	295.11
"CONDABRI #156"	225887.719	7019656.946	310.66
"CONDABRI #158"	226626.161	7019917.314	314.97
"CONDABRI #159"	225806.381	7018893.879	310.15
"CONDABRI #161"	226300.345	7018384.806	313.92
"CONDABRI #162"	226637.127	7018962.161	315.76
"CONDABRI #163"	226657.512	7017752.066	315.47
"CONDABRI #165"	225538.264	7017025.878	308.67
"CONDABRI #166"	226092.697	7017383.843	312.19
"CONDABRI #167"	225186.784	7016333.635	306.66
"CONDABRI #168"	225925.312	7016321.229	309.44
"CONDABRI #169"	226652.588	7016667.999	314.61
"CONDABRI #173"	226718.515	7015218.547	313.42
"CONDABRI #174"	225210.188	7014924.957	305.28
"CONDABRI #178"	226505.032	7013313.389	315.9
"CONDABRI #181"	226721.389	7014372.415	313.36
"CONDABRI #184"	226250.111	7012643.802	313.13

Geographical Co-ords GDA Zone 56

Station	Latitude	Longitude	Convergence
"CONDABRI #156"	-26°55'04.78129"	150°14'23.38353"	-1°15'01.266"
"CONDABRI #158"	-26°54'56.85082"	150°14'50.33248"	-1°14'48.703"
"CONDABRI #159"	-26°55'29.49693"	150°14'19.83431"	-1°15'03.938"
"CONDABRI #161"	-26°55'46.37416"	150°14'37.32295"	-1°14'56.728"
"CONDABRI #162"	-26°55'27.86823"	150°14'49.97659"	-1°14'50.194"
"CONDABRI #163"	-26°56'07.16910"	150°14'49.76046"	-1°14'51.976"
"CONDABRI #165"	-26°56'29.95190"	150°14'08.64391"	-1°15'11.616"
"CONDABRI #166"	-26°56'18.72380"	150°14'29.01065"	-1°15'01.889"
"CONDABRI #167"	-26°56'52.17586"	150°13'55.36267"	-1°15'18.602"
"CONDABRI #168"	-26°56'53.10325"	150°14'22.10654"	-1°15'06.500"
"CONDABRI #169"	-26°56'42.36045"	150°14'48.72659"	-1°14'53.953"
"CONDABRI #173"	-26°57'29.46427"	150°14'49.97053"	-1°14'55.406"
"CONDABRI #174"	-26°57'37.92535"	150°13'55.09214"	-1°15'20.696"
"CONDABRI #178"	-26°58'31.16479"	150°14'40.72981"	-1°15'02.249"
"CONDABRI #181"	-26°57'56.93637"	150°14'49.40632"	-1°14'56.839"
"CONDABRI #184"	-26°58'52.72233"	150°14'30.96258"	-1°15'07.612"

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Insert Plan Number **MP43731**

0 50 mm 100 mm 150 mm

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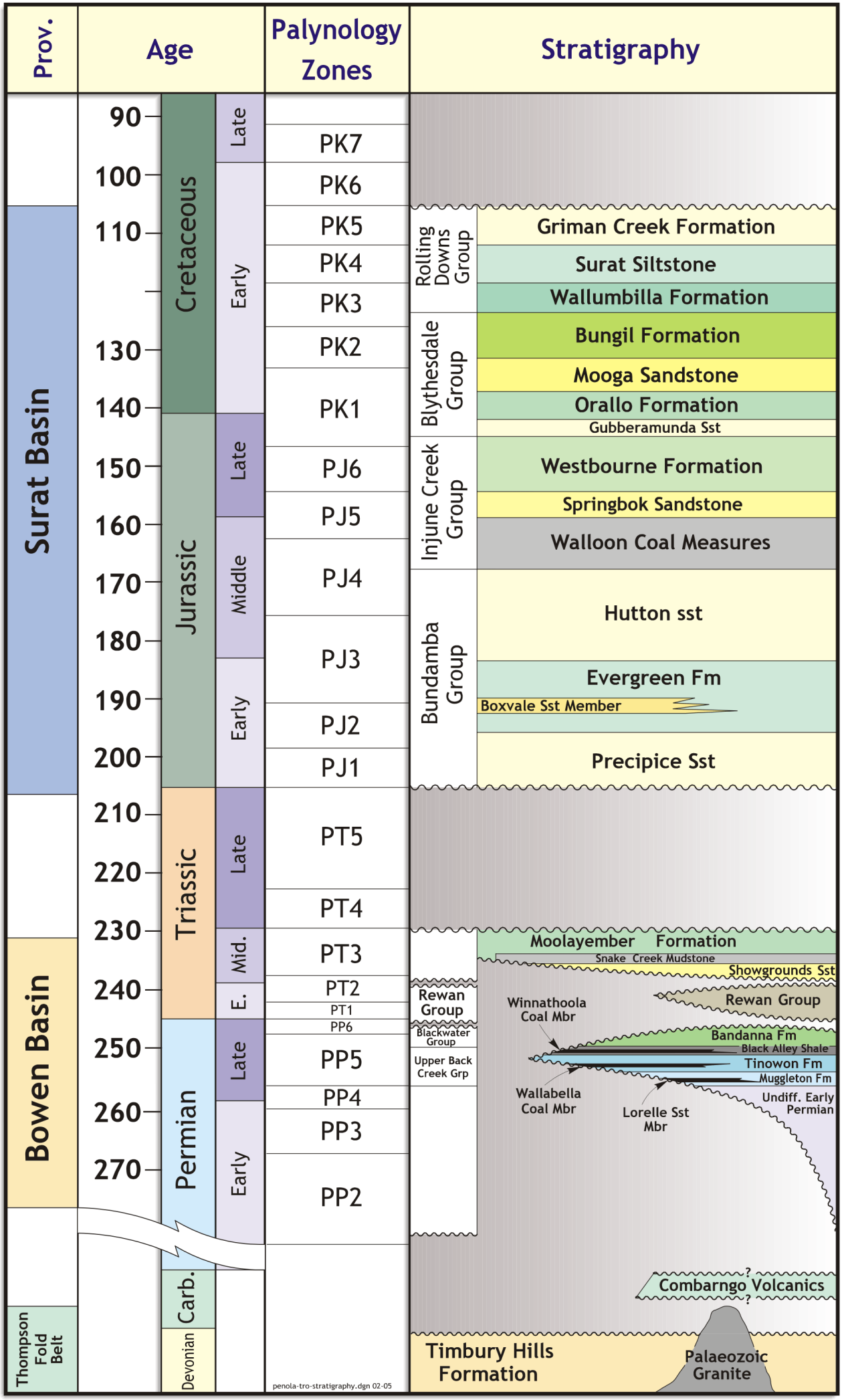
APPENDIX 4 – SURAT BASIN STRATIGRAPHY


Prov.
Age
Palynology Zones
Stratigraphy
Surat Basin
Bowen Basin
Thompson Fold Belt
90
100
110
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
Cretaceous
Jurassic
Triassic
Permian
Carb.
Devonian
Late
Early
Middle
Mid.
E.
PK7
PK6
PK5
PK4
PK3
PK2
PK1
PJ6
PJ5
PJ4
PJ3
PJ2
PJ1
PT5
PT4
PT3
PT2
PT1
PP6
PP5
PP4
PP3
PP2
Rolling Downs Group
Griman Creek Formation
Surat Siltstone
Wallumbilla Formation
Blythesdale Group
Bungil Formation
Mooga Sandstone
Orallo Formation
Gubberamunda Sst
Injune Creek Group
Westbourne Formation
Springbok Sandstone
Walloon Coal Measures
Bundamba Group
Hutton sst
Evergreen Fm
Boxvale Sst Member
Precipice Sst
Moolayember Formation
Snake Creek Mudstone
Showgrounds Sst
Rewan Group
Winnathoola Coal Mbr
Rewan Group
Blackwater Group
Upper Back Creek Grp
Bandanna Fm
Black Alley Shale
Tinowon Fm
Muggleton Fm
Wallabella Coal Mbr
Lorelle Sst Mbr
Undiff. Early Permian
Combarngo Volcanics
?
?
Timbury Hills Formation
Palaeozoic Granite
penola-tro-stratigraphy.dgn 02-05

APPENDIX 5 – CASING TALLIES

Casing Tally

CONDABRI 156

Hint: You must first enter the Casing Section information. You can then enter joints through a casing tally if you want. Double-click on the tally section of this report then click on the "Edit Tally" button that will appear on the right side of the window on the right.

Casing Section Information

Casing Description	Set Depth (mKB)	Run Date
Surface	120.70	18/05/2013

Casing Run Tally

Run?	Ref No.	Item Description	OD Nominal (in)	Wt (lbs/ft)	Grade	Top Thread	Len (m)	Centralized?	Ext Jwlry	Top (mKB)	Cum Len (m)
Yes		Float Shoe	9 5/8	36.00	K-55	BTC	0.50	No		120.20	0.50
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.60	Yes		108.60	12.10
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.45	No		97.15	23.55
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.63	Yes		85.52	35.18
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.59	No		73.93	46.77
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.61	Yes		62.32	58.38
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.69	No		50.63	70.07
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.40	Yes		39.23	81.47
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.61	No		27.62	93.08
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.53	Yes		16.09	104.61
Yes		Casing Joints	9 5/8	36.00	K-55	BTC	11.78	No		4.31	116.39
Yes		9-5/8" STS Casing Head	9 5/8	36.00	K-55		0.71	No		3.60	117.10

Casing Tally

CONDABRI 156

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Casing Section Information

Casing Description	Set Depth (mKB)	Run Date
Production	880.68	20/05/2013

Casing Run Tally

Run?	Ref No.	Item Description	OD Nominal (in)	Wt (lbs/ft)	Grade	Top Thread	Len (m)	Centralized?	Ext Jwlry	Top (mKB)	Cum Len (m)
Yes	1	GS	7	23.00	k55	BTC	0.28	No		880.40	0.28
Yes	2	CSG	7	23.00	K55	BTC	11.58	Yes		868.82	11.86
Yes	3	CSG	7	23.00	K55	BTC	11.25	No		857.57	23.11
Yes	4	CSG	7	23.00	K55	BTC	11.53	No		846.04	34.64
Yes	5	Perf	7	23.00	K55	BTC	11.63	No		834.41	46.27
Yes	6	Perf	7	23.00	K55	BTC	11.67	No		822.74	57.94
Yes	7	Perf	7	23.00	K55	BTC	11.45	No		811.29	69.39
Yes	8	Perf	7	23.00	K55	BTC	11.53	No		799.76	80.92
Yes	9	Perf	7	23.00	K55	BTC	11.67	No		788.09	92.59
Yes	10	Perf	7	23.00	K55	BTC	11.21	No		776.88	103.80
Yes	11	Perf	7	23.00	K55	BTC	11.23	No		765.65	115.03
Yes	12	Perf	7	23.00	K55	BTC	11.22	No		754.43	126.25
Yes	13	Perf	7	23.00	K55	BTC	11.32	No		743.11	137.57
Yes	14	Perf	7	23.00	K55	BTC	11.35	No		731.76	148.92
Yes	15	Perf	7	23.00	K55	BTC	11.67	No		720.09	160.59
Yes	16	Perf	7	23.00	K55	BTC	11.40	No		708.69	171.99
Yes	17	Perf	7	23.00	K55	BTC	11.40	No		697.29	183.39
Yes	18	Perf	7	23.00	K55	BTC	11.34	No		685.95	194.73
Yes	19	Perf	7	23.00	K55	BTC	11.10	No		674.85	205.83
Yes	20	Perf	7	23.00	K55	BTC	11.55	No		663.30	217.38
Yes	21	Perf	7	23.00	K55	BTC	11.45	No		651.85	228.83
Yes	22	Perf	7	23.00	K55	BTC	11.20	No		640.65	240.03
Yes	23	Perf	7	23.00	K55	BTC	11.23	No		629.42	251.26
Yes	24	Perf	7	23.00	K55	BTC	11.31	No		618.11	262.57
Yes	25	Perf	7	23.00	K55	BTC	11.43	No		606.68	274.00
Yes	26	Perf	7	23.00	K55	BTC	11.46	No		595.22	285.46
Yes	27	Perf	7	23.00	K55	BTC	11.40	No		583.82	296.86
Yes	28	Perf	7	23.00	K55	BTC	11.46	No		572.36	308.32
Yes	29	Perf	7	23.00	K55	BTC	11.46	Yes		560.90	319.78
Yes	30	FC	7	23.00	K55	BTC	0.38	No		560.52	320.16
Yes	31	ACP	7	23.00	K55	BTC	2.98	No		557.54	323.14
Yes	32	Stage tool	7	23.00	K55	BTC	0.71	No		556.83	323.85
Yes	33	ACP Pup	7	23.00	K55	BTC	2.71	No		554.12	326.56
Yes	34	Pup	7	23.00	K55	BTC	1.96	Yes		552.16	328.52
Yes	35	Pup	7	23.00	K55	BTC	2.97	No		549.19	331.49
Yes	36	CSG	7	23.00	K55	BTC	11.31	No		537.88	342.80
Yes	37	CSG	7	23.00	K55	BTC	11.60	Yes		526.28	354.40
Yes	38	CSG	7	23.00	K55	BTC	11.08	No		515.20	365.48
Yes	39	CSG	7	23.00	K55	BTC	11.60	Yes		503.60	377.08
Yes	40	CSG	7	23.00	K55	BTC	11.30	No		492.30	388.38
Yes	41	CSG	7	23.00	K55	BTC	11.31	No		480.99	399.69
Yes	42	CSG	7	23.00	K55	BTC	11.64	Yes		469.35	411.33
Yes	43	CSG	7	23.00	K55	BTC	11.42	No		457.93	422.75
Yes	44	CSG	7	23.00	K55	BTC	11.38	Yes		446.55	434.13
Yes	45	CSG	7	23.00	K55	BTC	11.43	No		435.12	445.56
Yes	46	CSG	7	23.00	K55	BTC	11.40	No		423.72	456.96
Yes	47	CSG	7	23.00	K55	BTC	11.04	Yes		412.68	468.00
Yes	48	CSG	7	23.00	K55	BTC	11.17	No		401.51	479.17
Yes	49	CSG	7	23.00	K55	BTC	10.93	Yes		390.58	490.10
Yes	50	CSG	7	23.00	K55	BTC	10.98	No		379.60	501.08
Yes	51	CSG	7	23.00	K55	BTC	11.17	No		368.43	512.25
Yes	52	CSG	7	23.00	K55	BTC	11.37	Yes		357.06	523.62
Yes	53	CSG	7	23.00	K55	BTC	11.24	No		345.82	534.86
Yes	54	CSG	7	23.00	K55	BTC	11.22	Yes		334.60	546.08
Yes	55	CSG	7	23.00	K55	BTC	11.15	No		323.45	557.23
Yes	56	CSG	7	23.00	K55	BTC	11.19	No		312.26	568.42
Yes	57	CSG	7	23.00	K55	BTC	11.64	Yes		300.62	580.06
Yes	58	CSG	7	23.00	K55	BTC	11.38	No		289.24	591.44

Casing Tally

CONDABRI 156

Hint: You must first enter the Casing Section information. You can then enter joints through a casing tally if you want. Double-click on the tally section of this report then click on the "Edit Tally" button that will appear on the right side of the window on the right.

Casing Run Tally

Run?	Ref No.	Item Description	OD Nominal (in)	Wt (lbs/ft)	Grade	Top Thread	Len (m)	Centralized?	Ext Jwlry	Top (mKB)	Cum Len (m)
Yes	59	CSG	7	23.00	K55	BTC	11.21	Yes		278.03	602.65
Yes	60	CSG	7	23.00	K55	BTC	11.50	No		266.53	614.15
Yes	61	CSG	7	23.00	K55	BTC	11.52	No		255.01	625.67
Yes	62	CSG	7	23.00	K55	BTC	11.94	Yes		243.07	637.61
Yes	63	CSG	7	23.00	K55	BTC	11.14	No		231.93	648.75
Yes	64	CSG	7	23.00	K55	BTC	11.32	Yes		220.61	660.07
Yes	65	CSG	7	23.00	K55	BTC	11.21	No		209.40	671.28
Yes	66	CSG	7	23.00	K55	BTC	11.51	No		197.89	682.79
Yes	67	CSG	7	23.00	K55	BTC	11.25	Yes		186.64	694.04
Yes	68	CSG	7	23.00	K55	BTC	11.43	No		175.21	705.47
Yes	69	CSG	7	23.00	K55	BTC	11.34	Yes		163.87	716.81
Yes	70	CSG	7	23.00	K55	BTC	11.21	No		152.66	728.02
Yes	71	CSG	7	23.00	K55	BTC	11.57	No		141.09	739.59
Yes	72	CSG	7	23.00	K55	BTC	11.10	Yes		129.99	750.69
Yes	73	CSG	7	23.00	K55	BTC	11.19	No		118.80	761.88
Yes	74	CSG	7	23.00	K55	BTC	11.33	Yes		107.47	773.21
Yes	75	CSG	7	23.00	K55	BTC	11.72	No		95.75	784.93
Yes	76	CSG	7	23.00	K55	BTC	11.35	No		84.40	796.28
Yes	77	CSG	7	23.00	K55	BTC	11.52	No		72.88	807.80
Yes	78	CSG	7	23.00	K55	BTC	11.43	No		61.45	819.23
Yes	79	CSG	7	23.00	K55	BTC	11.88	No		49.57	831.11
Yes	80	CSG	7	23.00	K55	BTC	11.14	No		38.43	842.25
Yes	81	CSG	7	23.00	K55	BTC	11.28	No		27.15	853.53
Yes	82	CSG	7	23.00	K55	BTC	11.25	No		15.90	864.78
Yes	83	CSG	7	23.00	K55	BTC	11.82	No		4.08	876.60
Yes	84	STS Pup	7	23.00	K55	BTC	0.54	No		3.54	877.14

APPENDIX 6 – CEMENTING SERVICE REPORTS

Origin Energy
Level 3, 135 Coronation Drive
Milton QLD 4064

Condabri 156-159 and 162
Savanna 406
Generic Cement Program

Prepared for Saleem Fatah
24th April, 2013
Revision: 0

Submitted by Dave O'Hagan
Halliburton Australia Pty. Ltd.
Level 17, 444 Queen St, Brisbane QLD, 4000
Ph: +61 7 3811 6014
Email: David.O'Hagan@Halliburton.com

HALLIBURTON

24th April, 2013

TO: Origin Energy
ATT: Saleem Fatah
RE: Condabri 156-159 and 162 - Generic Cement Program Revision 0

Dear Saleem,

Please find attached Condabri 156-159 and 162 - Generic Cement Program for review.

Included are cement slurry recommendations for the following:

- 9-5/8" Surface Casing to 127m
  - 15.6 ppg single slurry to surface with 50% OH Excess as requested
    Note: Excess to be reviewed after initial jobs.

- 7" Production Casing (Pre-Perf) to 539m
  - 13.5 ppg Lead Slurry from 439m to surface with 55% OH Excess.
  - 15.2 ppg GasTight V2 Tail Slurry from TD to 439m with 10% OH Excess.
    Note: Excess to be reviewed after initial jobs.

Our services for the requested work will be coordinated through Halliburton Roma. Point of contact is Todd Bradshaw or Doug Stansbie on 07 4622 4588. Should you require any additional information regarding slurry design please do not hesitate to contact the Brisbane office on 07 3811 6017.

Regards,

Dave O'Hagan
Technical Professional
Cementing

cc:	Matthew McGilvery	Origin
	Han Lu	Origin
	Chris Brillon	Origin
	William Farrelly	Halliburton Brisbane
	Alasdair Wood	Halliburton Brisbane
	Jason Li	Halliburton Brisbane
	Bill Nixon	Halliburton Roma
	Anton Trinchini	Halliburton Roma

Revision History
Rev. 0 *Initial Program*

Table of Contents

1.0 Cementing Work Methods

1. Cement Properties

You must choose a cement slurry that is designed to meet downhole conditions and solve the problems specific to each casing string.

2. Wait on Cement Time:

You must hold the cement slurry in place and under pressure until it reaches its' initial set without disturbing it. A cement slurry is a time-dependent liquid and must be allowed to undergo a hydration reaction to produce a competent cement sheath. A fresh cement slurry can be worked (thickening or pump time) as long as it is in a liquid state and before going through its' transition phase. If the cement slurry is not allowed to transition without being disturbed, it may be subjected to changes in density, dilution, settling, water separation, and gas cutting that may lead to a lack of zonal isolation and possible bridging in the annulus.

3. Pipe Movement:

Pipe movement may be one of the single most influential factors in mud removal. Reciprocation and/or rotation mechanically breaks up gelled mud and changes the flow patterns in the annulus to improve displacement efficiency.

4. Mud Properties (for Cementing):

Rheology:
Plastic Viscosity (PV) < 15 centipoise (cp)
Yield Point (YP) < 10 lb/100 ft2
These properties should be reviewed with the Mud Engineer, Drilling Engineer, and Company Representative(s) to ensure no hole problems are created.

Gel Strength:
The 10-second/10-minute gel strength values should be such that the 10-second and 10-minute readings are close together or flat (i.e. 5/6). The 30-minute reading should be less than 20 lb/100 ft².

Fluid Loss:
Decreasing the filtrate loss into a permeable zone enhances the creation of a thin, competent filter cake. A thin, competent filter cake created by a low fluid loss mud system is desirable over a thick, partially gelled filter cake. The fluid loss value should be < 15 cc's (ideal would be 5 cc's).

5. Circulation:

Prior to cementing circulate hole volume twice, or until well conditioned mud (refer to 4) is being returned to the surface. There should be no cutting in the mud returns. An annular velocity of 260 feet per minute is optimum (SPE/IADC 18617), if possible.

6. Flow Rate:

Turbulent flow is the most desirable flow regime for mud removal. If turbulence cannot be achieved pump at as high a flow rate that can practically and safely be used to create the maximum flow energy. The highest mud removal is achieved when the maximum flow energy is obtained.

7. Pipe Centralization:

Cement will take the path of least resistance; therefore proper centralization is important to help prevent the casing from contacting the borehole wall. A minimum standoff of 70% should be targeted for optimum displacement efficiency, whilst also taking ECD management into consideration.

8. Rat Hole:

A weighted viscous pill placed in the rat hole prior to cementing will minimize the risk of higher density cement mixing with lower density mud when the well is static.

9. Top and Bottom Plugs:

A Top and Bottom plug are recommended to be run on all primary casing jobs. The bottom plug should be run after the spacer and ahead of the first cement slurry.

10. Spacers and Flushes:

Spacers and/or flushes should be used to prevent contamination between the cement slurry and the drilling fluid. They are also used to clean the wellbore and aid with bonding. To determine the volume, either a minimum of 10 minutes contact time or 1000 ft. of annular fill, whichever is greater, is recommended.

2.0 9-5/8" Surface Casing

9 5/8in Casing Details

JOB PARAMETERS			
Casing measured depth:	127m	BHST temperature:	31°C
True vertical depth:	127m	BHCT temperature:	27°C
Depth to top cement:	Surface	Drilling mud type:	WBM
		Drilling mud density:	<9ppg

WELLBORE	
Casing/Tubing	
0-127m	9 5/8in 36ppf Casing (K55 BTC)
Annulus	
0-127m	12.25in open hole (50% excess)

SPACERS		
Spacer - 20.0bbl Freshwater at 8.33ppg		
Freshwater	42.00 gal/bbl	(73m OH annular fill / 3min contact time)
		Estimated Pv: 1cP

Contact times are based on the displacement rate.

CEMENT - SwiftCem™			
Composition		Properties	
Cem Aus GP Cement		Surface density:	15.60 ppg
Calcium Chloride	0.50 %BWOC	Surface yield:	1.18 ft^3/sk
Freshwater	5.26 gal/sk	Total mixing fluid:	5.26 gal/sk
NF-6	0.25 gal/10bblMF	Thickening time (70 Bc):	1:30+
		Free water vert at 27°C:	<1 %

Note that %BWOC are based on a 94 lb sack

VOLUME CALCULATIONS

Cement		
9 5/8in Casing / 12.25in hole volume	127 m x 0.1830 bbl/m	23.2 bbl
9 5/8in Casing / 12.25in hole excess	0.50 x 23.2 bbl	11.6 bbl
Total slurry volume =		*34.9 bbl*
Quantity of cement	34.9 bbl x 5.6146 / 1.18 ft^3/sk	166 sacks
Quantity of mix fluid	166 sacks x 5.26 gal/sk	20.8 bbl
Displacement		
9 5/8in Casing volume	127 m x 0.2536 bbl/m	32.2 bbl
Total displacement volume =		*32.2 bbl*

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)	
Make up lines & pressure test:	N/A	N/A	30	
Circulate 1 x Casing volume:	32.2	8.0	4	
Pump spacers:	20.0	6.0	3	
Mix & pump cement:	34.9	5.0	7	
Release dart/top plug:	N/A	N/A	5	
Pump displacement:	32.2	6.0	5	
Total job time (including circulation):			*54 min*	*0hr 54min*
Minimum cement thickening time (with 1hr safety factor):			*77 min*	*1hr 17min*

MINIMUM MATERIAL REQUIREMENTS

Spacer - Freshwater	
Freshwater	20 bbl
Cement	
Cem Aus GP Cement	166 sacks
Calcium Chloride	78 lbs
Freshwater	20.8 bbl
NF-6	1 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

JOB PROCEDURE

1. Mobilize cementing crew.
2. Pre-job safety meeting and review JSA's.
3. Rig up surface lines for Cement Unit and Cement Head, and load Top Plug.
4. Rig to circulate through Cement Head below TopPlug.
5. Set Cement Unit pressure kick-outs at **2500 psi**.
6. Pump first **10.0 bbls** of Spacer – Freshwater.
7. Pressure test surface lines to **2500 psi**.
8. Pump remaining **10.0 bbls** of Spacer – Freshwater.
9. Mix and Pump **34.9 bbls** (166 sacks) of SwiftCem™ single slurry at **15.60 ppg**.

   Density = *15.60 ppg*
   Yield = *1.18 ft^3/sk*
   Water Requirement = *5.26 gal/sk*

10. Drop Top Plug.
11. Displace Top Plug with a total of **32.2 bbls** of fresh water displacement.

    - *Pump **22.2** bbls at **6 – 8 bpm***
    - *Pump remaining 10.0 bbls **Freshwater** at **1 – 2 bpm***
    - *Note and record volumes of any spacer / cement returns to surface.*
      NOTE: Pump at slower rates if Company Man Requests

    *** Actual Displacement Volumes are to be calculated based on Casing Tally.**

12. Bump Top Plug.
13. Pressure test casing for **5 minutes**.
14. Check floats and record volume returns.
15. End job and rig down.

3.0 7" Production Casing – Pre-Perf

7in Casing Details

JOB PARAMETERS			
Casing measured depth:	539m	BHST temperature:	45°C
True vertical depth:	539m	BHCT temperature:	31°C
Depth to top lead:	Surface	Drilling mud type:	WBM
Depth to top tail:	439m	Drilling mud density:	<9ppg

WELLBORE	
Casing/Tubing	
0-539m	7in 23ppf Casing (K55 BTC)
Annulus	
0-127m	9 5/8in 36ppf casing (8.921in ID)
127-439m	8.75in open hole (55% excess)
439-539m	8.75in open hole (10% excess)

SPACERS		
Spacer - 5.0bbl Freshwater at 8.33ppg		
Freshwater	42.00 gal/bbl	(37m OH annular fill / 1min contact time)

Contact times are based on the displacement rate.

SCAVENGER CEMENT SPACER			
Composition		Properties	
Cem Aus GP Cement		Surface density:	10.50 ppg
Fly Ash (Roma)	20.00 %BWOC	Surface yield:	4.61 ft³/sk
Econolite Powder	1.00 %BWOC	Total mixing fluid:	29.72 gal/sk
Halad-344	0.70 %BWOC		
Freshwater	29.71 gal/sk		
NF-6	0.25 gal/10bblMF		

Note that %BWOC are based on a 94 lb sack

LEAD CEMENT			
Composition		Properties	
Standard Cement		Surface density:	13.50 ppg
Roma Fly Ash	20.00 %BWOC	Surface yield:	1.94 ft³/sk
Halad-344	0.70 %BWOC	Total mixing fluid:	9.74 gal/sk
Econolite Powder	1.00 %BWOC	Thickening time (70 Bc):	2:30+
Freshwater	9.74 gal/sk	Free water vert at 31°C:	0.0 %
NF-6	0.125 gal/10bblMF	Fluid loss at 31°C:	102 cc/30min
		Comp strength at 31°C:	100 psi in 5.5 hrs
		Comp strength at 31°C:	500 psi in 9.8 hrs
		Comp strength at 31°C:	1,671 psi in 24 hrs
		Lab report no:	286880/9

Note that %BWOC are based on a 94 lb sack

TAIL CEMENT - HalCem™			
Composition		Properties	
GasTight V2		Surface density:	15.20 ppg
CFR-3	0.50 %BWOC	Surface yield:	1.16 ft³/sk
Halad-344	0.40 %BWOC	Total mixing fluid:	4.88 gal/sk
Calcium Chloride	1.00 %BWOC	Thickening time (70 Bc):	1:30+
Freshwater	4.88 gal/sk	Free water vert at 31°C:	0.0 %
NF-6	0.125 gal/10bblMF	Fluid loss at 31°C:	40 cc/30min
		Comp strength at 40°C	500 psi in 8 hrs
		Comp strength at 40°C	1,100 psi in 12 hrs
		Comp strength at 40°C	2,203 psi in 24 hrs
		Static gel str transition:	:11
		Lab report no:	295722-1

Note that %BWOC are based on a 90 lb sack

VOLUME CALCULATIONS		
Total Scavenger Spacer volume =		*20.0 bbl*
Quantity of lead cement	20.0 bbl x 5.6146 / 4.61 ft³/sk	24 sacks
Quantity of lead mix fluid	24 sacks x 29.72 gal/sk	17.0 bbl
Lead Cement		
7in Casing / 9 5/8in casing volume	127 m x 0.0975 bbl/m	12.4 bbl
7in Casing / 8.75in hole volume	312 m x 0.0878 bbl/m	27.4 bbl
7in Casing / 8.75in hole excess	0.55 x 27.4 bbl	15.1 bbl
Total lead slurry volume =		*54.9 bbl*
Quantity of lead cement	54.9 bbl x 5.6146 / 1.94 ft³/sk	159 sacks
Quantity of lead mix fluid	159 sacks x 9.74 gal/sk	36.9 bbl
Tail Cement		
7in Casing / 8.75in hole volume	100 m x 0.0878 bbl/m	8.8 bbl
7in Casing / 8.75in hole excess	0.10 x 8.8 bbl	0.9 bbl
Total tail slurry volume =		*9.7 bbl*
Quantity of tail cement	9.7 bbl x 5.6146 / 1.16 ft³/sk	47 sks
Quantity of tail mix fluid	47 sks x 4.88 gal/sk	5.5 bbl
Displacement		
7in Casing volume	539 m x 0.1292 bbl/m	69.6 bbl
Total displacement volume =		*69.6 bbl*

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 1.5 x Hole volume:	201.2	8.0	25
Pump spacers:	45.0	8.0	1
Release ball/bottom plug:	N/A	N/A	5
Mix & pump lead cement:	54.9	6.0	9
Mix & pump tail cement:	9.7	5.0	2
Release dart/top plug:	N/A	N/A	5
Pump displacement:	69.6	6.0	12

Total job time (including circulation):	*89 min*	*1hr 29min*
Minimum lead cement thickening time (with 1hr safety factor):	*88 min*	*1hr 28min*
Minimum tail cement thickening time (with 1hr safety factor):	*79 min*	*1hr 19min*

MINIMUM MATERIAL REQUIREMENTS

Spacer - Freshwater

Freshwater	5 bbl

Scavenger Cement

Cem Aus GP Cement	24 sacks
Fly Ash (Roma)	451 lbs
Econolite Powder	23 lbs
Halad-344	16 lbs
Freshwater	17 bbl
NF-6	1 gals

Lead Cement

Standard Cement	159 sacks
Roma Fly Ash	2,989 lbs
Halad-344	105 lbs
Econolite Powder	149 lbs
Freshwater	36.9 bbl
NF-6	1 gals

Tail Cement

GasTight V2	47 sacks
CFR-3	21 lbs
Halad-344	17 lbs
Calcium Chloride	42 lbs
Freshwater	5.5 bbl
NF-6	1 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

JOB PROCEDURE

1. Mobilize cementing crew.
2. Pre-job safety meeting and review JSA's.
3. Load Dart inside 7" casing
4. Rig up surface lines for Cement Unit and Cement Head, and load Closing Plug.
5. Set Cement Unit pressure kick-outs at **3000 psi**.
6. Pump **5.0 bbls** of Fresh Water
7. Pressure test surface lines to **3000 psi**.
8. Set Cement Unit pressure kick-outs at **500 psi**
   Pump remaining **69.7 bbls** of mud to land dart
   *** Actual Displacement Volumes are to be calculated based on Casing Tally**
9. Set Packer and open stage tool as per Weatherford procedure
   Set Cement Unit pressure kick-outs at **1500 psi when inflating packer**
   Set Cement Unit pressure kick-outs at **3000 psi when opening stage tool**
10. Pump **5.0 bbls** of Fresh Water Spacer.
11. Mix and pump **20.0 bbls** (24 sacks) of Scavenger Cement Spacer at **10.5 ppg**.

Density	=	*10.50 ppg*
Yield	=	*4.61 ft^3/sk*
Water Requirement	=	*29.72 gal/sk*

12. Mix and pump **54.9 bbls** (159 sacks) of EconoCem™ Cement slurry at **13.5 ppg**.

Density	=	*13.5 ppg*
Yield	=	*1.94 ft^3/sk*
Water Requirement	=	*9.74 gal/sk*

13. Mix and pump **9.7 bbls** (47 sacks) of GasTight V2 Cement slurry at **15.2 ppg**.

Density	=	*15.2 ppg*
Yield	=	*1.16 ft^3/sk*
Water Requirement	=	*4.88 gal/sk*

14. Drop Closing Plug.
15. Displace Closing Plug with a total of **69.6 bbls** of 8.8 ppg brine displacement.

    - *Pump 64.6 bbls at **3 – 4 bpm***
    - *Pump remaining 5.0 bbls **Freshwater** at **1 - 2 bpm***

    Note and record volumes of any spacer / cement returns to surface
    NOTE: Pump at slower rates if WSR Requests

    *** Actual Displacement Volumes are to be calculated based on Casing Tally**
16. Land Closing Plug.

17. Pressure test casing to 2000psi for **10 minutes**.
18. Check floats and record volume returns.
19. End job and rig down.

4.0 9 5 /8" Centralization

Centralization simulations based on the following:
Based on Halliburton Bow Centralizers
Assume Max 3 deg Deviation.

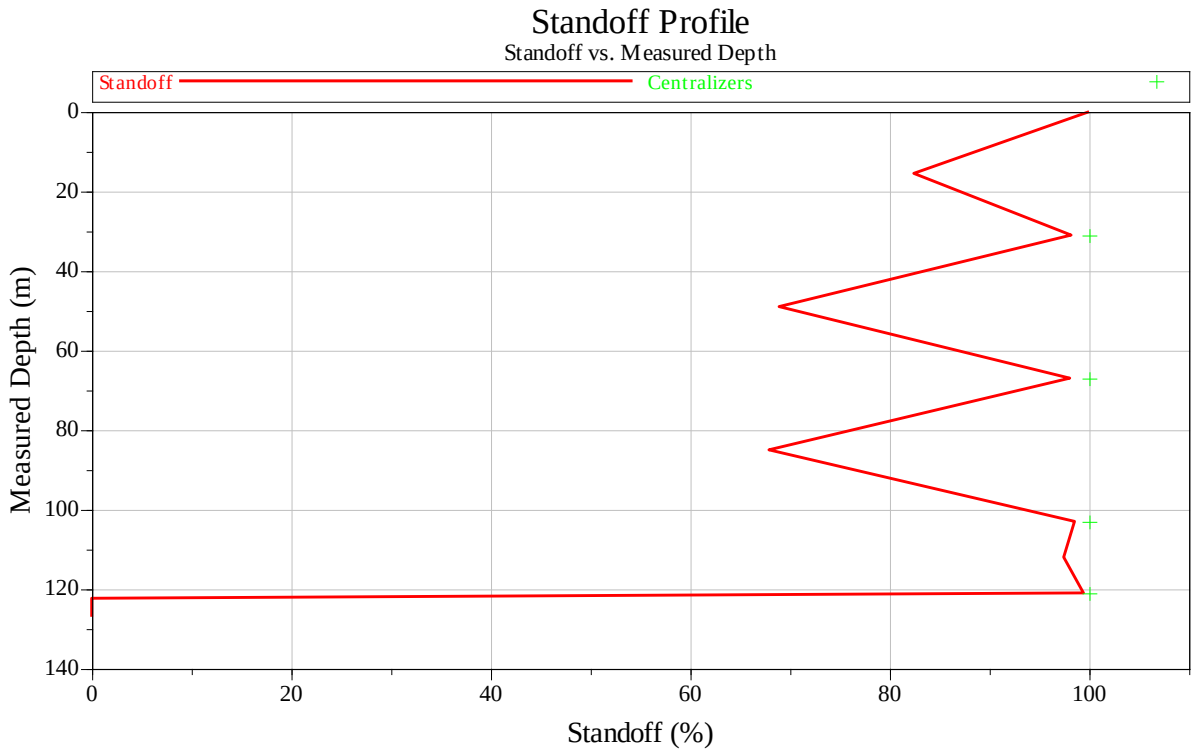
1 Bow-Spring Centralizer Mid First Joint
1 Bow-Spring Centralizer on 2nd casing collar from shoe
1 Bow-Spring Centralizer every 3 joints on casing collar to surface

Average Joint length used: 11.8m

4.1 Centralizer Specifications

Description	Type	Casing Dia., in	Hole Dia., in	Nom. Dia., in
700 Series Imperial Bow Centralizer	BS	9.625	12.250	13.500

4.2 Centralized Intervals



5.0 7" Centralization

Centralization simulations based on the following:
Based on Halliburton Bow Centralizers
Assume Max 3 deg Deviation.

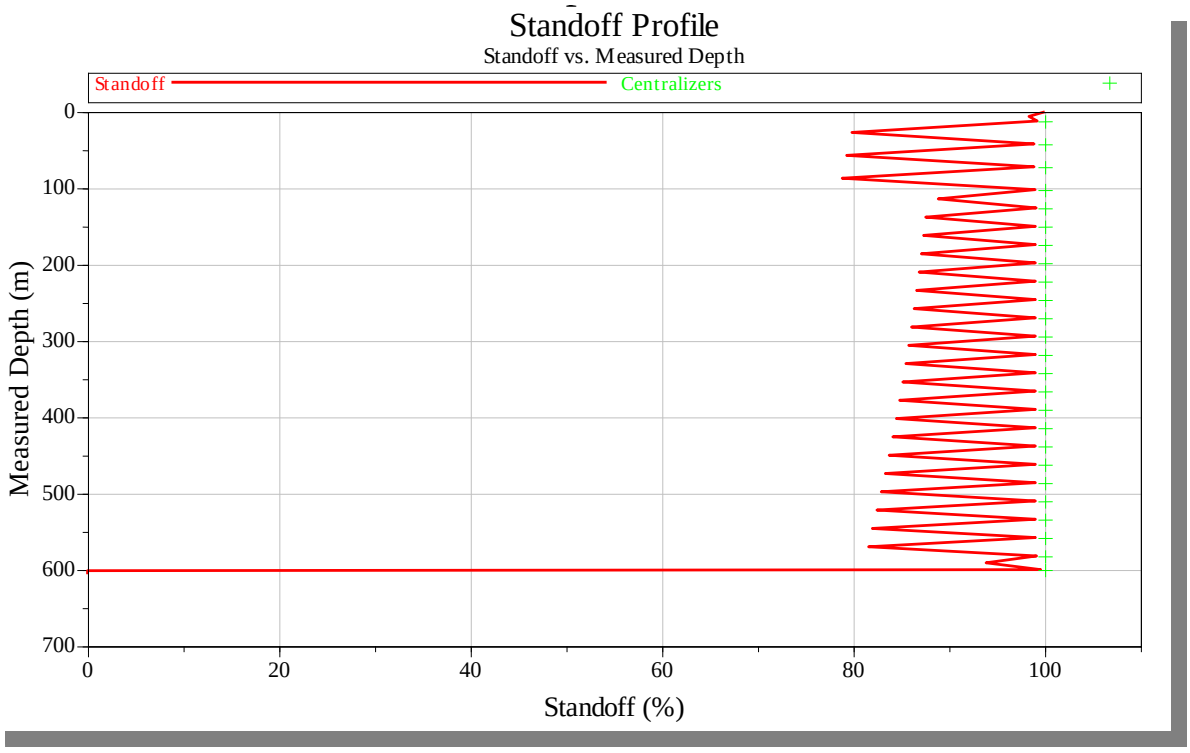
1 Bow-Spring Centralizer Mid First Joint below ACP
1 Bow-Spring Centralizer Mid First Joint above ACP
1 Bow-Spring Centralizer every 2 joints from ACP to one joint inside previous casing
1 Bow-Spring Centralizer every 2.5 joints to surface

Average joint length used: 11.8m

5.1 Centralizer Specifications

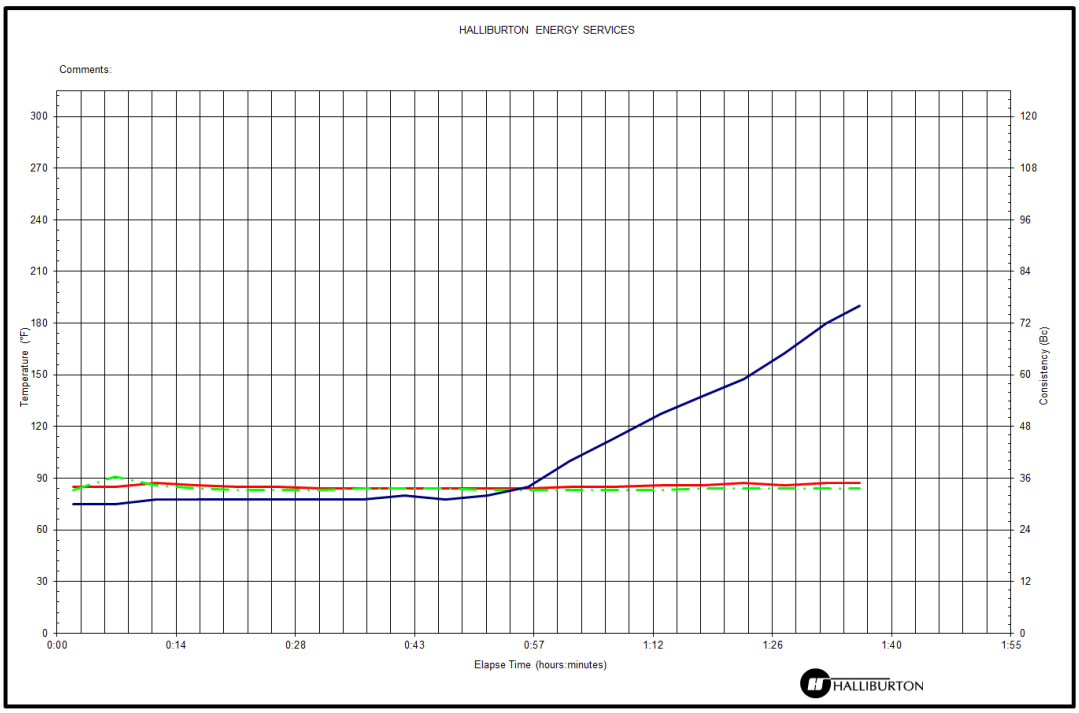
Description	Type	Casing Dia., in	Hole Dia., in	Nom. Dia., in
700 Series Imperial Bow Centralizer	BS	7.000	8.750	10.000

5.2 Centralized Intervals

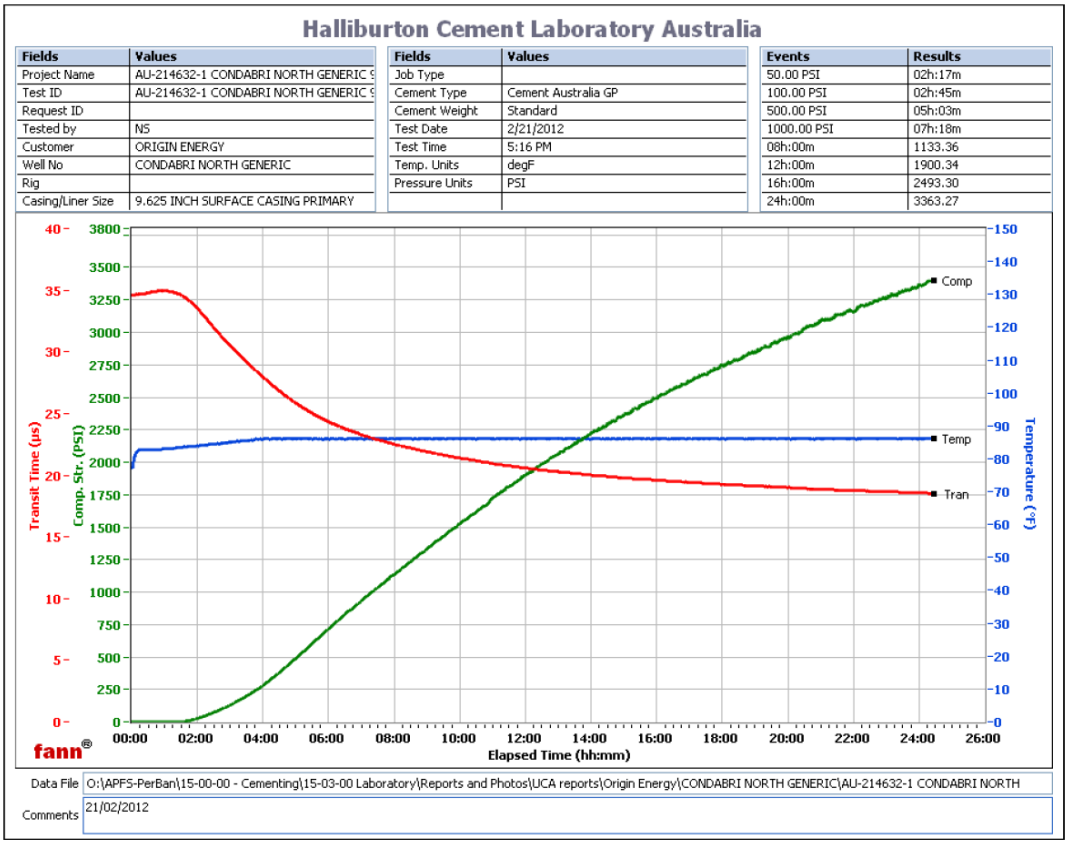


6.0 9 5 /8" Surface Casing Lab Charts

TT Test Results – 15.6 ppg Surface Cement



UCA Test Results – 15.6 ppg Surface Cement



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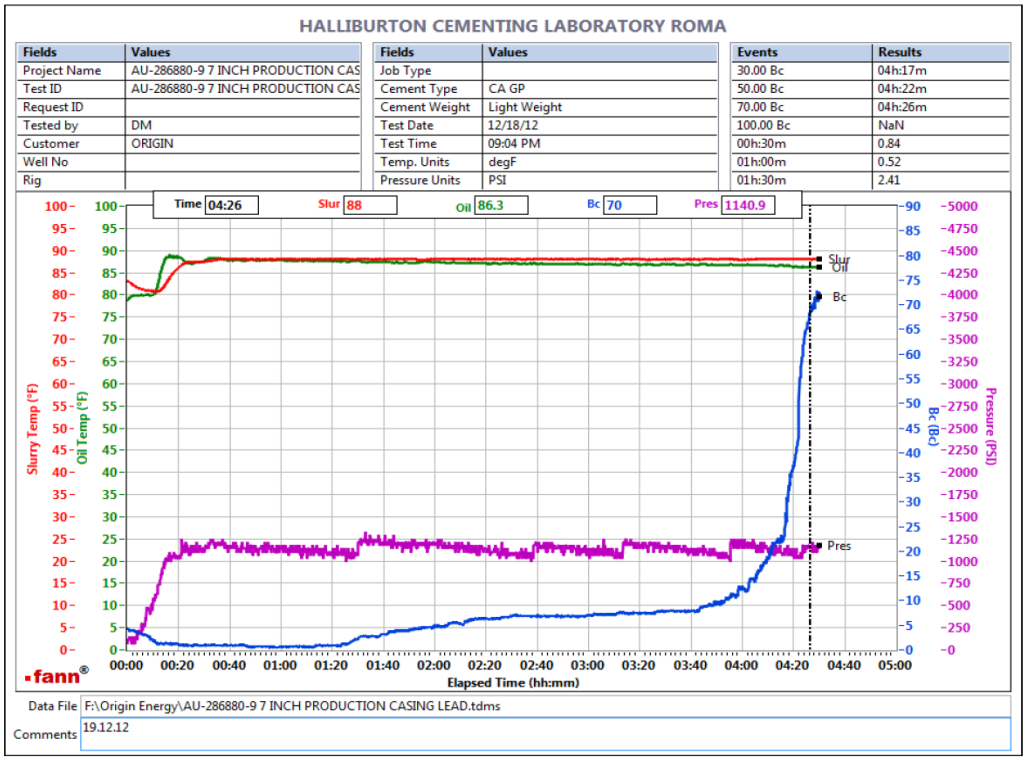
Test ID	AU-214632-1 CONDABRI NORTH GENERIC 9
Request ID	
Tested by	NS
Customer	ORIGIN ENERGY
Well No	CONDABRI NORTH GENERIC
Rig	
Casing/Liner Size	9.625 INCH SURFACE CASING PRIMARY

Fields	Values
Job Type	
Cement Type	Cement Australia GP
Cement Weight	Standard
Test Date	2/21/2012
Test Time	5:16 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	02h:17m
100.00 PSI	02h:45m
500.00 PSI	05h:03m
1000.00 PSI	07h:18m
08h:00m	1133.36
12h:00m	1900.34
16h:00m	2493.30
24h:00m	3363.27

7.0 7" Production Casing Lab Charts

TT Test Results – 13.5 ppg Lead Slurry



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Test ID	AU-286880-9 7 INCH PRODUCTION CAS
Request ID	
Tested by	DM
Customer	ORIGIN
Well No	
Rig	

Fields	Values
Job Type	
Cement Type	CA GP
Cement Weight	Light Weight
Test Date	12/18/12
Test Time	09:04 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
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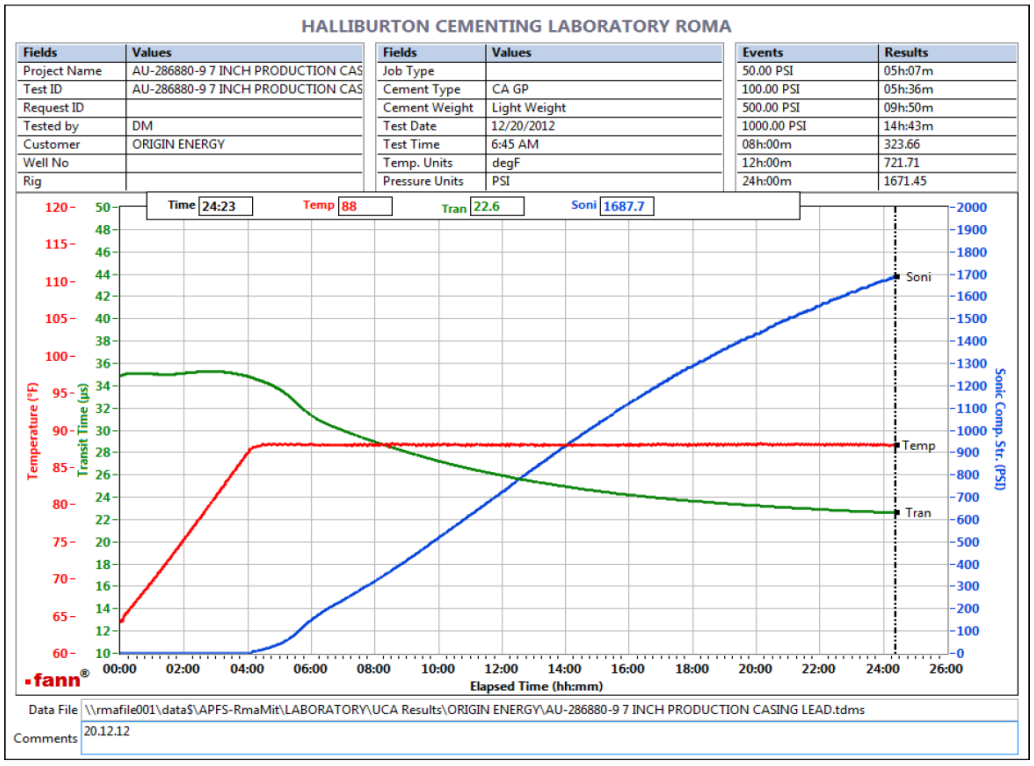
Comments 19.12.12

UCA Test Results – 13.5 ppg Lead Slurry



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Request ID	
Tested by	DM
Customer	ORIGIN ENERGY
Well No	
Rig	

Fields	Values
Job Type	
Cement Type	CA GP
Cement Weight	Light Weight
Test Date	12/20/2012
Test Time	6:45 AM
Temp. Units	degF
Pressure Units	PSI

Events	Results
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1000.00 PSI	14h:43m
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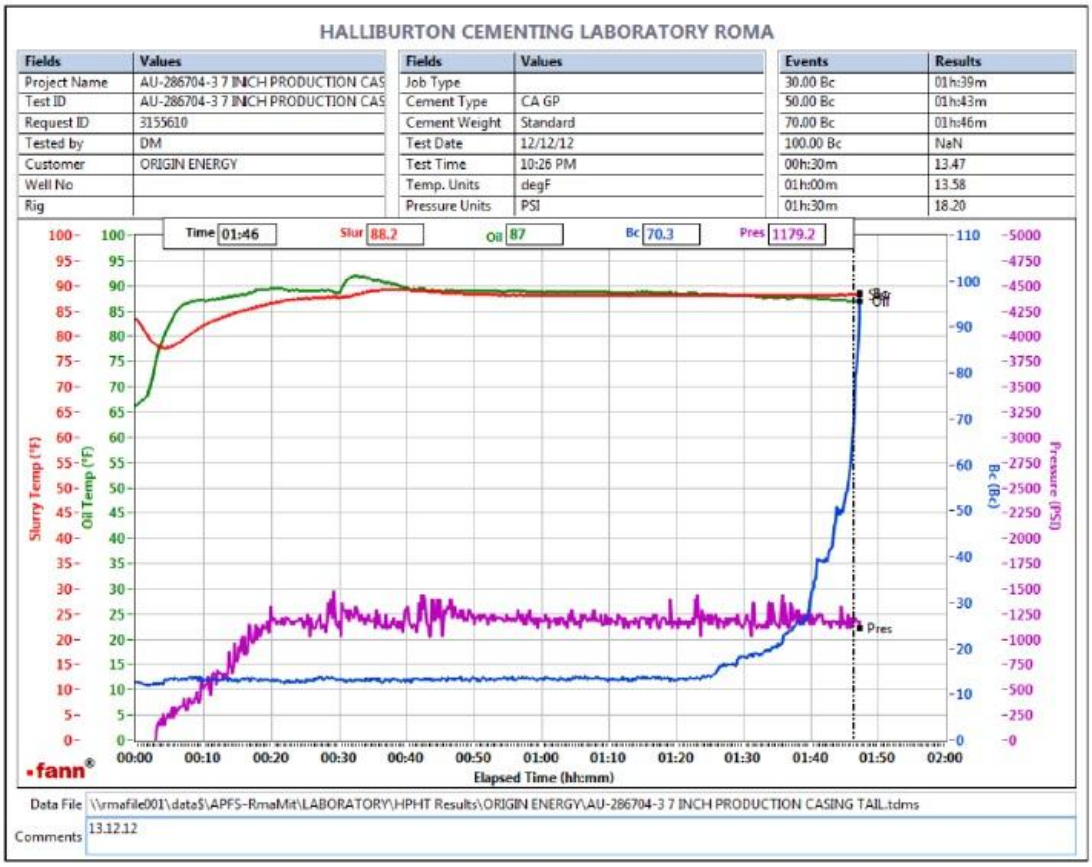
12h:00m	721.71
24h:00m	1671.45

Data File \\rmafile001\data$\APFS-RmaMit\LABORATORY\UCA Results\ORIGIN ENERGY\AU-286880-9 7 INCH PRODUCTION CASING LEAD.tdms
Comments 20.12.12

TT Test Results – 15.2 ppg Tail Slurry



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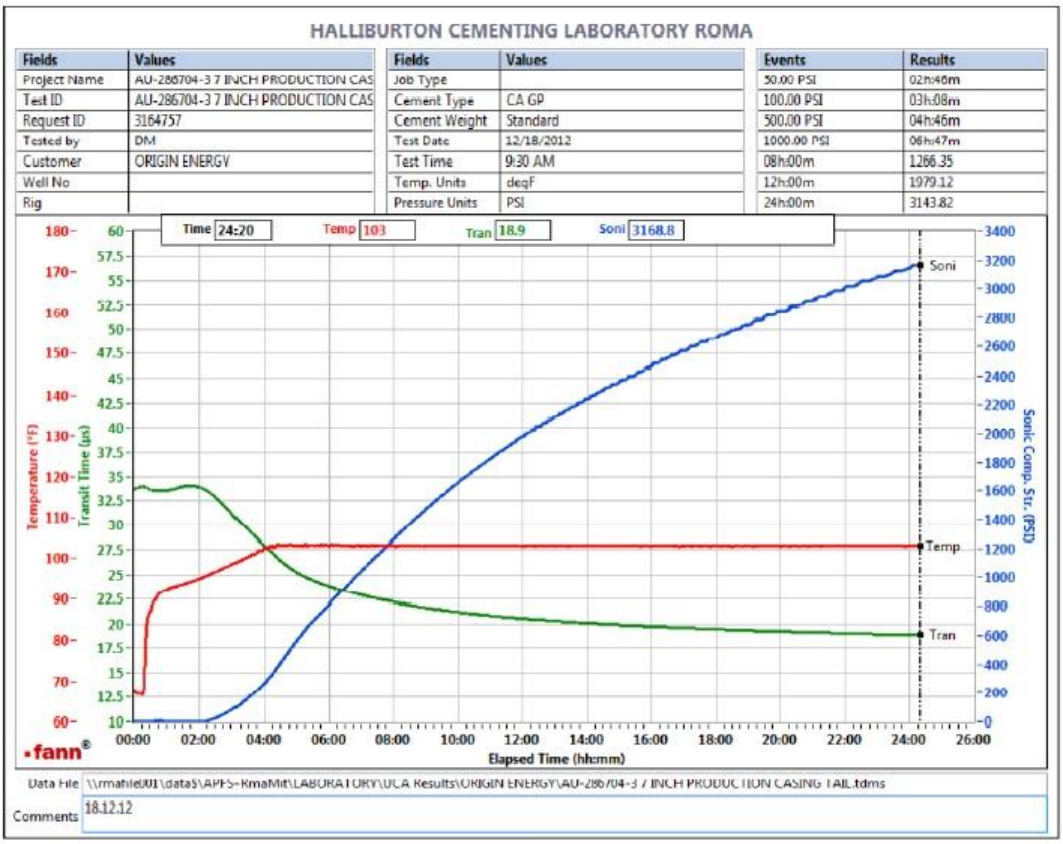
Request ID	3155610
Tested by	DM
Customer	ORIGIN ENERGY
Well No	
Rig	

Fields	Values
Job Type	
Cement Type	CA GP
Cement Weight	Standard
Test Date	12/12/12
Test Time	10:26 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
30.00 Bc	01h:39m
50.00 Bc	01h:43m
70.00 Bc	01h:46m
100.00 Bc	NaN
00h:30m	13.47
01h:00m	13.58
01h:30m	18.20

UCA Test Results – 15.2 ppg Tail Slurry

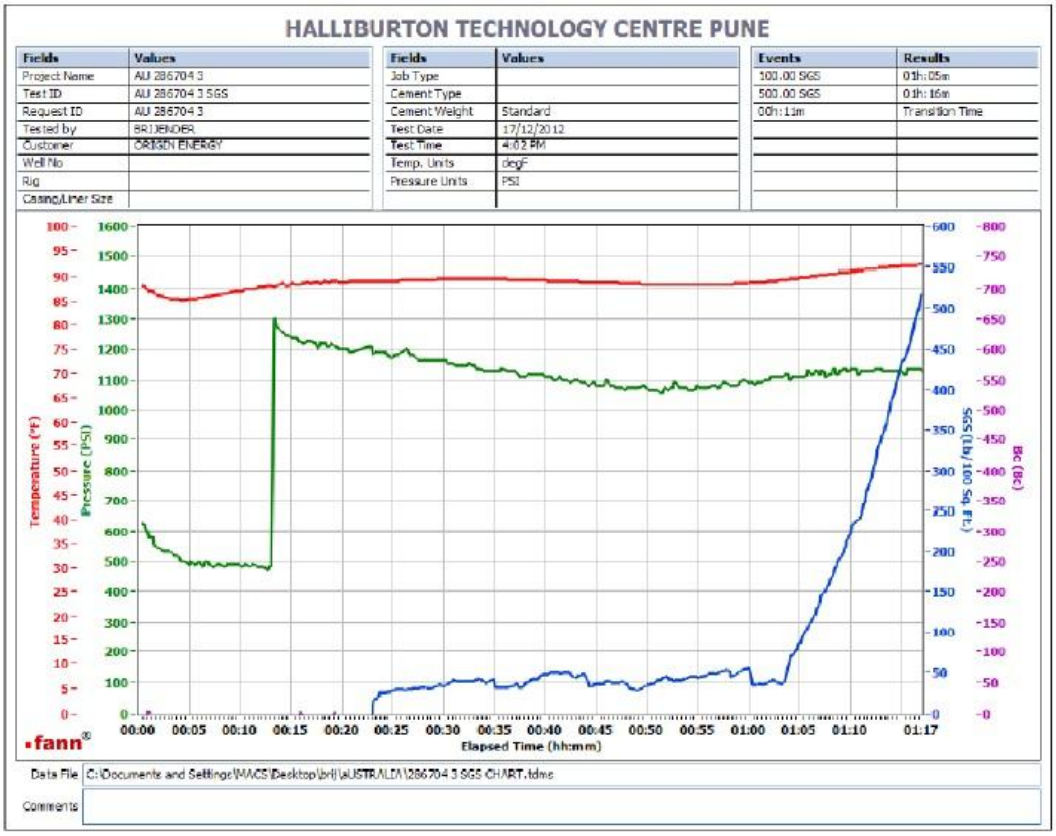


Fields	Values
Project Name	AU-286704-3 7 INCH PRODUCTION CAS
Test ID	AU-286704-3 7 INCH PRODUCTION CAS
Request ID	3164757
Tested by	DM
Customer	ORIGIN ENERGY
Well No	
Rig	

Fields	Values
Job Type	
Cement Type	CA GP
Cement Weight	Standard
Test Date	12/18/2012
Test Time	9:30 AM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	02h:46m
100.00 PSI	03h:08m
500.00 PSI	04h:46m
1000.00 PSI	06h:47m
08h:00m	1266.35
12h:00m	1979.12
24h:00m	3143.82

SGS Test Results – 15.2 ppg Tail Slurry



Origin Energy

POST JOB REPORTS
CEMENTING/PUMPING

Well Name : Condabri 156

Rig: Savanna 406

CEMENT SURFACE CASING 7521

Prepared for Ross

5/18/2013

Prepared by Jeremy Walters

HALLIBURTON

The Future is Working Together.

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HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900438039	18 May 2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Watters	Ross	Coal Bed Methane
JOB TYPE		JOB PURPOSE CODE		BDA	RIG
Surface Casing		CEMENT SURFACE CASING 7521		Brisbane	Savanna 406

KEY PERFORMANCE INDICATORS

TYPE OF JOB (Cementing or Non-Cementing):	Cementing	WAS THIS A PRIMARY CEMENT JOB (YES / NO)	YES
Select the job type (Cementing or Non-Cementing)		*Primary cement job = Casing job, Liner Job, tie back*	
TOTAL OPERATING TIME (hrs)	3.0 hrs	DID WE RUN WIPER PLUGS?	Top Plug
Rig up/Pumping/Rig Down			
HSE INCIDENT, ACCIDENT, INJURY:	NO	WAS THIS A PLUG OR SQUEEZE JOB?	Neither
This should be recordable incidents only			
WAS THE JOB DELIVERED CORRECTLY AS PERJOB DESIGN	YES	WAS THIS A PRIMARY OR REMEDIAL JOB?	Primary
This will be dictated by the customer		Remedial = Repeated attempts or corrections of initial cement job	
TOTAL TIME PUMPING (hrs)	0.5 hrs	MIXING DENSITY OF JOB STAYED IN DESIGNED RANGE	90%
Total number of hours pumping fluid on this job		*Density defined as +/- 0.2ppg. Calculation: Total bbls cement mixed at designed*	
NON -PRODUCTIVE RIG TIME:	0.0 hrs	*density divided by total bbls of cement multiplied by 100*	
As a result of Halliburton cementing PSL		WAS AUTOMATED DENSITY CONTROL USED	YES
NUMBER OF JSA'S PERFORMED:	1		
		JOB WAS PUMPED AT DESIGNED PUMP RATE	95%
NUMBER OF UNPLANNED SHUTDOWNS (After starting to pump)	0	*Pump rate ranged defined as +/- bpm. Calculation : total bbls of fluid pumped at*	
		the designed rate divided by total bbls of fluid pumped multiplied by 100	
TYPE OF RIG(CLASSIFICATION) JOB WAS PERFORMED ON:	LAND	NUMBER OF REMEDIAL SQUEEZE JOBS REQUIRED - HES	0
		Number of remedial squeeze jobs required after primary job performed by HES	
REASON FOR UNPLANNED SHUTDOWNS (After starting to pump)		NUMBER OF REMEDIAL AQUEEZE JOBS REQUIRED - COMPETITION	0
Add details in job logs		*Number of remedial squeeze jobs required after primary job performed by competition*	
REASON FOR NON-PRODUCTIVE RIG TIME (Cementing PSL responsibility):		NUMBER OF REMEDIAL PLUG JOBS REQUIRED - HES	0
Add details in job logs		*Number of remedial plug jobs required after primary plug pumped by HES*	
DENSITY RECORDED WITH PRESSURISED MUD BALANCE?		DID CEMENT RETURN TO SURFACE?	
YES 15.6 ppg		YES 22 bbls into displacement	

CUSTOMER SATISFACTION SURVEY

Dear Customer,

We hope that you were satisfied with the service delivery of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CATEGORY	CUSTOMER SATISFACTION RATING (Please circle yes or no)	
Survey Conducted Date	The date the survey was conducted	18/5
Survey Interviewer	The survey interviewer is the person who initiated the survey.	J WATERS
Customer Participation	Did the customer partipcipate in this survey? (Y/N)	Y
Customer Representative	Enter the Customer representative name	R. McN
HSE	Was our HSE performance satisfactory? Circle Y or N	Y
Equipment	Were you satisfied with our Equipment? Circle Y or N	Y
Personnel	Were you satisfied with our people? Circle Y or N	Y
Customer Comment		
Job DVA	Did we provide job DVA above our normal service today? Circle Y or N	N
Time	Please enter hours in decimal format to nearest quarter hour.	N/A
Other	Enter short text for other efficiencies gained.	N/A
Customer Initials	Customer's Initials	RM
Please provide details	Job well Done.	

CUSTOMER SIGNATURE

HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900439039	18 May 2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Ross	Coal Bed Methane
JOB TYPE		**JOB PURPOSE CODE**		**BDA**	**RIG**
Surface Casing		CEMENT SURFACE CASING 7521		Brisbane	Savanna 406

PERSONELL

PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE	hrs	PERSONNEL / EXPOSURE	hrs
#N/A	Jeremy Walters	12	#N/A	Dennis Brennan	12				

EQUIPMENT 5329105 5331 10

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK SUPPLY / TANKS	HOURS
#N/A	CEMENT UNIT 1 PUMP (767-QVA) 1192382	24	#N/A	BULKER #11303403	24
SAP#	**VEHICLES / TRAILERS**	**HOURS**	**SAP#**	**OTHER EQUIPMENT**	**HOURS**
10047114	KENWORTH T950 TRUCK #10047114 (102-FKI)	24			
#N/A	LAND CRUISER UTE # 12043884 (S825-ASAP)	24			

FLOAT EQUIPMENT AND CASING EQUIPMENT

SAP#	FLOAT EQUIPMENT	QTY	SAP#	PLUGS	QTY
#N/A	9 5/8 IN FLOAT SHOE	1	101214575	9 5/8" TOP PLUG HWE	1
SAP#	**CASING ATTACHMENTS**	**QTY**	**SAP#**	**OTHER**	**QTY**
#N/A	12 1/4" - 9 5/8" CENTRALIZERS	5			

WELL PROFILE

NEW CASING	OPEN HOLE + EXCESS OR CALIPER DATA	PREVIOUS CASINGS
Non Tapered Casing , Conventional, 0m shoe track		
9.625in 36ppf K-55 BTC : 0m to 121m MD, 121m TVD	12 25in, 50 percent excess, 0m to 124m	

CEMENT DESIGN

Spacer				Single			
DENSITY	8.3ppg	WATER	0.00gal/sk	DENSITY	15.6ppg	WATER	5.26gal/sk
YIELD	0.00cuft/ft	MIX FLUID	20.0bbls	YIELD	1.19cuft/ft	MIX FLUID	20.5bbls
WATER SOURCE	Day Tank			WATER SOURCE	Day Tank		
CEMENT TYPE	at lb/sk			CEMENT TYPE	Class A Cement at 94lb/sk		
Total Cement Used	sks			Total Cement Used	166sks		
Estimated TOC	0m			Estimated TOC	0m		
Additive	Concentration	Total Used		Additive	Concentration	Total Used	
				Calcium Chloride	1 %BWOC	156lbs	
				NF-6	0.25 gal/10bbl	1gals	

DAS
30/5/13
5,8455917

JOB LOGS

DATE	TIME	VOLUME	PRESSURE (psi)		RATE	JOB DESCRIPTION
18-May-13	19:30					ON LOCATION
	19:35					MEET CUSTOMER REP.
	20:00					SPOT EQUIPMENT / RIG UP CEMENT LINE
	21:30					PRE JOB SAFETY MEETING
	21:50					LOAD TOP PLUG / RIG UP CEMENT HEAD
	22:03	10		140	6	PUMP 10 BBLS OF SPACER - FRESH WATER
	22:10		2500			PRESSURE TEST SURFACE LINES TO 2500 PSI
			0			BLEED OFF
	22:16	10		160	6	PUMP REMAINING 10 BBLS WATER SPACER - FRESH WATER
	22:21	36		150	6	MIX AND PUMP 34.9 BBLS (166 SKS) SINGLE SLURRY AT 15.6 PPG
						DENSITY = 15.6 PPG
						YIELD = 1.19 FT3/SK
						WATER REQUIREMENT = 5.26 GAL/SK
						END CEMENT
	22:31					DROP PLUG
	22:31			135	6	DISPLACE TOP PLUG WITH WATER
	22:35	22		265	6	CEMENT RETURN TO SURFACE 21 BBLS IN DISPLACEMENT
	22:38	30			2.5	PLUG LANDED
	22:38		1500			PRESSURE TEST CASING WITH 1500 PSI.
	22:43		0			BLEED OFF / 0.5 BBLS BACK
	22:45					END JOB / RIG DOWN
	23:00					WRITE TICKETS
	23:30					DEPART RIG
						JOB DONE

HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900438039	18 May 2013

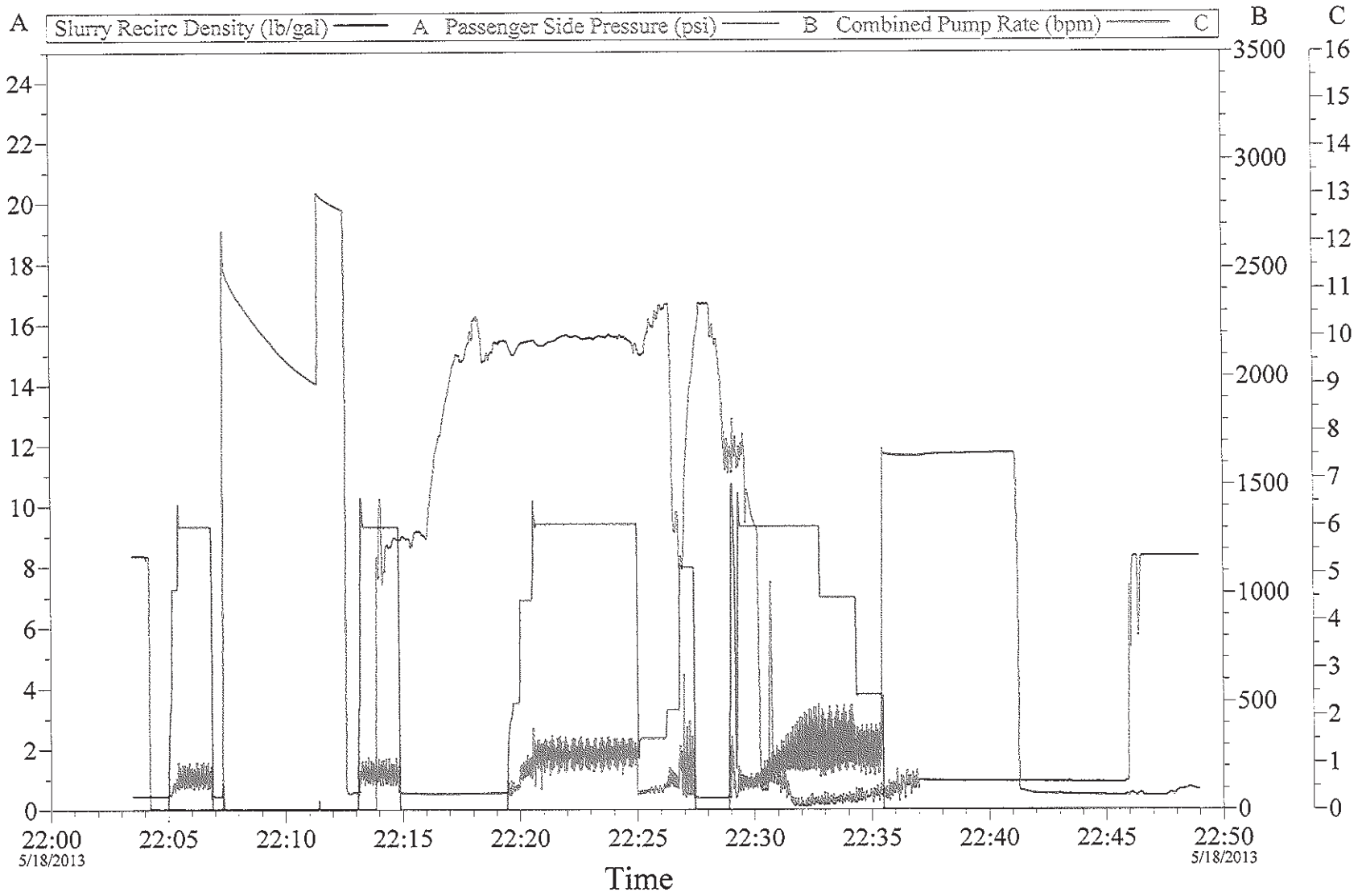
CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Ross	Coal Bed Methane

JOB TYPE	JOB PURPOSE CODE	BDA	RIG
Surface Casing	CEMENT SURFACE CASING 7521	Brisbane	Savanna 406

THANK YOU

END OF JOB LOGS



Customer: Halliburton	Job Date: 05/18/13	Ticket #: 22:03:30
Well Desc: Technology #RTD Stg GOLD	UWI:	Control ver 4.20, Display ver 4.20

TG Version G3.4.1
18-May-13 23:13

Origin Energy

POST JOB REPORTS
CEMENTING/PUMPING

Well Name : Condabri 156

Rig: Savanna 406

CEMENT PRODUCTION CASING 1600M 7523

Prepared for Mr. Ross

5/21/2013

Prepared by Jeremy Walters

HALLIBURTON

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HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900393313	21 May 2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Mr. Ross	Coal Bed Methane
JOB TYPE		**JOB PURPOSE CODE**		**BDA**	**RIG**
Production Casing		CEMENT PRODUCTION CASING 1600M 7623		Brisbane	Savanna 406

KEY PERFORMANCE INDICATORS

TYPE OF JOB (Cementing or Non-Cementing): *Select the job type (Cementing or Non-Cementing)*	Cementing	WAS THIS A PRIMARY CEMENT JOB (YES / NO) *Primary cement job = Casing job, Liner Job, tie back*	YES
TOTAL OPERATING TIME (hrs) *Rig up/ Pumping/ Rig Down*	4.0 hrs	DID WE RUN WIPER PLUGS?	Top Plug
HSE INCIDENT, ACCIDENT, INJURY: *This should be recordable incidents only*	NO	WAS THIS A PLUG OR SQUEEZE JOB?	Neither
WAS THE JOB DELIVERED CORRECTLY AS PERJOB DESIGN *This will be dictated by the customer*	YES	WAS THIS A PRIMARY OR REMEDIAL JOB? Remedial = Repeated attempts or corrections of initial cement job	Primary
TOTAL TIME PUMPING (hrs) *Total number of hours pumping fluid on this job*	1.0 hrs	MIXING DENSITY OF JOB STAYED IN DESIGNED RANGE *Density defined as +/- 0.2ppg. Calculation: Total bbls cement mixed at designed density divided by total bbls of cement multiplied by 100*	95%
NON -PRODUCTIVE RIG TIME: *As a result of Halliburton cementing PSL*	0.0 hrs	WAS AUTOMATED DENSITY CONTROL USED	YES
NUMBER OF JSA'S PERFORMED:	1	JOB WAS PUMPED AT DESIGNED PUMP RATE *Pump rate ranged defined as +/- bpm. Calculation : total bbls of fluid pumped at the designed rate divided by total bbls of fluid pumped multiplied by 100*	95%
NUMBER OF UNPLANNED SHUTDOWNS (After starting to pump)	0	NUMBER OF REMEDIAL SQUEEZE JOBS REQUIRED - HES *Number of remedial squeeze jobs required after primary job performed by HES*	0
TYPE OF RIG(CLASSIFICATION) JOB WAS PERFORMED ON:	LAND	NUMBER OF REMEDIAL AQUEEZE JOBS REQUIRED - COMPETITION *Number of remedial squeeze jobs required after primary job performed by competition*	0
REASON FOR UNPLANNED SHUTDOWNS (After starting to pump) *Add details in job logs*		NUMBER OF REMEDIAL PLUG JOBS REQUIRED - HES *Number of remedial plug jobs required after primary plug pumped by HES*	0
REASON FOR NON-PRODUCTIVE RIG TIME (Cementing PSL responsibility): *Add details in job logs*		DID CEMENT RETURN TO SURFACE?	YES — 42 bbls into displacement
DENSITY RECORDED WITH PRESSURISED MUD BALANCE?	YES — 13.5/15.2 ppg		

CUSTOMER SATISFACTION SURVEY

Dear Customer,

We hope that you were satisfied with the service delivery of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CATEGORY	CUSTOMER SATISFACTION RATING (Please circle yes or no)	
Survey Conducted Date	The date the survey was conducted.	21/5
Survey Interviewer	The survey interviewer is the person who initiated the survey.	J. WALTERS
Customer Participation	Did the customer partipcipate in this survey? (Y/N)	Y
Customer Representative	Enter the Customer representative name	R McIVER
HSE	Was our HSE performance satisfactory? Circle Y or N	Y
Equipment	Were you satisfied with our Equipment? Circle Y or N	Y
Personnel	Were you satisfied with our people? Circle Y or N	Y
Customer Comment		
Job DVA	Did we provide job DVA above our normal service today? Circle Y or N	N
Time	Please enter hours in decimal format to nearest quarter hour.	N/A
Other	Enter short text for other efficiencies gained.	N/A
Customer Initials	Customer's Initials	RM
Please provide details	Job well done.	

CUSTOMER SIGNATURE R Mcl

28/5/13

HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900388313	21 May 2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Mr. Ross	Coal Bed Methane

JOB TYPE	JOB PURPOSE CODE	BDA	RIG
Production Casing	CEMENT PRODUCTION CASING 1600M 7523	Brisbane	Savanna 406

PERSONELL

PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE	hrs	PERSONNEL / EXPOSURE	hrs
#N/A	Jeremy Walters	24	#N/A	Dennis Brennan	24				

EQUIPMENT 533925 533110

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK SUPPLY / TANKS	HOURS
#N/A	CEMENT UNIT 11923852	24	#N/A	BULKER 11303403	24
SAP#	**VEHICLES / TRAILERS**	**HOURS**	**SAP#**	**OTHER EQUIPMENT**	**HOURS**
10047114	KENWORTH T950 TRUCK #10047114 (102-FKI)	24			
#N/A	MITSUBISHI CANTER	24			

FLOAT EQUIPMENT AND CASING EQUIPMENT

SAP#	FLOAT EQUIPMENT	QTY	SAP#	PLUGS	QTY
#N/A	7 IN FLOAT SHOE	1	100003154	7" TOP PLUG	1
SAP#	**CASING ATTACHMENTS**	**QTY**	**SAP#**	**OTHER**	**QTY**
#N/A	7 / 8.75 CENTRALIZERS	5			

WELL PROFILE

NEW CASING	OPEN HOLE + EXCESS OR CALIPER DATA	PREVIOUS CASINGS
Non Tapered Casing , Conventional, 0m shoe track		
7in 23ppf K-55 BTC : 0m to 550m MD, 894m TVD	12.25in, 50 percent excess, 0m to 124m 8.75in, 55 percent excess, 124m to 439m 8.75in, 10 percent excess, 439m to 539m	

CEMENT DESIGN

Spacer				Scavenger				Lead			
DENSITY	8.3ppg	WATER	0.00gal/sk	DENSITY	10.5ppg	WATER	29.72gal/sk	DENSITY	13.5ppg	WATER	9.74gal/sk
YIELD	0.00cuft/ft	MIX FLUID	5.0bbls	YIELD	4.61cuft/ft	MIX FLUID	20.0bbls	YIELD	1.94cuft/ft	MIX FLUID	60.0bbls
WATER SOURCE	Day Tank			WATER SOURCE	Day Tank			WATER SOURCE	Day Tank		
CEMENT TYPE	at lb/sk			CEMENT TYPE	Class A Cement at 94lb/sk			CEMENT TYPE	Class A Cement at 94lb/sk		
Total Cement Used	sks			Total Cement Used	24sks			Total Cement Used	159sks		
Estimated TOC	0m			Estimated TOC	0m			Estimated TOC	m		

Additive	Concentration	Total Used

Additive	Concentration	Total Used
Pozmix A	20 %BWOC	451lbs
Econolite	1 %BWOC	23lbs
HALAD-344	0.7 %BWOC	16lbs

Additive	Concentration	Total Used
Pozmix A	20 %BWOC	3291lbs
Econolite	1 %BWOC	164lbs
HALAD-344	0.7 %BWOC	114lbs

Tail			
DENSITY	15.2ppg	WATER	4.88gal/sk
YIELD	1.16cuft/ft	MIX FLUID	9.70gal/sk
WATER SOURCE	Day Tank		
CEMENT TYPE	Class A Cement at 94lb/sk		
Total Cement Used	47sks		
Estimated TOC	m		

Additive	Concentration	Total Used
CFR-3	0.5 %BWOC	21lbs
HALAD 344	0.4 %BWOC	17lbs
CACL2	1 %BWOC	42lbs

Confirmed JAB 08/5/13

JOB LOGS

DATE	TIME	VOLUME	PRESSURE (psi)		RATE	JOB DESCRIPTION
20-May-13	14.00					ARRIVE AT CAMP
21-May-13	0.00					CALLED TO RIG
	0:30					ON LOCATION
	0.35					MEET CUSTOMER REP.
	0.35					SPOT EQUIPMENT / RIG UP CEMENT LINE
	1.00					PRE JOB SAFETY MEETING
	1:35					LOAD TOP PLUG / RIG UP CEMENT HEAD
	1:54	5	200	125	4.5	PUMP 5 BBLS OF SPACER - FRESH WATER
	1:58		3000			PRESSURE TEST SURFACE LINES TO 3000 PSI
						BLEED OFF

HALLIBURTON

CUSTOMER	SALES ORDER No.	DATE
Origin Energy	900398313	21 May 2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Mr. Ross	Coal Bed Methane

JOB TYPE	JOB PURPOSE CODE	BDA	RIG
Production Casing	CEMENT PRODUCTION CASING 1600M 7523	Brisbane	Savanna 406

	2:03			200	4	DISPLACE DART
	2:21			500	2.5	DART LANDED
	2:26		1235			INFLATE PACKER
	2:30		2174			STAGE TOOL OPEN
	2:31	5		175	4.5	CIRCULATE WITH FRESH WATER SPACER
	2:38	20		250	6	MIX AND PUMP SCAVENGER CEMENT
						10.50 PPG 4.61 YIELD 29.72 GAL/SKS
	2:41	56		210	6	MIX AND PUMP LEAD
						13.5 PPG 1.94 YIELD 9.74 GAL/SKS
	2:52	12		180	4	MIX AND PUMP TAIL
						15.2 PPG 1.16 YIELS 4.88 GAL/SK
	2:57					END CEMENT
	2:58					SHUT DOWN AND DROP PLUG
	2:58			100	4	START DISPLACEMENT WITH MUD
	3:09	42			4	CEMENT RETURNS TO SURFACE
	3:17	72			2.5	LAND PLUG
	3:17		2000			TEST CASING
						GOOD TEST
	3:28					BLEED OFF AND CHECK FLOATS GOOD .5 BBL BACK
	3:30					RIG DOWN EQUIPMENT
						END JOB
						THANK YOU

END OF JOB LOGS

HALLIBURTON	CUSTOMER	SALES ORDER No.	DATE
	Origin Energy	900393313	21-May-2013

CEMENT/PUMPING JOB SUMMARY

WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
Condabri 156	Condabri	Australia	Jeremy Walters	Mr. Ross	Coal Bed Methane

JOB TYPE	JOB PURPOSE CODE	BDA	RIG
Production Casing	CEMENT PRODUCTION CASING 1600M 7523	Brisbane	Savanna 406

ATTENDEES

Jeremy Walters	Dennis Brennan		
Rig Crew			

HAZARDS FOUND AT JOB SITE

MARK BOXES WITH AN (X) OR LEAVE BLANK IF NOT APPLICABLE

[X] **Electrical** Discuss location of electrical lines and power sources in relation to equipment and lines

[X] **Hydraulic Leaks** - Discussed procedures to follow for leaks

[X] **Chemicals** Discuss harmful substances on the job site (eg. H2S, flammable gasses, drilling fluids, additives well bore fluids, Radioactive). Ask for MSDS sheets when necessary Discuss possible exposures to substances such as dust, acids, akalines, vapours, and Flammable/combustibles

[X] **Communication** Discuss radios, hand signals etc.

[X] **Noise** Discuss noise levels from equipment. Avoid placing high noise producing equipment next to work stations when possible. Avoid areas of high noise if possible or use appropriate hearing protection

[ ] **Explosives** Discuss explosives handling and storage procedure

[ ] **Ignition sources** Discuss possible ignition sources (eg. engines, electrical equipment, open flames, smoking etc.)

[ ] **Lifting** Discuss proper lifting techniques and ways to eliminate or reduce heavy lifting such as; forklifts, cranes, and sharing the load.

[ ] **Wireline** Discuss cables, tape off no go areas.

[ ] **Confined Spaces** Discuss any required entry into confined spaces (eg. Cellars, tanks, pits).

[X] **Walking / Working Surfaces** Discuss the terrain where the rig up and job will occur (eg. Boards, limestone, mud, stairways, walkways, the derrick, and the rig floor Discuss the dangers in walking on cementing equipment, especially on HT400 pumps

[X] **Wellbore fluids or Gasses** Discuss shale shaker, Frac tanks, return lines, and vent lines.

[X] **Slipping and tripping** Discuss tripping hazards (eg. equipment and lines on the ground and rig floor, suction hoses and vent lines)

[X] **Falling** Discuss job procedures requiting work at heights greater than 1.8m

[X] **Environment** Discuss environmental conditions (eg. heat, cold, ice snow, rain, wind, dust, visibility etc.)

[X] **Overhead** Discuss overhead hazards (eg, guy wires, hazards while on rig floor or under the rig floor). Discuss equipment rigged up overhead such as DME above the rig floor, lubricators, chains, pulleys.

[ ] **Radiation** Discuss radiation hazards introduced to the site.

[X] **Pressure** Discuss pressure hazards such as DME and bulk tanks

HAZARD CONTROLS

[X] **Personal protective equipment** Discuss required PPE such as respirators, head protection, hearing protection, protective footwear, hand and skin protection, and fall protection

[X] **Assembly Points** Discuss where to gather in the event of an emergency.

[X] **Physical barriers** Discuss items such as hose covers, line tie-downs, guards, railings, and inert gas blankets.

[X] **Location of eyewash / safety shower station** Discuss the location of the eyewash / safety shower station and how to use it.

[X] **Spill control** Discuss measures used for reporting and containing spills.

[X] **Vents** Discuss vent lines for Frac tanks and bulk tanks.

[X] **Ignition source controls** Discuss control measures for ignition sources such as the use of spark arresters, emergency shutdown procedures, and NO SMOKING rules.

[X] **Safety equipment** Discuss safety items such as pop-off valves, fire extinguishers, and communication devices.

[X] **Emergency Shut Down Procedures** Discuss when, how and what to shut down in the event of an emergency.

[X] **Wind direction** Discuss the wind direction and how it may change the contingency plan such as the assembly area location, and discuss how to detect wind direction on the job site (eg. Windsocks, streamers etc.)

[X] **Recovery Procedures** Discuss how to return to normal operating procedures after an emergency.

[X] **Fire fighting** Discuss fire fighting responsibilities with the appropriate personnel (trained & equipped personnel only)

[X] **First Aid Station** point out the location of the first aid kit and who is responsible for administering first aid.

[X] **High Pressure Manifolding** Clearly mark all high pressure manifolding after rigging it up and before commencing any pumping. Possible marking may include: Yellow tape, signs, roping off the area, orange cones etc.

[X] **Environment** Discuss control measures for environmental factors such as temperature, wind, ice, rain, snow, etc.

[X] **Injury and Accident Procedures** Discuss personnel responsibilities and procedures in the event of an injury or accident.

[X] **Rescue Procedures** Discuss rescue procedures with the appropriate personnel (trained and equipped)

PERSONELL RESPONSIBILITES

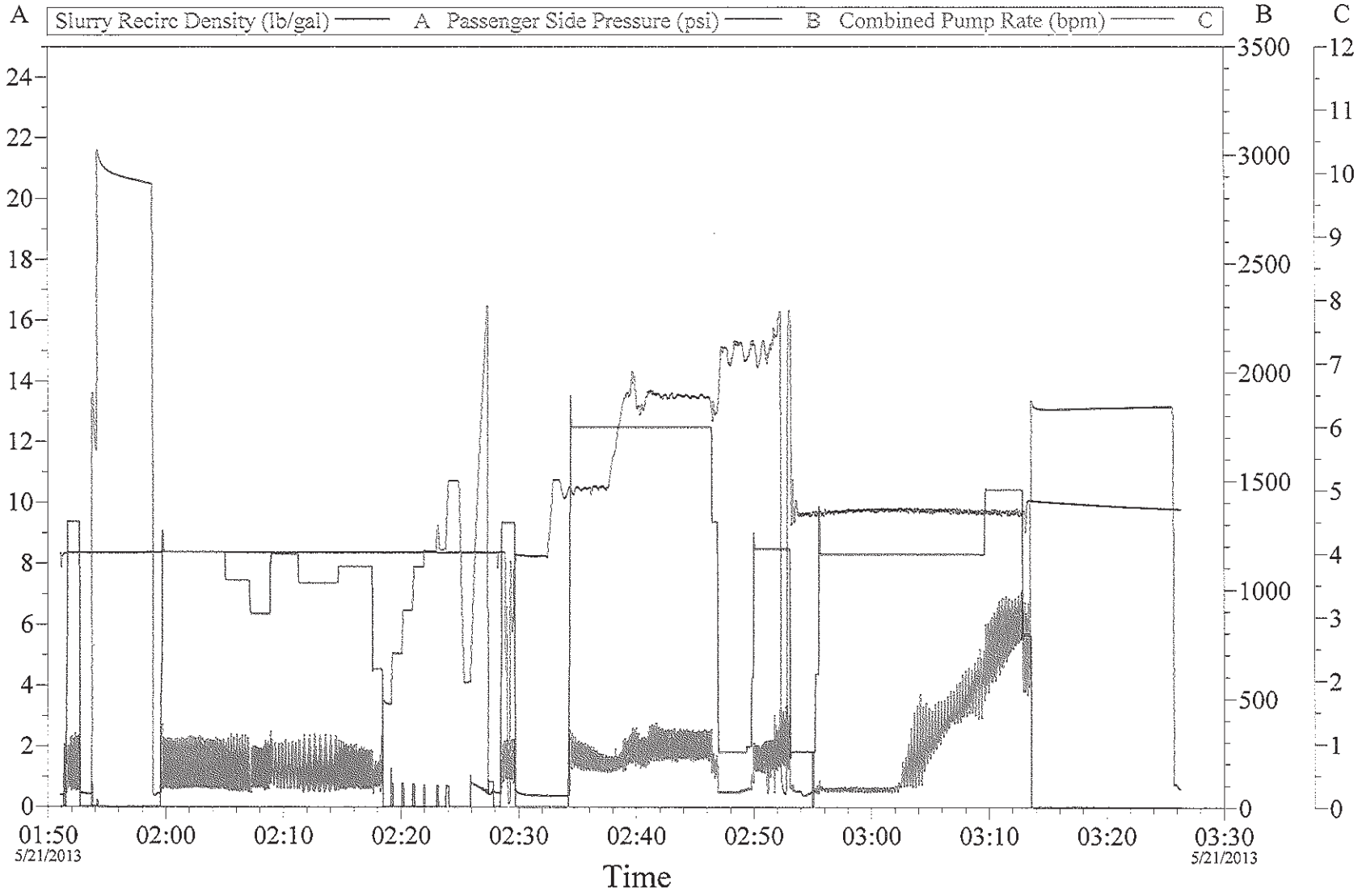
Discuss individual roles and responsibilities for all of the above. Determine the level of understanding by asking questions, performing skill checks or other forms of evaluation, depending upon the hazards of the process (eg. Opening and closing of valves, the correct use of communication devices, the correct use of specific PPE such as fall protection, and an understanding of equipment and procedures.

EMERGENCY PROCEDURES

TOTAL EVACUATION AREA!!

CONTACT DETAILS

Ambulance / EMS:	000 (or 112 for mobile phones)	First Aid Responders on this site (names):	Rig Manager
Doctor:			
Supervisor: Halliburton	07 4622 4588 or 0458 458 184	Hospital:	
Fire Department	000 (or 112 for mobile phones)	Police:	000 (or 112 for mobile phones)
Information Centre:		National Poisons and Hazardous Chemicals	13 11 26



Customer: Halliburton	Job Date: 05/21/13	Ticket #: 01:51:04
Well Desc: Technology #RTD Stg GOLD	UWI:	Control ver 4.20, Display ver 4.20

TG Version G3.4.1
21-May-13 04:00

APPENDIX 7 – DIRECTIONAL SURVEY

Directional Survey

CONDABRI 156

Wellbore Name	Parent Wellbore	Kick Off Depth (mKB)	Vertical Section Direction (°)
Original Hole	Original Hole		
Date	**As Ran**	**Description**	**Proposed?**
20/05/2013	No	GPIT	No

MD Tie In (mKB)	TVDTie In (mKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (m)	EWTie In (m)
0.00	0.00	0.00	0.00	0.00	0.00

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	VS (m)	NS (m)	EW (m)	DLS (°/100ft)	Method	Survey Company
21/05/2013	99.21	0.09	254.66	99.21	-0.06	-0.02	-0.08	0.03	E-Log	Schlumberger Wireline
21/05/2013	199.80	0.27	162.25	199.80	0.02	-0.27	-0.08	0.09	E-Log	Schlumberger Wireline
21/05/2013	300.38	0.39	195.10	300.38	0.20	-0.82	-0.10	0.07	E-Log	Schlumberger Wireline
21/05/2013	400.96	0.51	124.11	400.96	0.66	-1.40	0.19	0.16	E-Log	Schlumberger Wireline
21/05/2013	501.55	0.98	108.56	501.54	1.95	-1.93	1.37	0.15	E-Log	Schlumberger Wireline
21/05/2013	702.72	1.75	101.53	702.65	6.71	-3.09	6.01	0.12	E-Log	Schlumberger Wireline
21/05/2013	803.30	1.93	102.64	803.18	9.91	-3.77	9.17	0.06	E-Log	Schlumberger Wireline
21/05/2013	876.45	1.87	100.74	876.29	12.31	-4.26	11.54	0.04	E-Log	Schlumberger Wireline

APPENDIX 8 – WIRELINE LOGS

CBL/VDL/MAP/GR/CCL
SCALE 1:200
FIELD PRINT ONLY

File No:	**Company**	ORIGIN ENERGY	
	Well	CONDABRI 156	
	Field	CONDABRI	
	State	QUEENSLAND **Country**	AUSTRALIA
	Location	LAT: 026 DEG 55' 04.75" S LONG: 150 DEG 14' 23.39" E	Other Services: NONE

Permanent Datum	GL	Elevation	313.00M	Elev RT.	316.80M
Log Meas. From	RT	M. Above Datum	3.80M	Elev D.F.	
Drilling Meas. From	RT			Elev G.L.	313.00M

Date	05 - OCTOBER - 2013
Run No	1
Type Log	RADIAL BOND LOG
First Reading	580.00M
Last Reading	0.00M
Meters Measured	580.00M
Depth Reached	585.00M
Bottom Driller	880.40M
Well Head Pressure	0 PSI
Fluid Level	22.91M
Truck No	WU 11
Recorded By	A.TYSON
Witnessed By	G.REECE

PERFORATIONS

Shot Density	No Of Shots	From	To

Casing

Size	Weight	From	To
7"	23PPF	0.00M	880.68M

Collar Location		Other Services			
Casing	Tubing	Service	Type	Size	Depth

Tubing Bottom		Seating Nipple	
Junk Basket Size		Gauge Ring Number	

Remarks: FIELD PRINT ONLY NO CORRELATION LOG SUPPLIED ON SITE. FIRST RIH PROCEDURES FOLLOWED.

Previous Completion	
Depth Control Log	FIRST RIH PROCEDURE FOLLOWED
Perforated	
Bridge Plug Set At	
Cement Retainer Set At	
Production Packer Set At	

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents, or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.

Tool String Configuration

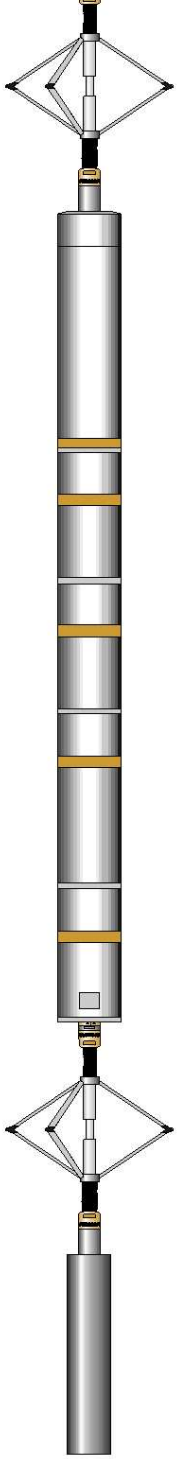
Max. Length: 5.28 m

CCL-GR

Length: 0.40 m Max Diameter: 69.65 mm

Centralizer
Length: 0.77 m Max Diameter: 288.93 mm

DSS RIB CBL
Length: 2.68 m Max Diameter: 69.85 mm



1.71 m - Transmitter

2.32 m - RIB Receivers

2.63 m - 3 ft. Receiver

3.24 m - 5 ft. Receiver

Roller Centralizer (1 3/8)
Length: 0.77 m Max Diameter: 288.93 mm

Gamma Ray
Length: 0.66 m Max Diameter: 68.95 mm

4.83 m - Gamma Ray

5.13 m Bottom of String

MAIN PASS

2013-10-05 18:31

CCL
0.00 100.00

Temp
0.00 100.00

Gamma
0.00 200.00

Pass No. 143

Tension (lbF)
0 400

METERS
1:200

0.37

3 Foot Amplitude (mV)
0.00 100.00

Min Amp radial (mV)
0.00 100.00

Max Amp radial (mV)
0.00 100.00

Ave Amp radial (mV)
0.00 100.00

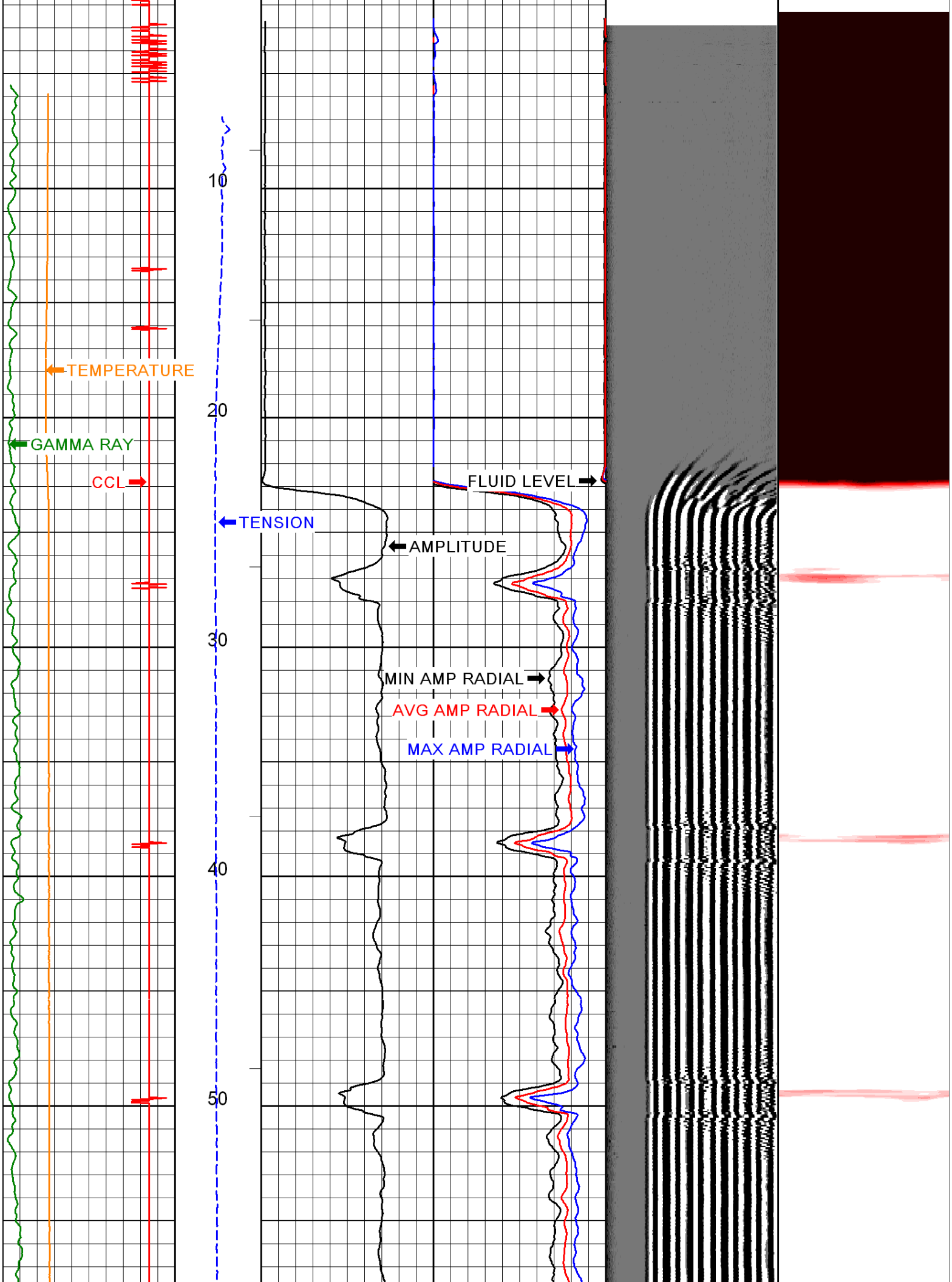
VDL (µs)
200.00 1200.00

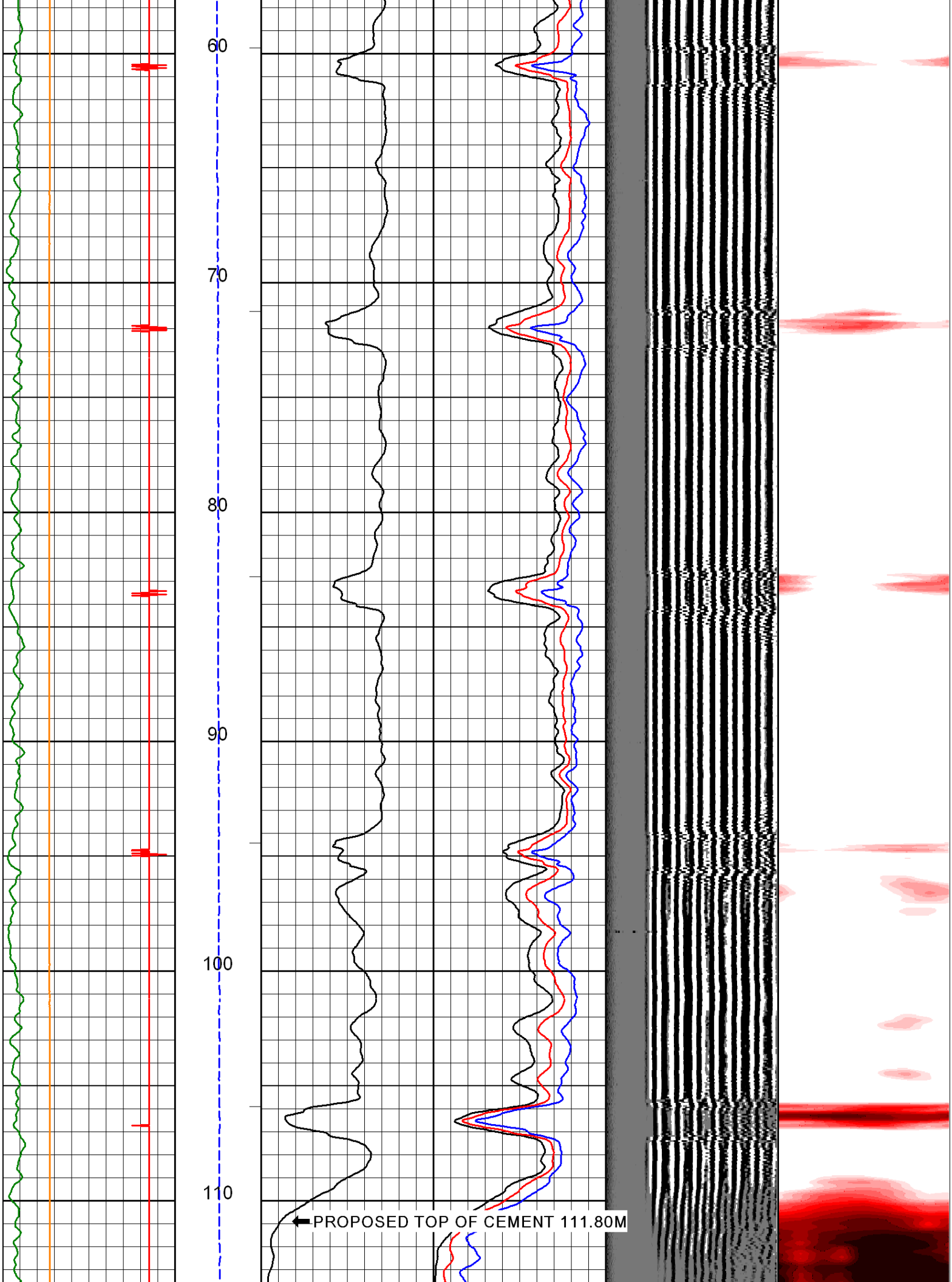
Cement Map (mV)
3.00 40.00

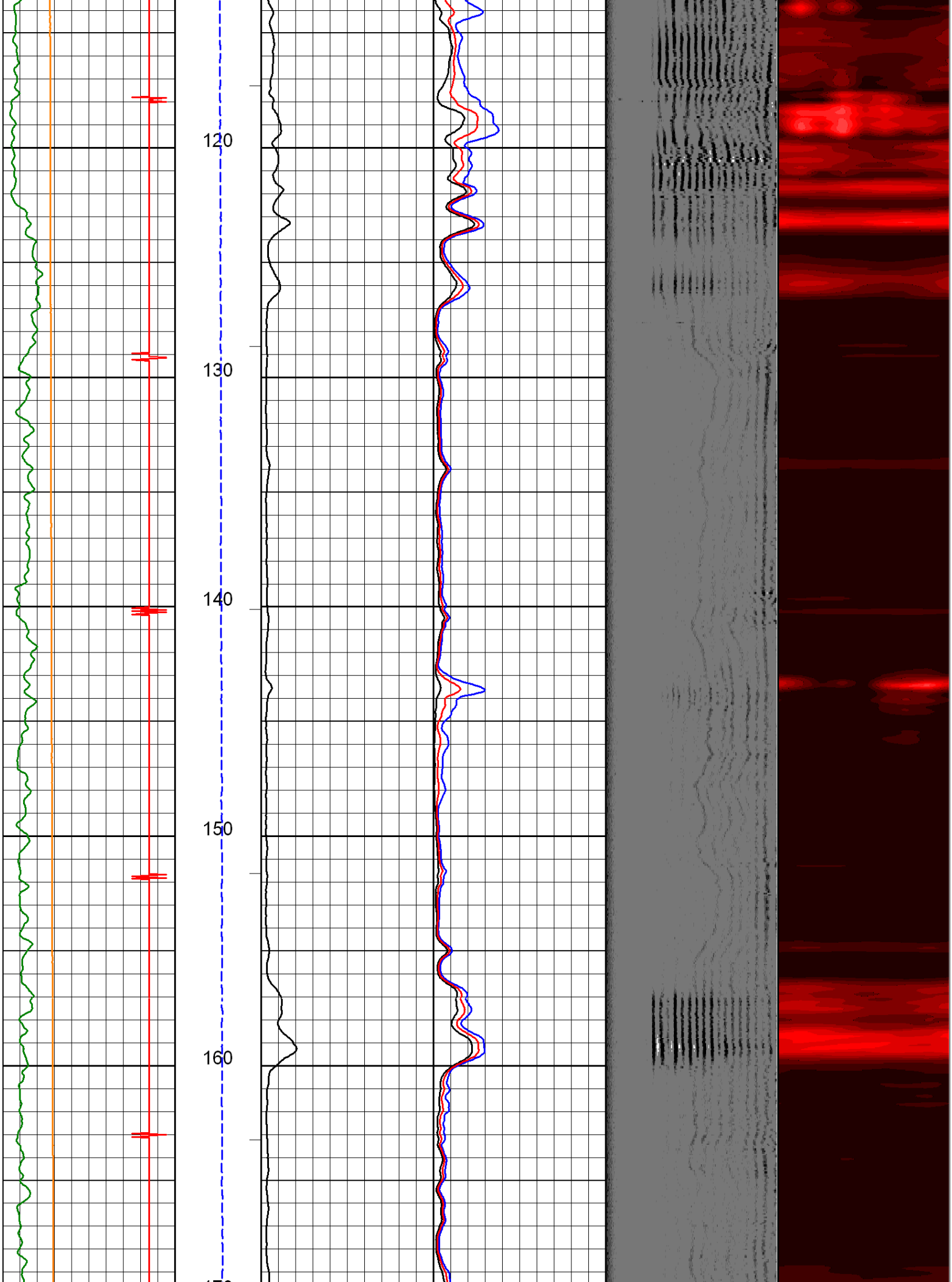
Logging Up
Shutin

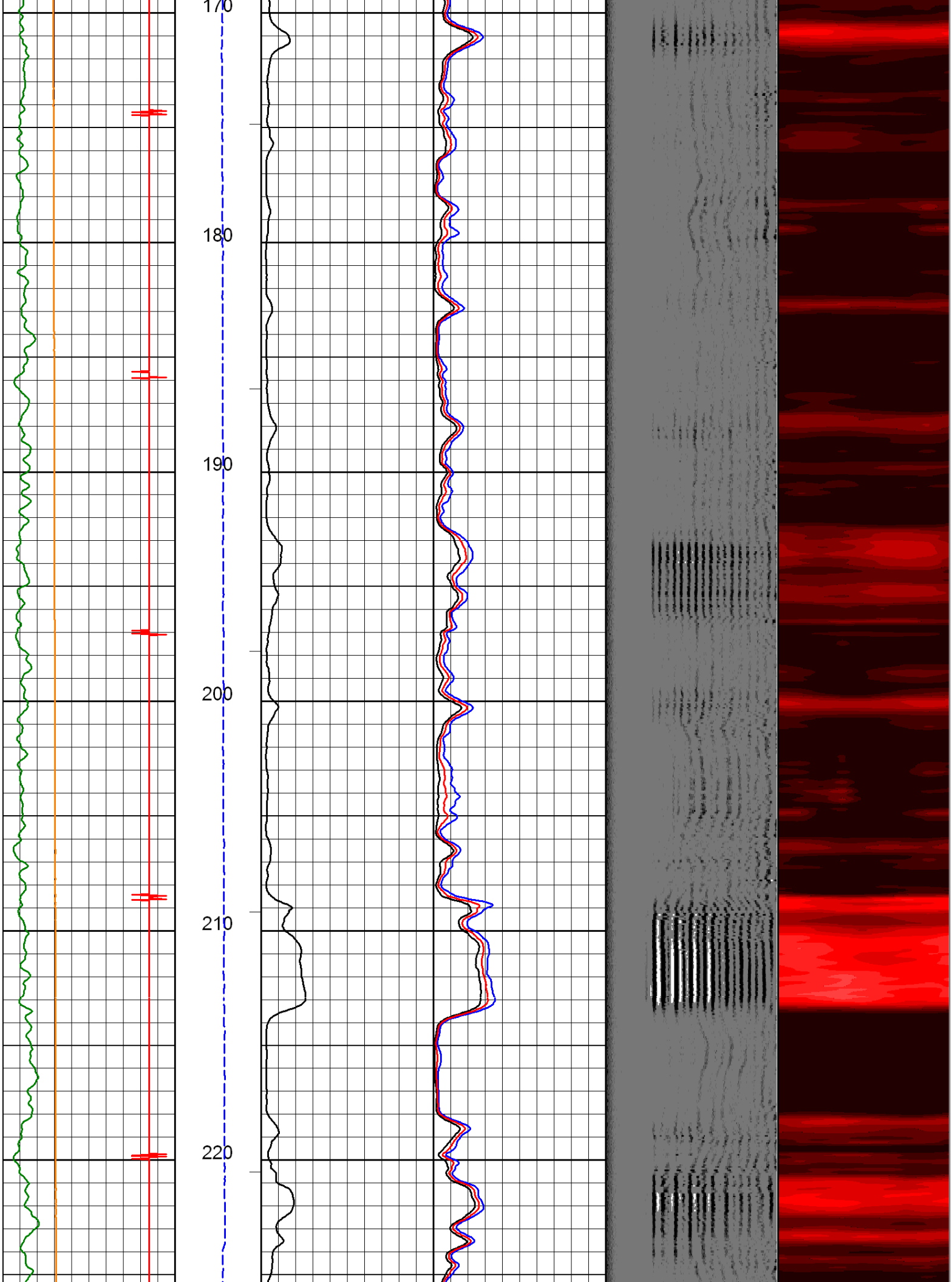
File Origin_Condabri 156_RBT_Main_200_051013.pre

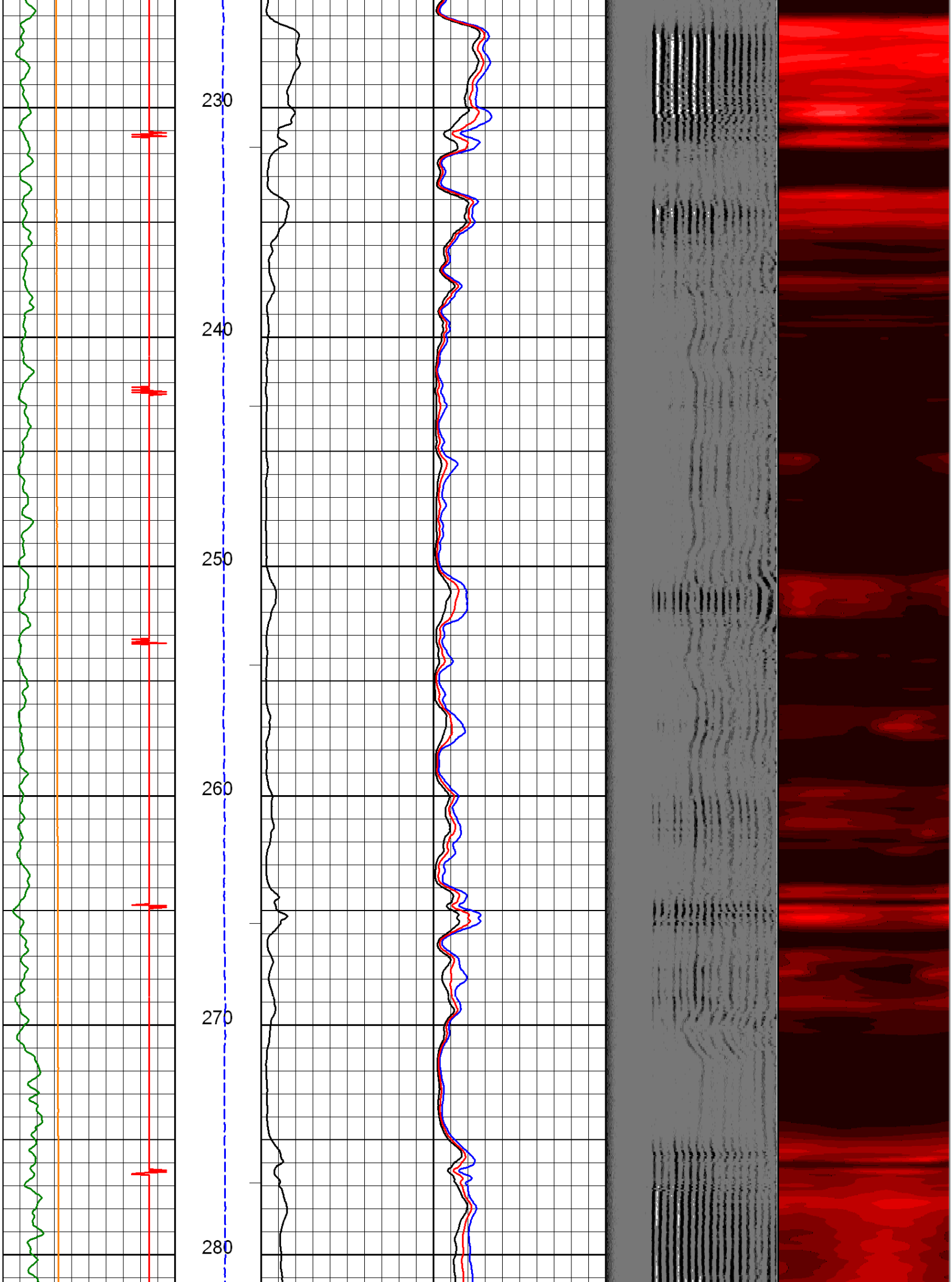
120113

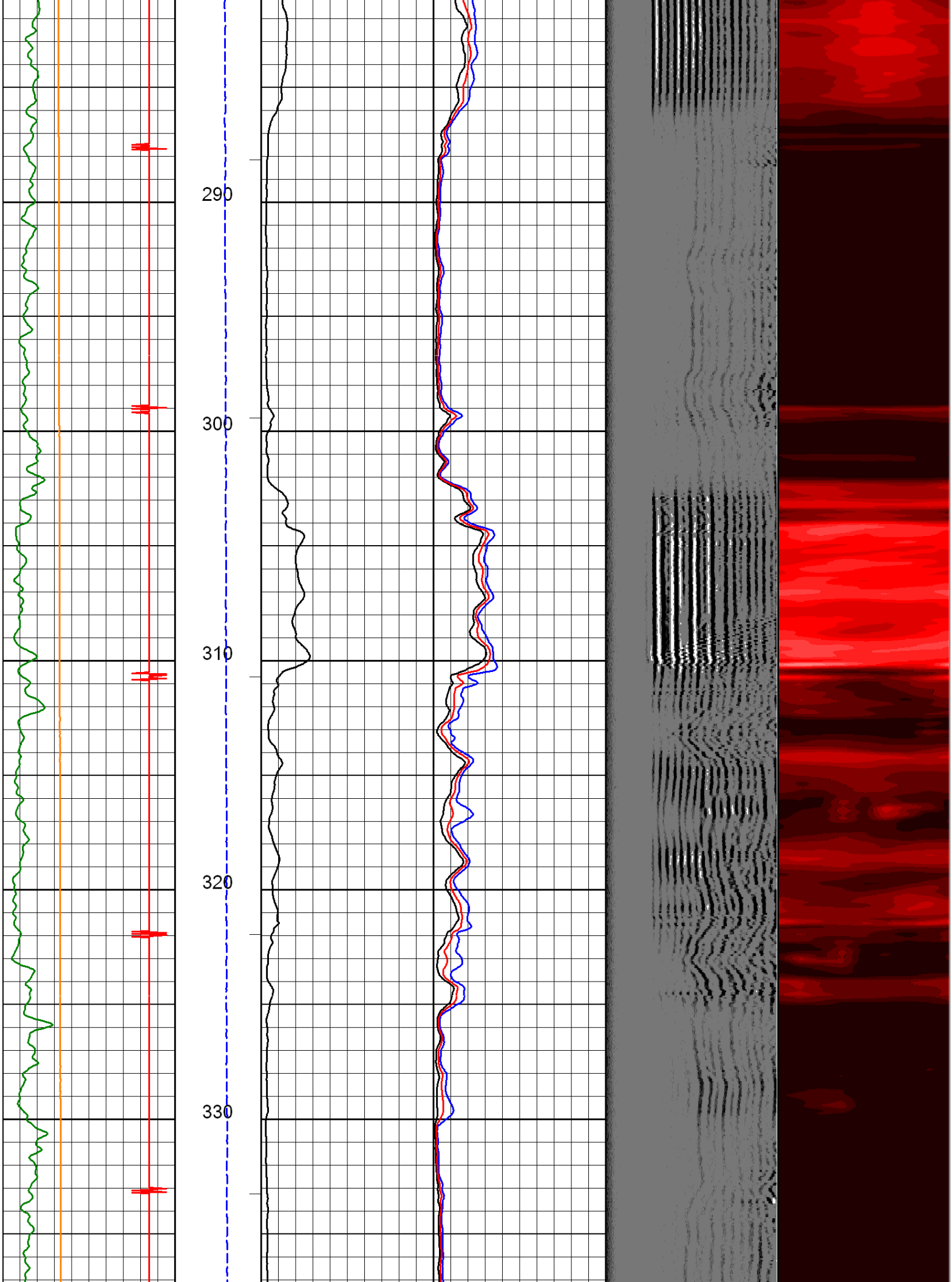

10
20
30
40
50
TEMPERATURE
GAMMA RAY
CCL
TENSION
AMPLITUDE
FLUID LEVEL
MIN AMP RADIAL
AVG AMP RADIAL
MAX AMP RADIAL

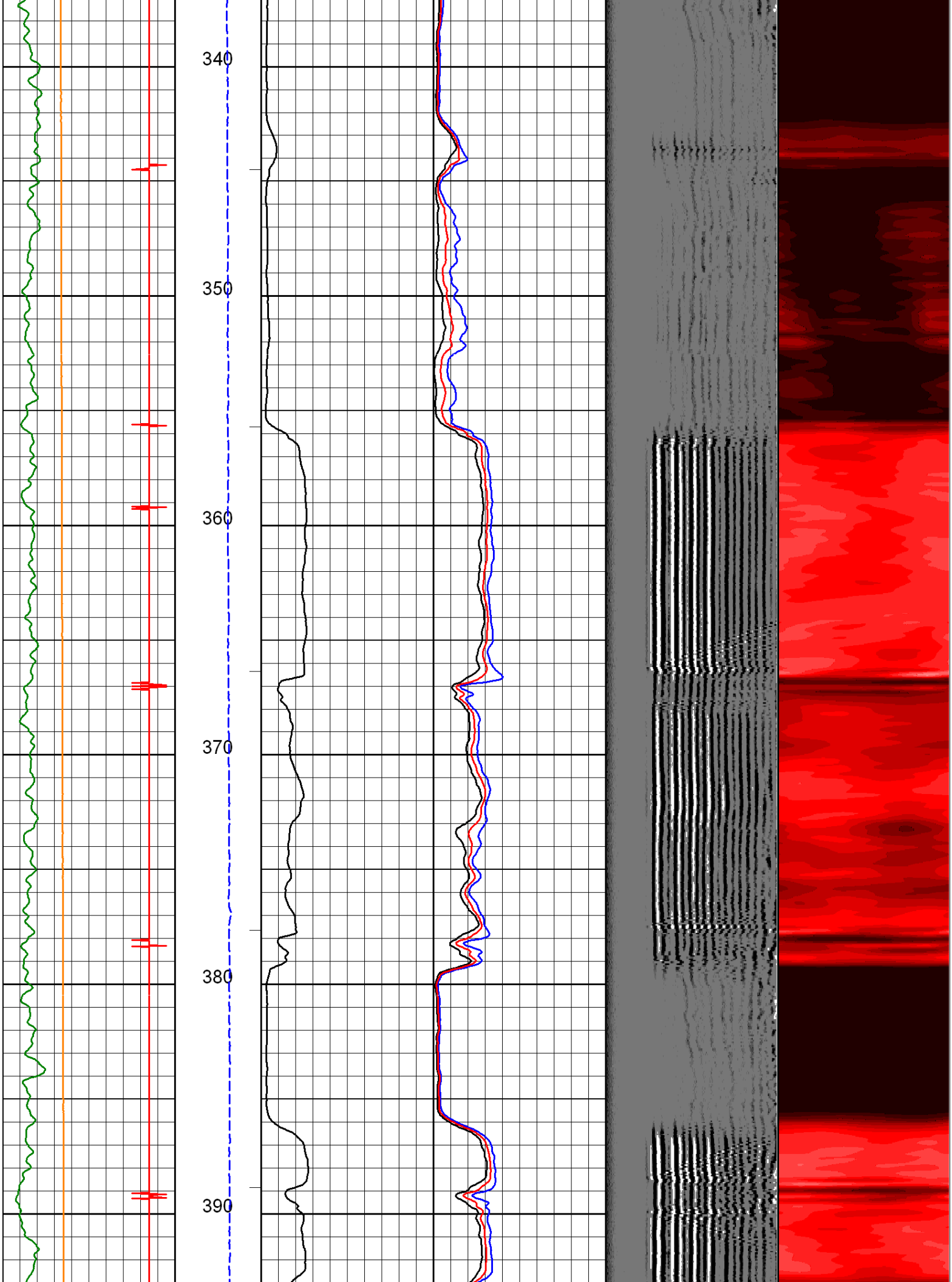

60
70
80
90
100
110
PROPOSED TOP OF CEMENT 111.80M

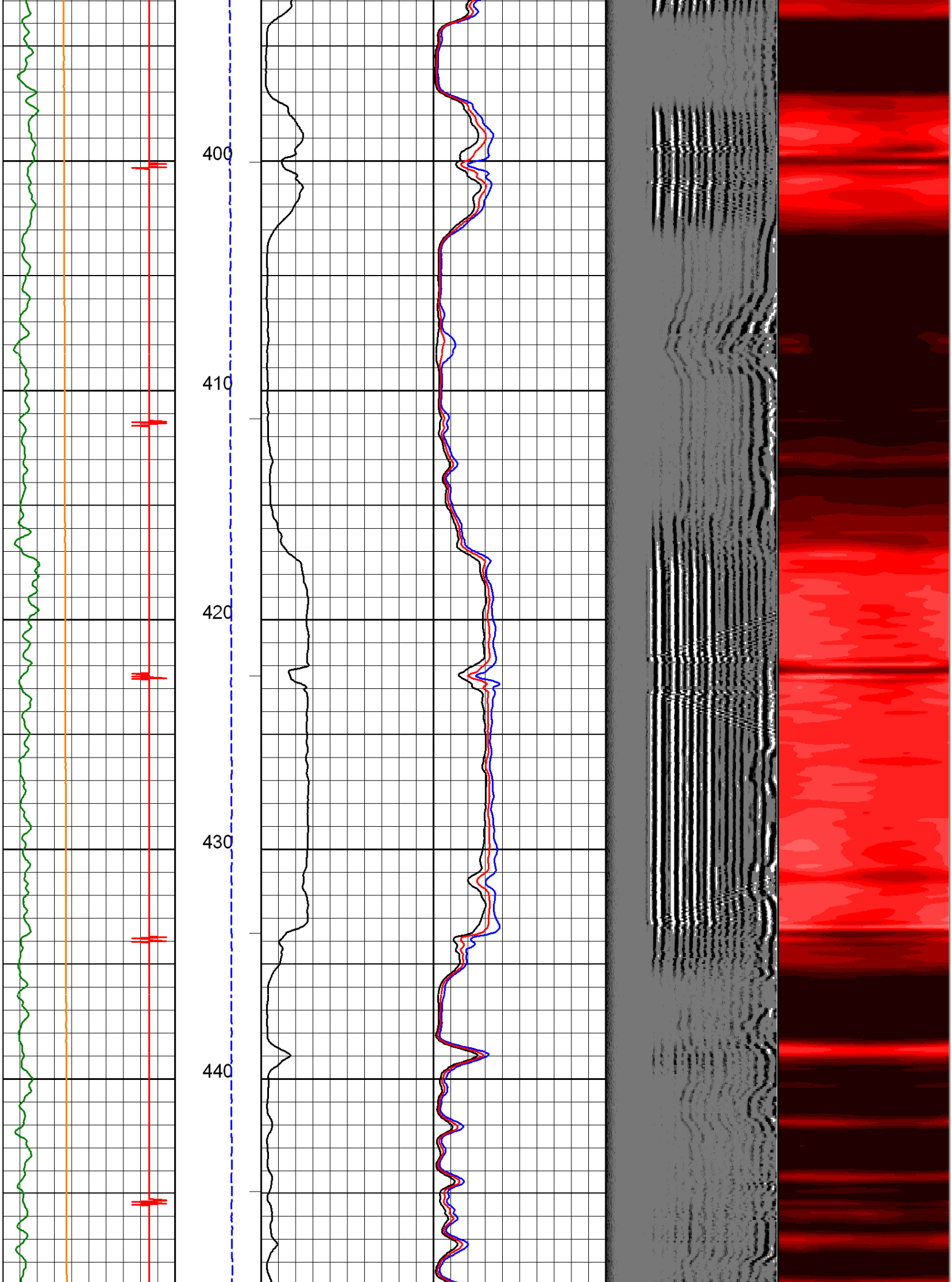

120
130
140
150
160

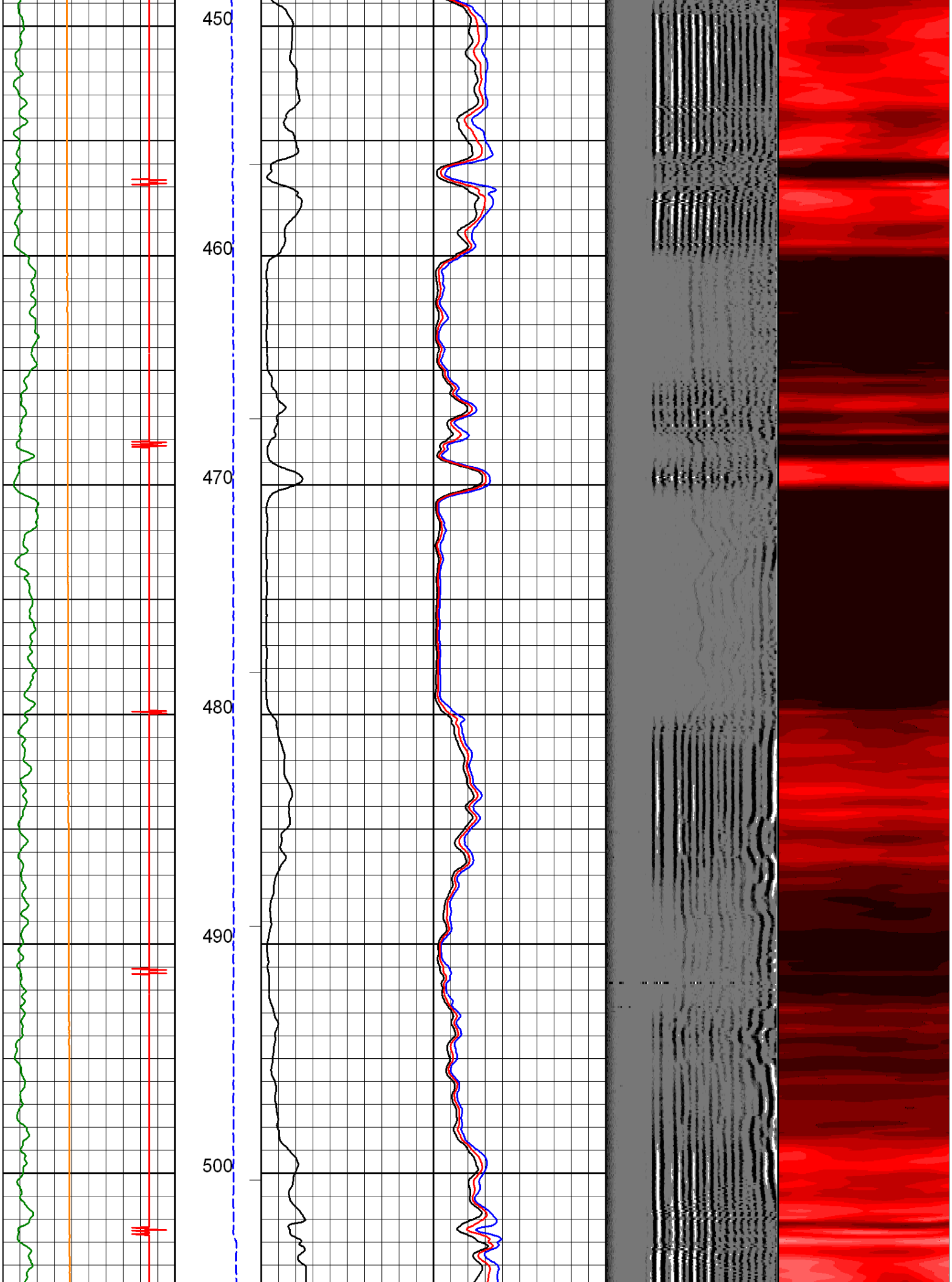

170
180
190
200
210
220


230
240
250
260
270
280


290
300
310
320
330


340
350
360
370
380
390


400
410
420
430
440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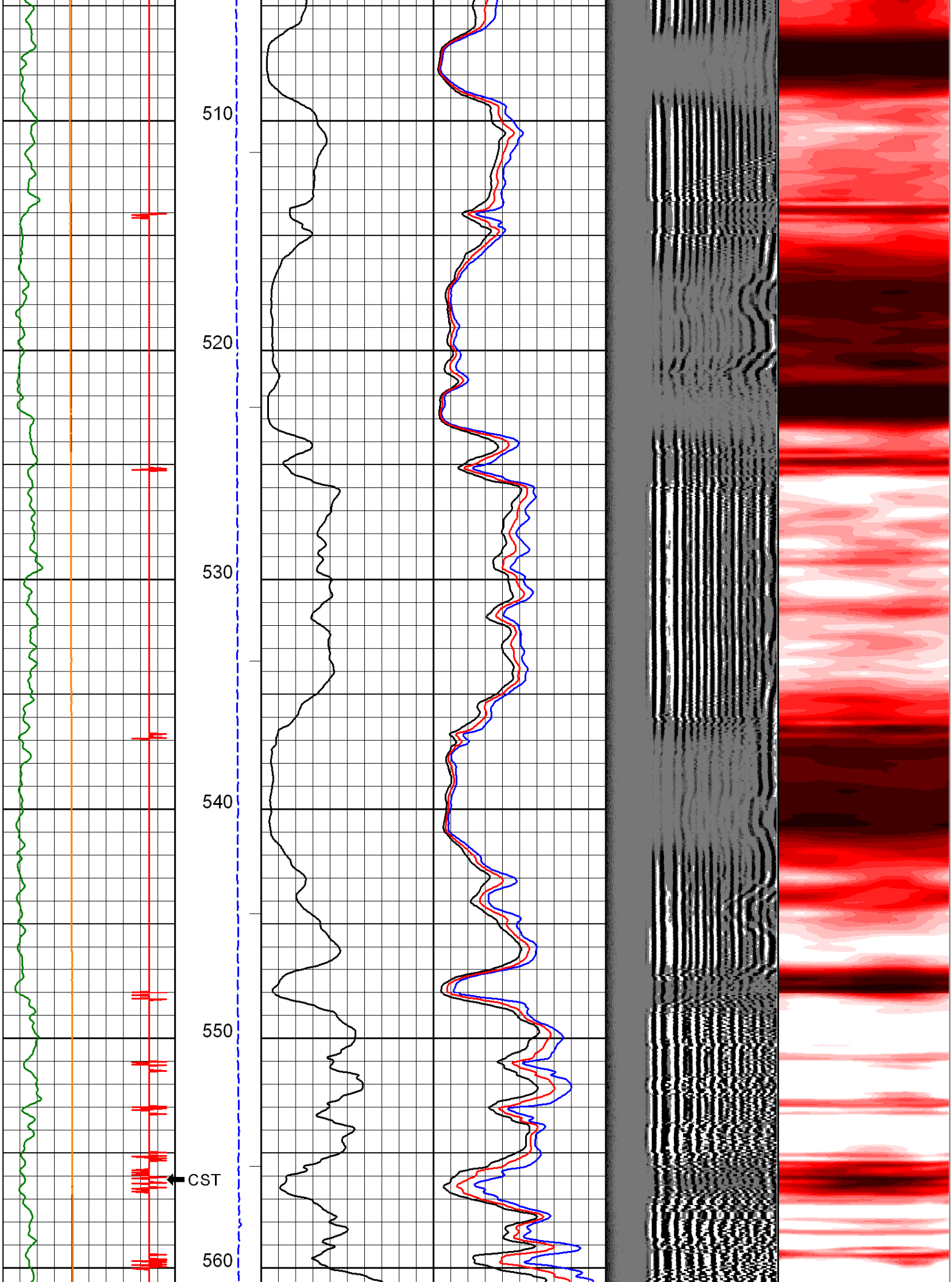
460
470
480
490
500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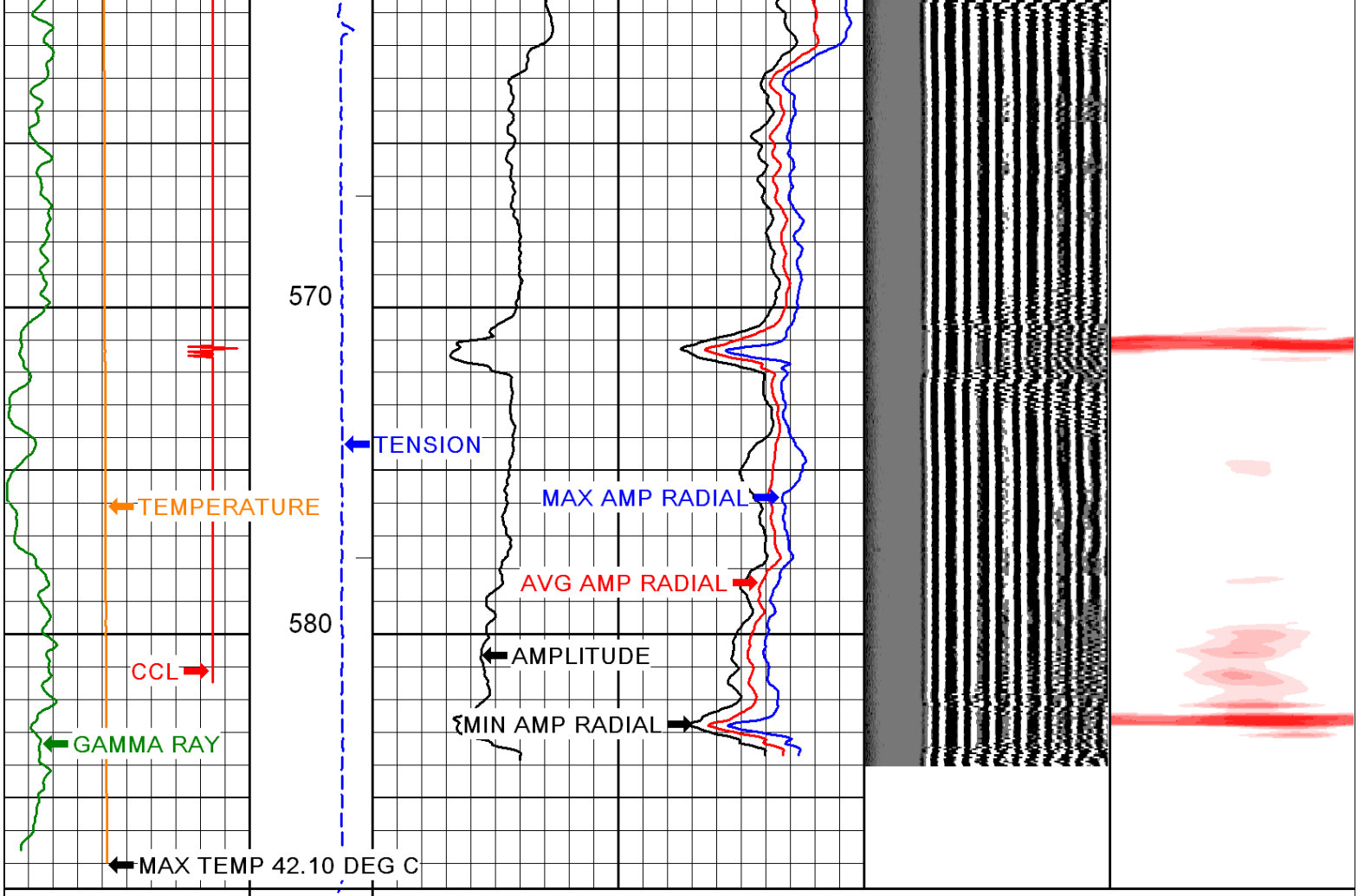
520
530
540
550
CST
560



2013-10-05 18:31
CCL
0.00 100.00
Temp
0.00 100.00
Gamma
0.00 200.00
Pass No. 143

587.80
Tension (lbF)
0 400
METERS
1:200

3 Foot Amplitude (mV)
0.00 100.00

Min Amp radial (mV)
0.00 100.00

Max Amp radial (mV)
0.00 100.00

Ave Amp radial (mV)
0.00 100.00

VDL (µs)
200.00 1200.00

Cement Map (mV)
3.00 40.00

Logging Up
Shutin

File Origin_Condabri 156_RBT_Main_200_051013.pre

120113

REPEAT PASS

2013-10-05 18:21
CCL
0.00 100.00
Temp
0.00 100.00
Gamma
0.00 200.00
Pass No. 142

Tension (lbF)
0 400
METERS
1:200

478.63

3 Foot Amplitude (mV)
0.00 100.00

Min Amp radial (mV)
0.00 100.00

Max Amp radial (mV)
0.00 100.00

Ave Amp radial (mV)
0.00 100.00

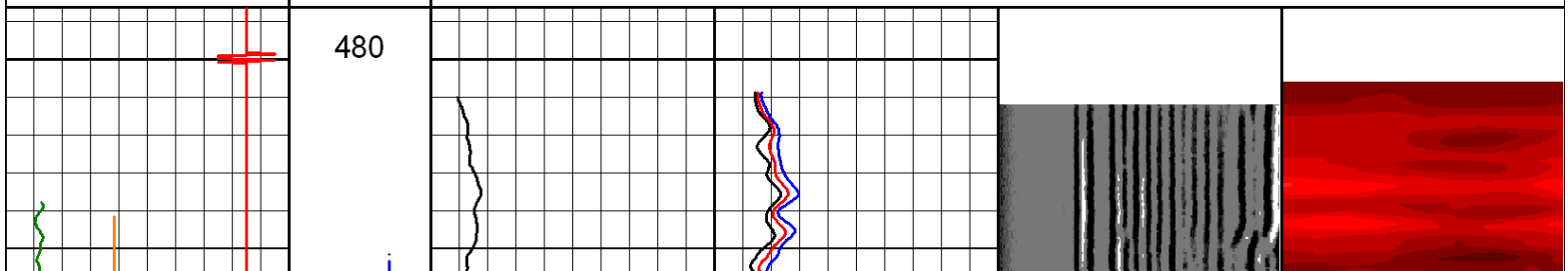
VDL (µs)
200.00 1200.00

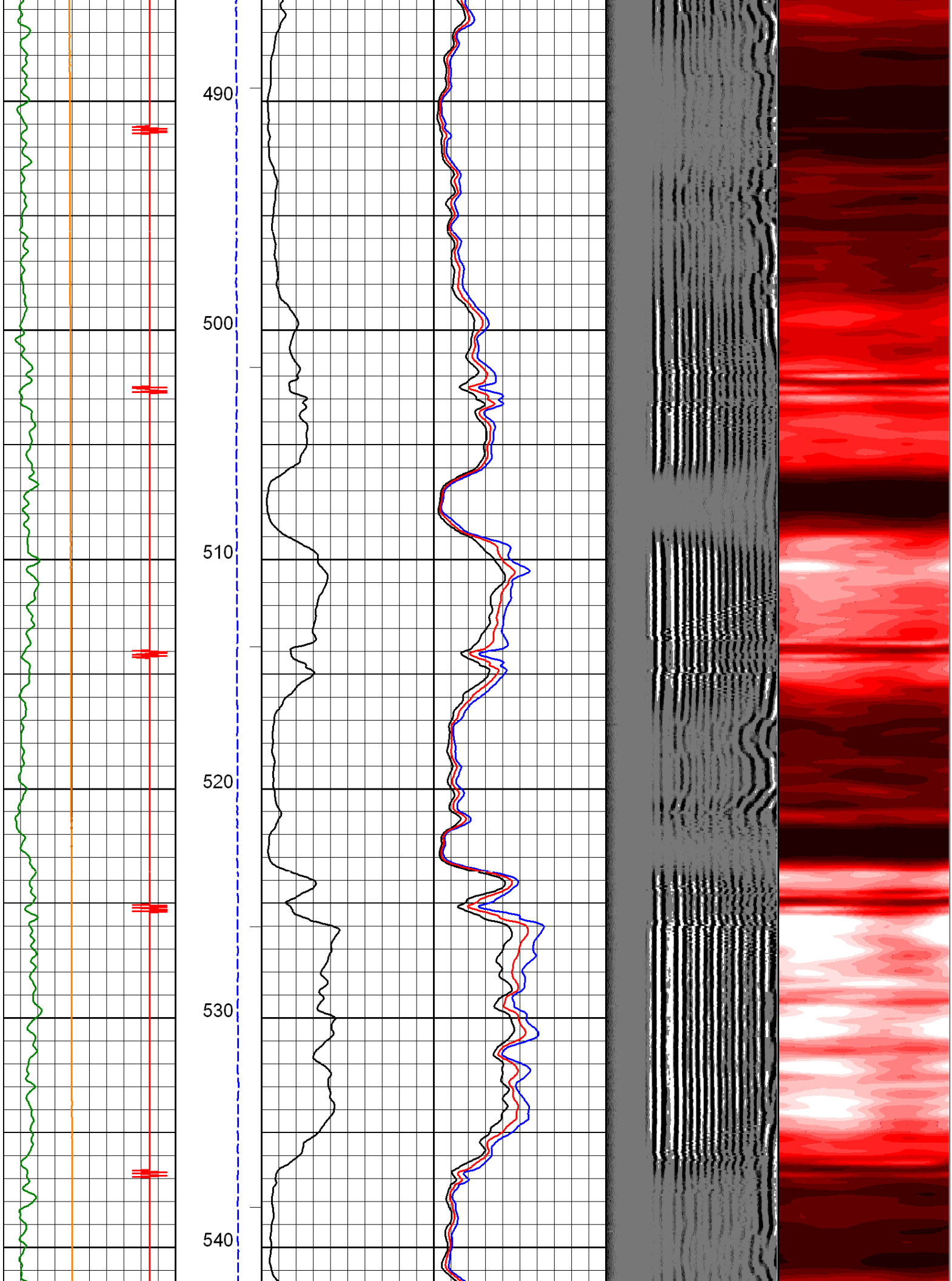
Cement Map (mV)
3.00 40.00

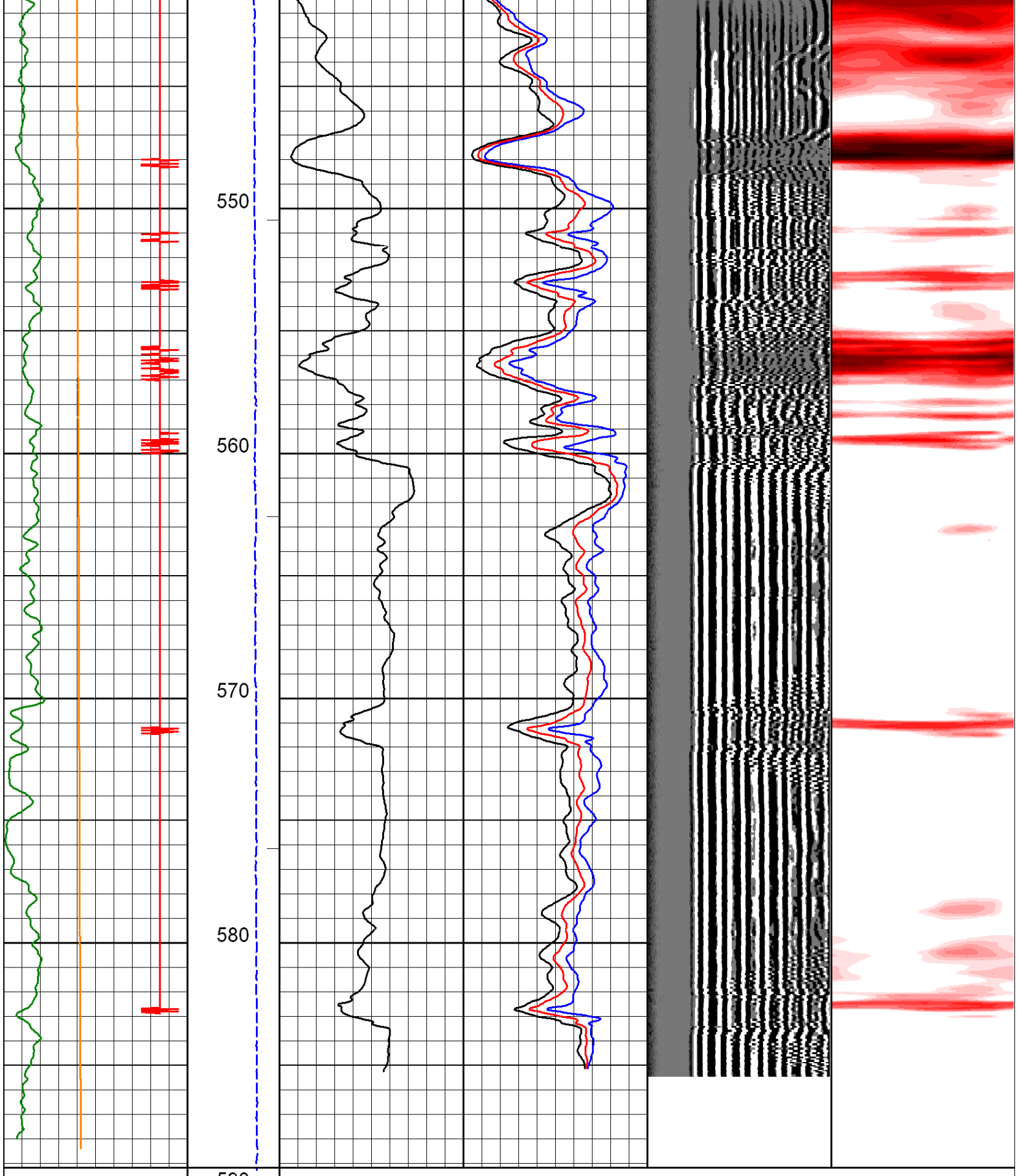
Logging Up
Shutin

File Origin_Condabri 156_RBT_Repeat_200_051013.pre

120113




490
500
510
520
530
540



2013-10-05 18:21

CCL
0.00 100.00

Temp
0.00 100.00

Gamma
0.00 200.00

Pass No. 142

589.20

Tension (lbF)
0 400

METERS
1:200

3 Foot Amplitude (mV)
0.00 100.00

Min Amp radial (mV)
0.00 100.00

Max Amp radial (mV)
0.00 100.00

Ave Amp radial (mV)
0.00 100.00

VDL (µs)
200.00 1200.00

Cement Map (mV)
3.00 40.00

Logging Up
Shutin

File Origin_Condabri 156_RBT_Repeat_200_051013.pre

120113

Company	ORIGIN ENERGY
Well	CONDABRI 156
Field	CONDABRI
Province	QUEENSLAND **Country** AUSTRALIA
Location	LAT: 026 DEG 55' 04.75" S LONG: 150 DEG 14' 23.39" E

Resistivity, Density, Neutron, GR Log

AIT-PEX-GPIT

1:500 Scale

Schlumberger

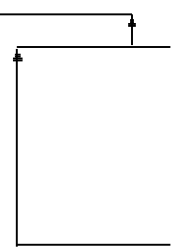
Company:	Origin Energy Ltd
Well:	Condabri 156
Field:	Condabri
Rig:	Savanna 406
State:	Queensland
Country:	Australia

Latitude:	26° 55' 4.78" S	UWID:	
Longitude:	150° 14' 23.394" E	Rig Name:	Savanna 406
		Rig Type:	Land

FL:	GDA 94 Zone 56
FL1:	Easting: 225888 E
FL2:	Northing: 7019657 N

Log Measured From: - Drill Floor: 3.80 m

Permanent Datum: - Ground Level: 313.00 m



Reference Datum - Mean Sea Level

Acquisition Dates:	20-May-2013
Log Interval:	20.71(m) -- 888.74(m)
Index Types:	Measured Depth
Index Scales:	1:500
Depth Source:	Wireline Depth
Depth Sensor:	IDW
Print Type:	Final

Other Services:

None

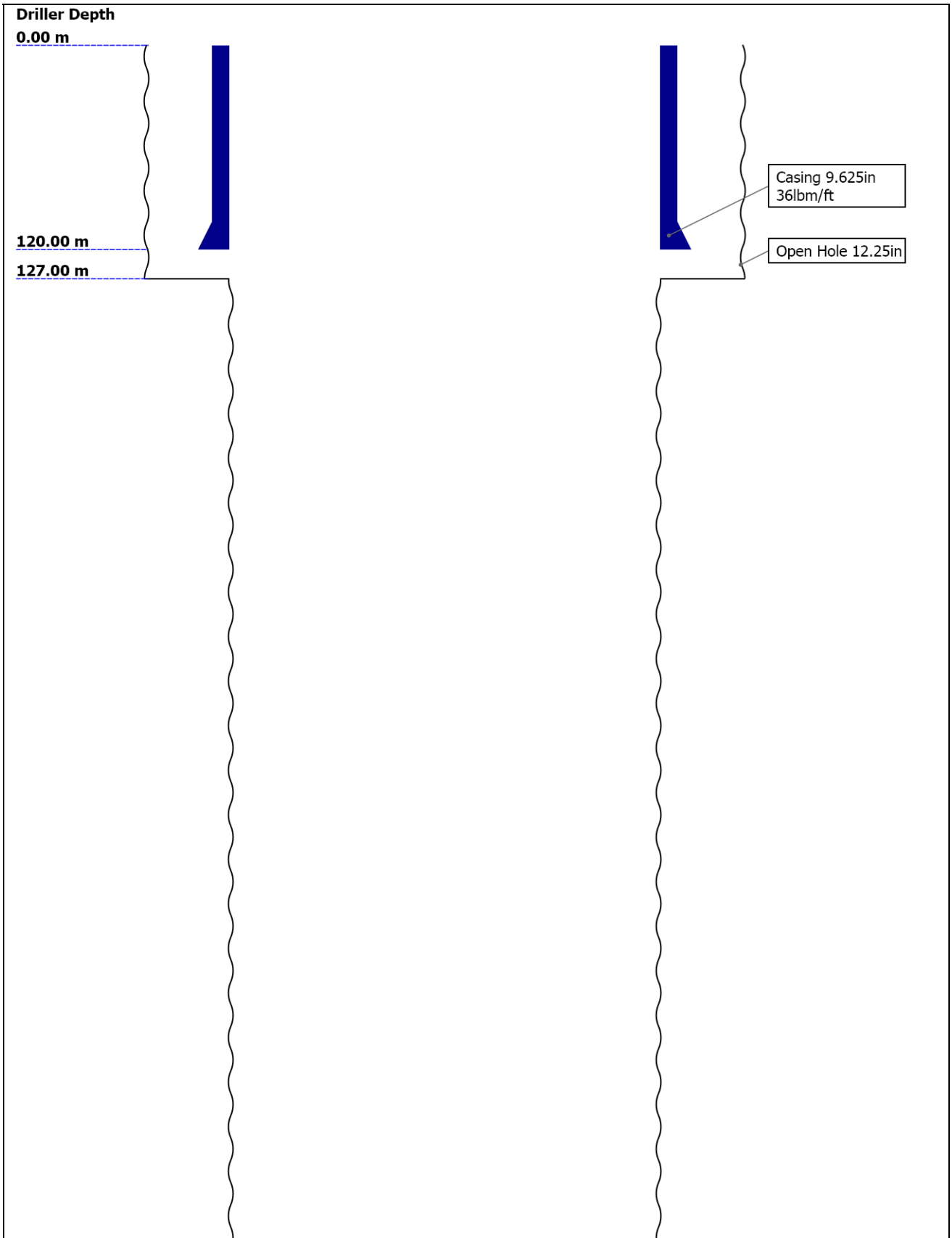
Company: Origin Energy Ltd Well: Condabri 156 Field: Condabri Rig: Savanna 406 State: Queensland Country: Australia

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

Well Sketch



Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	8.75				
Top Driller (m)	0	127				
Top Logger (m)	0	127				
Bottom Driller (m)	127	885				
Bottom Logger (m)	127	886.26				
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.914					
Grade	K55					
Top Driller (m)	0					
Top Logger (m)	0					
Bottom Driller (m)	120					
Bottom Logger (m)	120.19					

Operational Run Summary

Parameter (unit)	AIT-PEX-GPIT					
Date Log Started	20-May-2013					
Time Log Started	16:46:33					
Date Log Finished	20-May-2013					
Time Log Finished	20:22:41					
Top Log Interval (m)						
Bottom Log Interval (m)						
Total Depth (m)	886.26					
Max Hole Deviation (deg)						
Azimuth of Max Deviation (deg)						
Bit Size (in)	8.750					
Logging Unit Number	3170					
Logging Unit Location	AURM					
Recorded By	A.Mon/J.Niggins					
Witnessed By	Derryll Paliwoda/Ross					

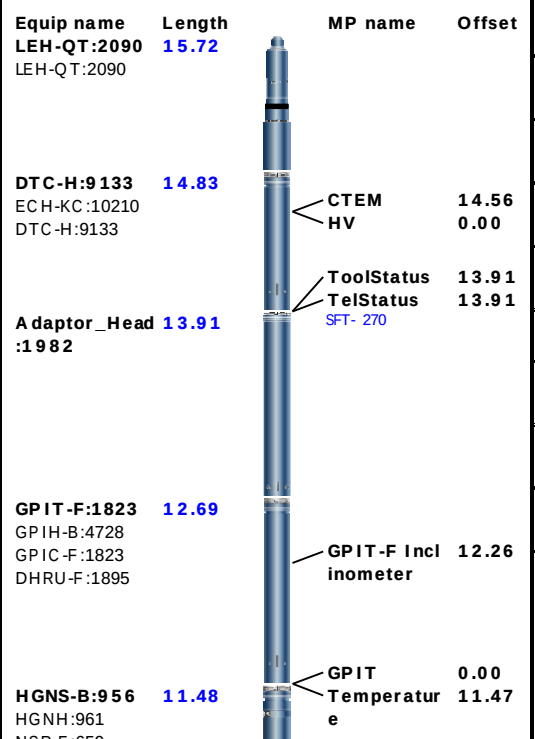
	McKay					
Service Order Number	CCT8-00021					

Borehole Fluids

Parameter(unit)	AIT-PEX-GPIT					
Fluid Type	Water					
Fluid Name	KCL Polymer					
Max Recorded Temperatures (degC)	45.62					
Source of Sample	Active Tank					
Salinity (ppm)	23063.2					
Density (lbm/gal)	9					
Funnel Viscosity (s)	40					
Fluid Loss (cm3)						
PH	9					
Date/Time Circulation Stopped	20-May-2013 12:00:00					
Date Logger on Bottom	20-May-2013					
Time Logger on Bottom	18:18:20					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degC)	0.27 @ 23.8					
RMF @ Meas Temp (ohm.m@degC)	0.2 @ 23.8					
RMC @ Meas Temp (ohm.m@degC)	0.34 @ 23.8					
RM @ BHT (ohm.m@degC)	0.18 @ 44.42					
RMF @ BHT (ohm.m@degC)	0.14 @ 44.42					
RMC @ BHT (ohm.m@degC)	0.23 @ 44.42					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

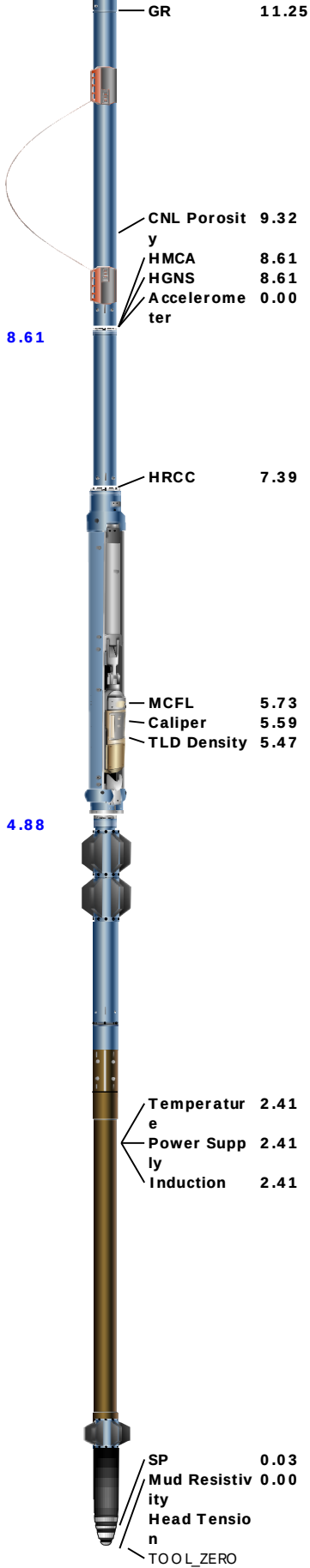
AIT-PEX-GPIT: Toolstring



AIT-PEX-GPIT: Remarks

AIT-PEX-GPIT: Remarks
Logging objectives: To evaluate 8.75" open hole section.
All presentations, intervals and toolsketch as per client program.
Toolstring ran with 3 standoffs on AIT and a boespring on HGNS.
Maximum logging speed was 1800 fph to acquire High Resolution data.
Repeat pass logged from TD to 795m to acquire 70m of valid data.
Main pass logged from TD to surface.
Maximum hole deviation from GPIT was 2.07deg.
Caliper check in casing was 8.75". Caliper shift of 0.16" applied.
Correlation with GR at 3 picks: 819.61m, 812.25m and 797.08m.

NSR-F:659
NPV-N
HGNS-B:956
HMCA-B
HACCZ-B:460



HDRS-B:748 8.61
ECH-MEB:772
HRCC-B:1801
HRMS-B:748
GSR-J:3739
HRGD-H:754
Long Spacing:28074
Backscatter:48944
Short Spacing:50796
GPV-Q

AIT-H:105 4.88
AHIS:105
AHRM:105

Lengths are in m
Maximum Outer Diameter = 6.750 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	AIT-PEX-GPIT		
Conveyance Type	Wireline		
Log Sequence	First Run in Hole.		

Rig Up Length at Surface (m)	44.48		
Rig Up Length at Bottom (m)	44.46		
Rig Up Length Correction (m)	0.02		
Stretch Correction (m)	0.20		
Rig Type	Land		
Depth Remark Parameters	**AIT-PEX-GPIT**		
Depth Remark 1	All Schlumberger Depth Control procedures followed.		
Depth Remark 2	IDW used as primary depth device.		
Depth Remark 3	Z-chart used as secondary depth device.		
Depth Measuring Device	**AIT-PEX-GPIT**		
Type	IDW-JB		
Serial Number	6375		
Calibration Date	09-Nov-2012		
Calibrator Serial Number	30		
Calibration Cable Type	7-46 ZV XS		
Wheel Correction 1	-6.05		
Wheel Correction 2	-5.26		
Tension Device	**AIT-PEX-GPIT**		
Type	CMTD-B/A		
Serial Number	1679		
Calibration Date	18-Apr-2013		
Calibrator Serial Number	78171		
Calibration Points	10		
Calibration RMS	22		
Calibration Peak Error	40		
Logging Cable	**AIT-PEX-GPIT**		
Type	7-46ZV-XS		
Serial Number	73229		
Logging Cable Length (m)	1866.00		

Survey Record

Survey Calculation

Method :	Minimum Radius of Curvature	DLS Method :	Lubinski
North Reference :	True North	Total Correction Formula :	Magnetic Dec

Rig Location

Latitude :	26° 55' 4.78" S	Longitude :	150° 14' 23.394" E

Tie In Point

Measured Depth:	0.00 m	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 m	North Displacement:	0.00 m	East Displacement:	0.00 m

Survey Quality Index

9 : Manual 28 : Tie-In Point

Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey

Seq	MD (m)	Incl (deg)	Azim (deg)	Course (m)	TVD (m)	V Sec (m)	N/ -S (m)	E/ -W (m)	Closure (m)	at Azim (deg)	DLS deg/30m	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	16.92	0.11	179.57	16.92	16.92	-0.02	-0.02	0.00	0.02	179.57	0.20	GPIT-F	9	0	0
3	26.06	0.17	290.19	9.14	26.06	-0.02	-0.02	-0.01	0.02	209.77	0.76	GPIT-F	9	0	0
4	35.20	0.09	34.86	9.14	35.20	-0.01	-0.01	-0.02	0.02	242.09	0.68	GPIT-F	9	0	0
5	44.35	0.35	171.61	9.14	44.35	-0.03	-0.03	-0.01	0.03	200.37	1.39	GPIT-F	9	0	0

6	53.49	0.29	150.27	9.14	53.49	-0.08	-0.08	0.00	0.08	177.57	0.44	GPIT-F	9	0	0
7	62.64	0.44	245.77	9.14	62.64	-0.12	-0.12	-0.02	0.12	188.57	1.82	GPIT-F	9	0	0
8	71.78	0.30	281.68	9.14	71.78	-0.13	-0.13	-0.07	0.15	210.39	0.88	GPIT-F	9	0	0
9	80.92	0.02	290.23	9.14	80.92	-0.12	-0.12	-0.10	0.16	219.58	0.92	GPIT-F	9	0	0
10	90.07	0.09	266.69	9.14	90.07	-0.12	-0.12	-0.11	0.16	222.01	0.21	GPIT-F	9	0	0
11	99.21	0.09	254.66	9.14	99.21	-0.12	-0.12	-0.12	0.17	224.98	0.07	GPIT-F	9	0	0
12	108.36	0.07	216.92	9.14	108.36	-0.13	-0.13	-0.13	0.18	225.89	0.19	GPIT-F	9	0	0
13	117.50	0.14	236.07	9.14	117.50	-0.14	-0.14	-0.15	0.20	226.18	0.23	GPIT-F	9	0	0
14	126.64	0.27	165.92	9.14	126.64	-0.17	-0.17	-0.15	0.22	221.92	0.84	GPIT-F	9	0	0
15	135.79	0.29	166.77	9.14	135.79	-0.21	-0.21	-0.14	0.25	213.56	0.07	GPIT-F	9	0	0
16	144.93	0.31	171.44	9.14	144.93	-0.26	-0.26	-0.13	0.29	206.91	0.10	GPIT-F	9	0	0
17	154.08	0.31	158.25	9.14	154.08	-0.30	-0.30	-0.12	0.32	201.14	0.23	GPIT-F	9	0	0
18	163.22	0.27	147.81	9.14	163.22	-0.34	-0.34	-0.10	0.36	195.70	0.21	GPIT-F	9	0	0
19	172.36	0.25	148.49	9.14	172.36	-0.38	-0.38	-0.07	0.39	191.18	0.07	GPIT-F	9	0	0
20	181.51	0.27	147.15	9.14	181.51	-0.41	-0.41	-0.05	0.42	187.28	0.08	GPIT-F	9	0	0
21	190.65	0.28	140.79	9.14	190.65	-0.45	-0.45	-0.03	0.45	183.44	0.11	GPIT-F	9	0	0
22	199.80	0.27	162.25	9.14	199.79	-0.49	-0.49	-0.01	0.49	180.72	0.34	GPIT-F	9	0	0
23	208.94	0.26	157.52	9.14	208.94	-0.53	-0.53	0.01	0.53	179.07	0.08	GPIT-F	9	0	0
24	218.08	0.30	165.26	9.14	218.08	-0.57	-0.57	0.02	0.57	177.72	0.17	GPIT-F	9	0	0
25	227.23	0.32	182.31	9.14	227.23	-0.62	-0.62	0.03	0.62	177.44	0.31	GPIT-F	9	0	0
26	236.37	0.31	177.48	9.14	236.37	-0.67	-0.67	0.03	0.67	177.63	0.09	GPIT-F	9	0	0
27	245.52	0.34	192.75	9.14	245.51	-0.72	-0.72	0.02	0.72	178.19	0.30	GPIT-F	9	0	0
28	254.66	0.31	188.41	9.14	254.66	-0.77	-0.77	0.01	0.77	179.02	0.14	GPIT-F	9	0	0
29	263.80	0.24	177.93	9.14	263.80	-0.82	-0.82	0.01	0.82	179.28	0.28	GPIT-F	9	0	0
30	272.95	0.25	172.12	9.14	272.95	-0.85	-0.85	0.01	0.85	179.08	0.10	GPIT-F	9	0	0
31	282.09	0.27	174.88	9.14	282.09	-0.90	-0.90	0.02	0.90	178.82	0.06	GPIT-F	9	0	0
32	291.24	0.29	179.74	9.14	291.23	-0.94	-0.94	0.02	0.94	178.76	0.10	GPIT-F	9	0	0
33	300.38	0.39	195.10	9.14	300.38	-0.99	-0.99	0.01	0.99	179.28	0.44	GPIT-F	9	0	0
34	309.52	0.19	110.02	9.14	309.52	-1.03	-1.03	0.02	1.03	178.95	1.37	GPIT-F	9	0	0
35	318.67	0.19	98.00	9.14	318.67	-1.03	-1.03	0.05	1.04	177.32	0.13	GPIT-F	9	0	0
36	327.81	0.39	135.96	9.14	327.81	-1.06	-1.06	0.09	1.06	175.41	0.86	GPIT-F	9	0	0
37	336.96	0.47	136.69	9.14	336.95	-1.11	-1.11	0.13	1.12	173.20	0.28	GPIT-F	9	0	0
38	346.10	0.51	136.80	9.14	346.10	-1.17	-1.17	0.19	1.18	170.95	0.13	GPIT-F	9	0	0
39	355.24	0.53	137.93	9.14	355.24	-1.23	-1.23	0.24	1.25	168.84	0.08	GPIT-F	9	0	0
40	364.39	0.52	137.27	9.14	364.38	-1.29	-1.29	0.30	1.32	166.94	0.04	GPIT-F	9	0	0
41	373.53	0.49	134.47	9.14	373.53	-1.35	-1.35	0.36	1.39	165.23	0.14	GPIT-F	9	0	0
42	382.68	0.47	133.54	9.14	382.67	-1.40	-1.40	0.41	1.46	163.67	0.08	GPIT-F	9	0	0
43	391.82	0.50	127.58	9.14	391.81	-1.45	-1.45	0.47	1.52	162.08	0.20	GPIT-F	9	0	0
44	400.96	0.51	124.11	9.14	400.96	-1.50	-1.50	0.53	1.59	160.36	0.10	GPIT-F	9	0	0
45	410.11	0.49	122.66	9.14	410.10	-1.54	-1.54	0.60	1.65	158.70	0.08	GPIT-F	9	0	0
46	419.25	0.49	117.16	9.14	419.25	-1.58	-1.58	0.67	1.72	157.07	0.15	GPIT-F	9	0	0
47	428.40	0.53	119.38	9.14	428.39	-1.62	-1.62	0.74	1.78	155.43	0.16	GPIT-F	9	0	0
48	437.54	0.53	120.55	9.14	437.53	-1.66	-1.66	0.81	1.85	153.91	0.04	GPIT-F	9	0	0
49	446.68	0.64	123.55	9.14	446.68	-1.71	-1.71	0.89	1.93	152.46	0.39	GPIT-F	9	0	0
50	455.83	0.76	115.64	9.14	455.82	-1.77	-1.77	0.99	2.02	150.73	0.51	GPIT-F	9	0	0
51	464.97	0.92	114.13	9.14	464.96	-1.82	-1.82	1.11	2.13	148.61	0.51	GPIT-F	9	0	0
52	474.12	0.97	112.65	9.14	474.11	-1.88	-1.88	1.25	2.26	146.40	0.20	GPIT-F	9	0	0
53	483.26	0.99	114.38	9.14	483.25	-1.94	-1.94	1.39	2.39	144.36	0.11	GPIT-F	9	0	0
54	492.40	0.91	112.42	9.14	492.39	-2.00	-2.00	1.53	2.52	142.59	0.28	GPIT-F	9	0	0
55	501.55	0.98	108.56	9.14	501.53	-2.06	-2.06	1.67	2.65	140.86	0.30	GPIT-F	9	0	0
56	510.69	0.93	107.38	9.14	510.68	-2.10	-2.10	1.82	2.78	139.15	0.16	GPIT-F	9	0	0
57	519.84	1.08	108.24	9.14	519.82	-2.15	-2.15	1.97	2.92	137.52	0.47	GPIT-F	9	0	0
58	528.98	1.05	109.53	9.14	528.96	-2.21	-2.21	2.13	3.07	136.00	0.11	GPIT-F	9	0	0
59	538.12	1.12	112.06	9.14	538.10	-2.27	-2.27	2.29	3.23	134.69	0.27	GPIT-F	9	0	0

60	547.27	1.13	111.30	9.14	547.25	-2.34	-2.34	2.46	3.39	133.51	0.05	GPIT-F	9	0	0
61	556.41	1.19	108.94	9.14	556.39	-2.40	-2.40	2.63	3.56	132.33	0.26	GPIT-F	9	0	0
62	565.56	1.23	109.72	9.14	565.53	-2.46	-2.46	2.82	3.74	131.17	0.14	GPIT-F	9	0	0
63	574.70	1.31	107.67	9.14	574.67	-2.53	-2.53	3.01	3.93	130.04	0.29	GPIT-F	9	0	0
64	583.84	1.36	106.05	9.14	583.81	-2.59	-2.59	3.21	4.13	128.88	0.21	GPIT-F	9	0	0
65	592.99	1.38	102.83	9.14	592.95	-2.64	-2.64	3.42	4.33	127.68	0.26	GPIT-F	9	0	0
66	602.13	1.41	103.53	9.14	602.10	-2.69	-2.69	3.64	4.53	126.51	0.10	GPIT-F	9	0	0
67	611.28	1.45	103.81	9.14	611.24	-2.75	-2.75	3.86	4.74	125.44	0.14	GPIT-F	9	0	0
68	620.42	1.47	103.50	9.14	620.38	-2.80	-2.80	4.09	4.96	124.44	0.08	GPIT-F	9	0	0
69	629.56	1.37	103.61	9.14	629.52	-2.86	-2.86	4.31	5.17	123.55	0.34	GPIT-F	9	0	0
70	638.71	1.51	101.92	9.14	638.66	-2.91	-2.91	4.53	5.39	122.68	0.49	GPIT-F	9	0	0
71	647.85	1.57	102.26	9.14	647.80	-2.96	-2.96	4.77	5.62	121.80	0.17	GPIT-F	9	0	0
72	657.00	1.71	102.23	9.14	656.94	-3.01	-3.01	5.03	5.86	120.94	0.49	GPIT-F	9	0	0
73	666.14	1.52	98.95	9.14	666.08	-3.06	-3.06	5.28	6.11	120.10	0.70	GPIT-F	9	0	0
74	675.28	1.66	98.66	9.14	675.22	-3.10	-3.10	5.53	6.34	119.27	0.47	GPIT-F	9	0	0
75	684.43	1.66	97.92	9.14	684.36	-3.14	-3.14	5.80	6.59	118.44	0.07	GPIT-F	9	0	0
76	693.57	1.76	99.41	9.14	693.50	-3.18	-3.18	6.07	6.85	117.67	0.36	GPIT-F	9	0	0
77	702.72	1.75	101.53	9.14	702.64	-3.23	-3.23	6.34	7.12	117.00	0.22	GPIT-F	9	0	0
78	711.86	1.83	98.03	9.14	711.78	-3.28	-3.28	6.62	7.39	116.35	0.45	GPIT-F	9	0	0
79	721.00	1.77	99.16	9.14	720.92	-3.32	-3.32	6.91	7.66	115.69	0.24	GPIT-F	9	0	0
80	730.15	1.84	100.66	9.14	730.06	-3.37	-3.37	7.19	7.94	115.13	0.30	GPIT-F	9	0	0
81	739.29	1.82	102.14	9.14	739.20	-3.43	-3.43	7.48	8.23	114.64	0.17	GPIT-F	9	0	0
82	748.44	1.84	102.21	9.14	748.34	-3.49	-3.49	7.76	8.51	114.22	0.05	GPIT-F	9	0	0
83	757.58	1.81	103.64	9.14	757.48	-3.56	-3.56	8.05	8.80	113.85	0.18	GPIT-F	9	0	0
84	766.72	1.88	103.02	9.14	766.62	-3.62	-3.62	8.33	9.09	113.51	0.23	GPIT-F	9	0	0
85	775.87	1.85	104.04	9.14	775.76	-3.69	-3.69	8.62	9.38	113.19	0.14	GPIT-F	9	0	0
86	785.01	1.90	107.23	9.14	784.90	-3.77	-3.77	8.91	9.68	112.96	0.37	GPIT-F	9	0	0
87	794.16	1.93	103.16	9.14	794.04	-3.85	-3.85	9.20	9.98	112.72	0.46	GPIT-F	9	0	0
88	803.30	1.93	102.64	9.14	803.17	-3.92	-3.92	9.50	10.28	112.43	0.06	GPIT-F	9	0	0
89	812.44	2.07	96.65	9.14	812.31	-3.98	-3.98	9.82	10.59	112.05	0.82	GPIT-F	9	0	0
90	821.59	2.00	97.53	9.14	821.45	-4.02	-4.02	10.14	10.91	111.61	0.26	GPIT-F	9	0	0
91	830.73	1.95	98.64	9.14	830.59	-4.06	-4.06	10.45	11.21	111.23	0.21	GPIT-F	9	0	0
92	839.88	1.91	98.71	9.14	839.73	-4.11	-4.11	10.76	11.52	110.90	0.11	GPIT-F	9	0	0
93	849.02	1.96	97.15	9.14	848.87	-4.15	-4.15	11.06	11.82	110.56	0.24	GPIT-F	9	0	0
94	858.16	1.96	98.82	9.14	858.01	-4.19	-4.19	11.37	12.12	110.24	0.19	GPIT-F	9	0	0
95	867.31	1.93	99.40	9.14	867.14	-4.24	-4.24	11.68	12.43	109.96	0.12	GPIT-F	9	0	0
96	876.45	1.87	100.74	9.14	876.28	-4.30	-4.30	11.98	12.73	109.73	0.25	GPIT-F	9	0	0

AIT-PEX-GPIT

Main Pass StdRes 1:500

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
IHV	Integrated Hole Volume	GCSE_UP_PASS	29.74	m3
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	10.7	m3

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20121221-3.1.9755.1574

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	3.1.9755.0
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections	3.1.9755.0

Tool Elements	Description	Software Version	Firmware Version
AHIS	Array Induction Sonde - H	3.1.9755.1574	
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC	3.1.9755.0	2.0
HRCC-B	HILT High-Resolution Control Cartridge, 125 degC	3.1.9755.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
AIT-PEX-GPIT	Main[3]:Up	Up	20.71 m	888.74 m	20-May-2013 6:16:31 PM	20-May-2013 7:57:09 PM	0.00 m	true

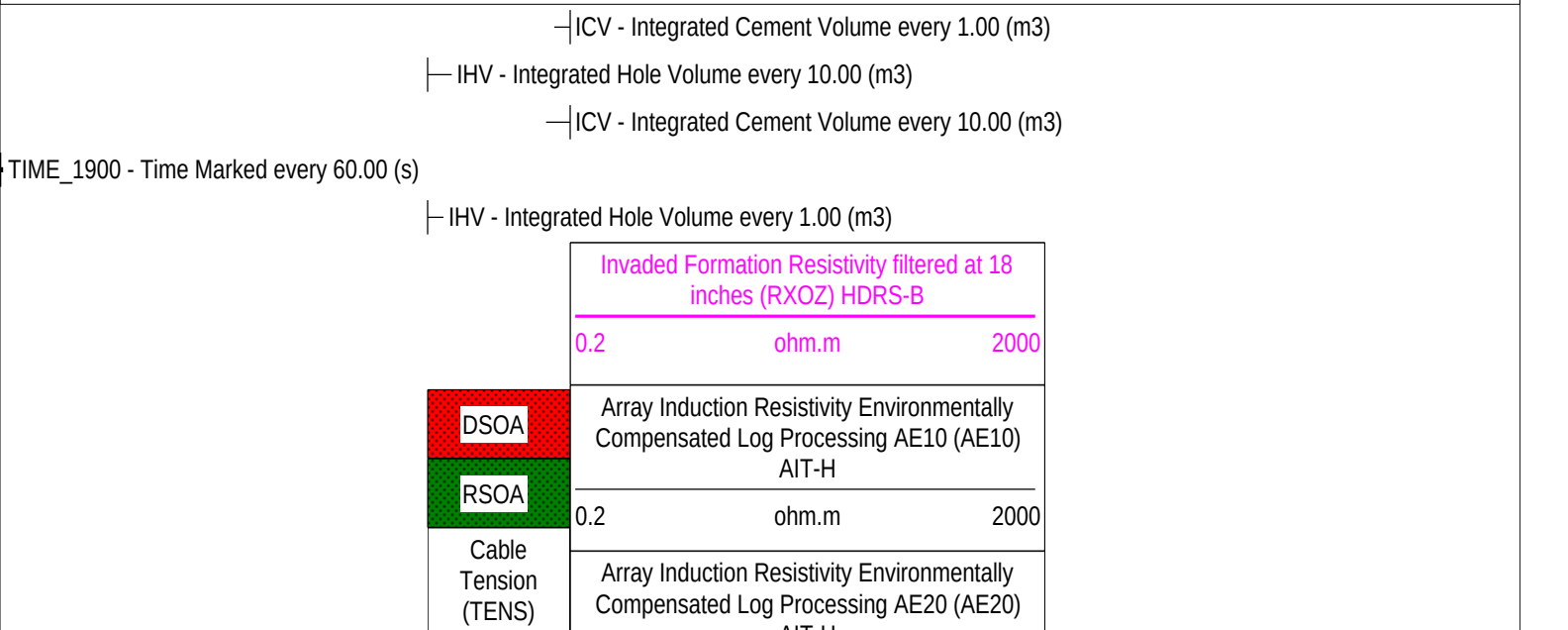
All depths are referenced to toolstring zero

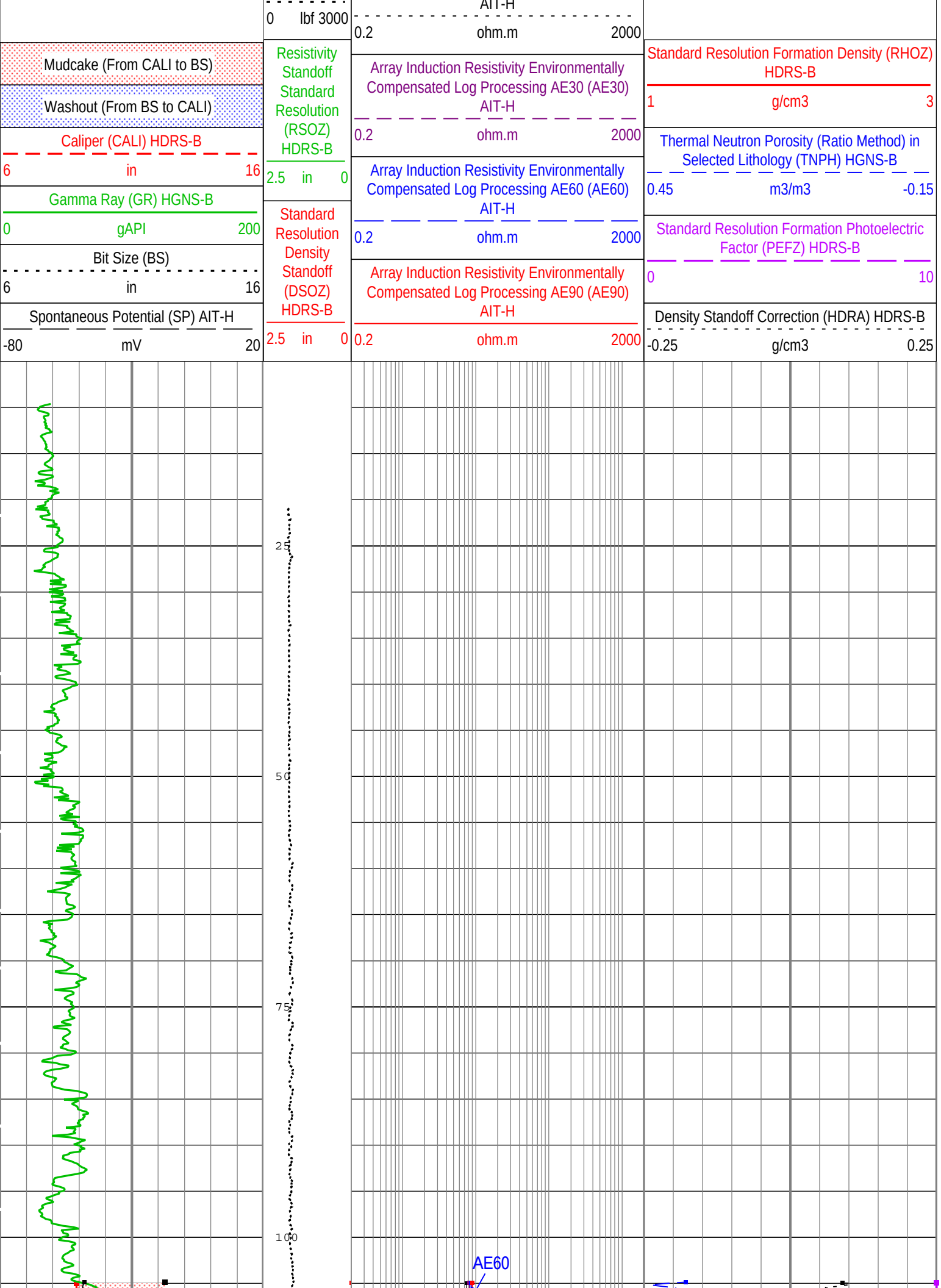
Log

AIT-PEX-GPIT: Main[3]:Up

Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 500_StdRes) Index Scale: 1:500 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:22

Channel	Source	Sampling
AE10	AIT-H:AHIS:AHIS	3in
AE20	AIT-H:AHIS:AHIS	3in
AE30	AIT-H:AHIS:AHIS	3in
AE60	AIT-H:AHIS:AHIS	3in
AE90	AIT-H:AHIS:AHIS	3in
BS	Borehole	6in
CALI	HDRS-B:HRCC-B:HRCC-B	1in
DSOZ	HDRS-B:HRMS-B:HRGD-H	2in
GR	HGNS-B:HGNS-B:HGNS-B	6in
HDRA	HDRS-B:HRMS-B:HRGD-H	2in
ICV	Borehole	6in
IHV	Borehole	6in
PEFZ	HDRS-B:HRMS-B:HRGD-H	2in
RHOZ	HDRS-B:HRMS-B:HRGD-H	2in
RSOZ	HDRS-B:HRMS-B:HRGD-H	2in
RXOZ	HDRS-B:HRMS-B:HRGD-H	2in
SP	AIT-H:AHIS:AHIS	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in
TNPH	HGNS-B:HGNS-B:HGNS-B	6in




0 lbf 3000
AIT-H
0.2 ohm.m 2000
Mudcake (From CALI to BS)
Washout (From BS to CALI)
Caliper (CALI) HDRS-B
6 in 16
Gamma Ray (GR) HGNS-B
0 gAPI 200
Bit Size (BS)
6 in 16
Spontaneous Potential (SP) AIT-H
-80 mV 20
Resistivity Standoff Standard Resolution (RSOZ) HDRS-B
2.5 in 0
Standard Resolution Density Standoff (DSOZ) HDRS-B
2.5 in 0
Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H
0.2 ohm.m 2000
Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H
0.2 ohm.m 2000
Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H
0.2 ohm.m 2000
Standard Resolution Formation Density (RHOZ) HDRS-B
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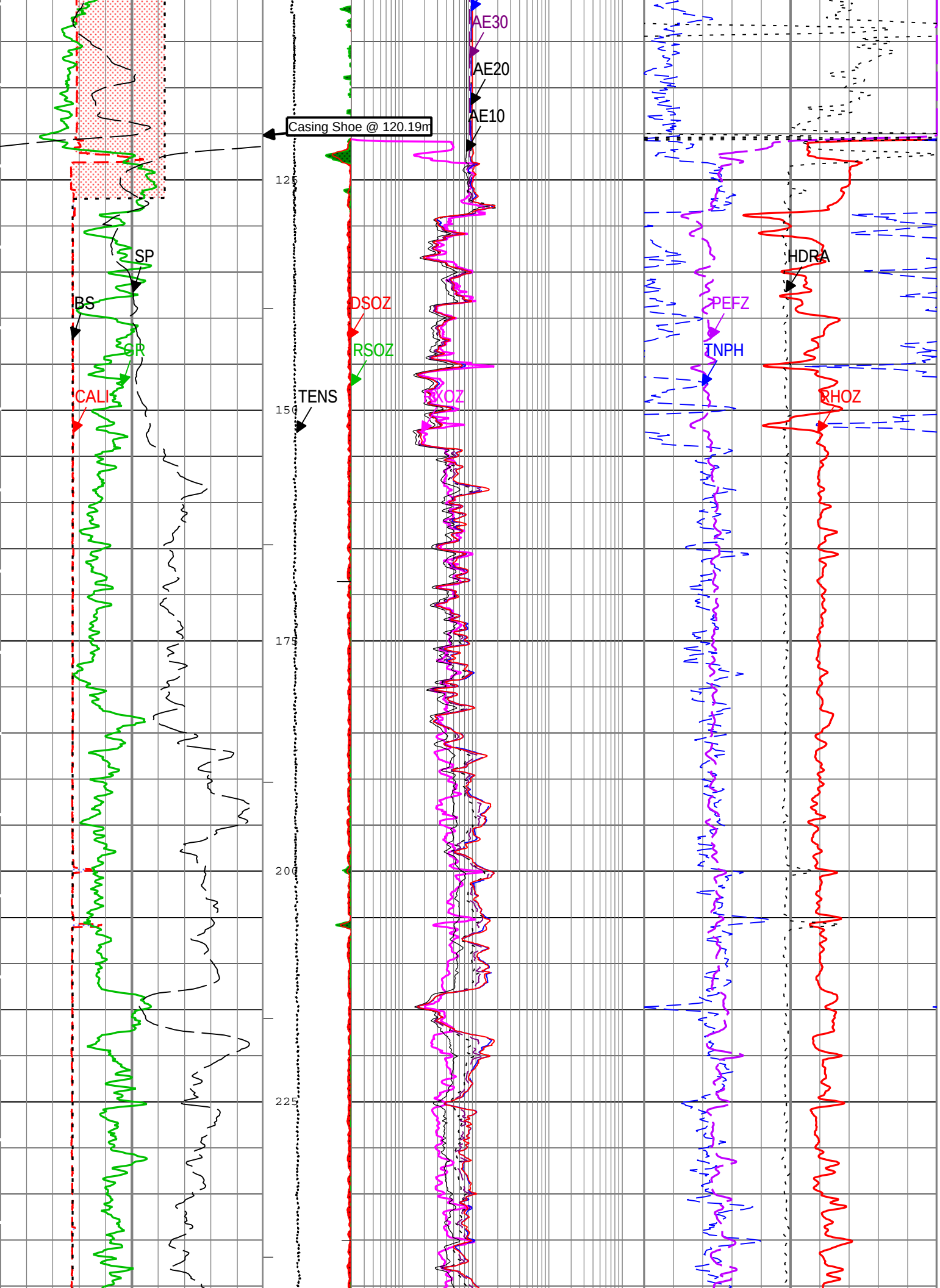
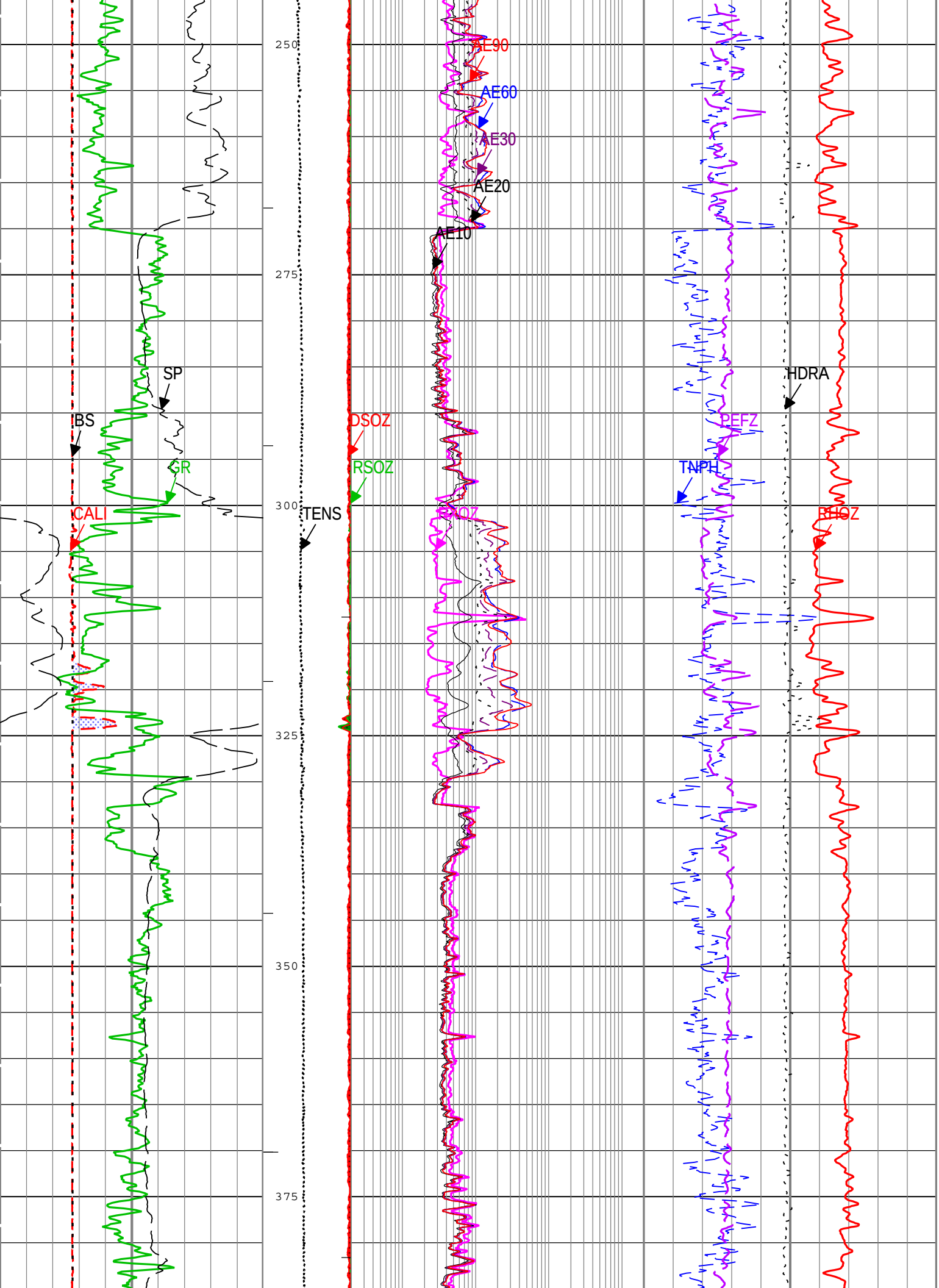
Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B
0.45 m3/m3 -0.15
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B
0 10
Density Standoff Correction (HDRA) HDRS-B
-0.25 g/cm3 0.25
25
50
75
100
AE60


AE30
AE20
AE10
Casing Shoe @ 120.19m
SP
BS
GR
CALI
TENS
DSOZ
RSOZ
RXOZ
HDRA
PEFZ
TNPH
RHOZ
125
150
175
200
225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AE90
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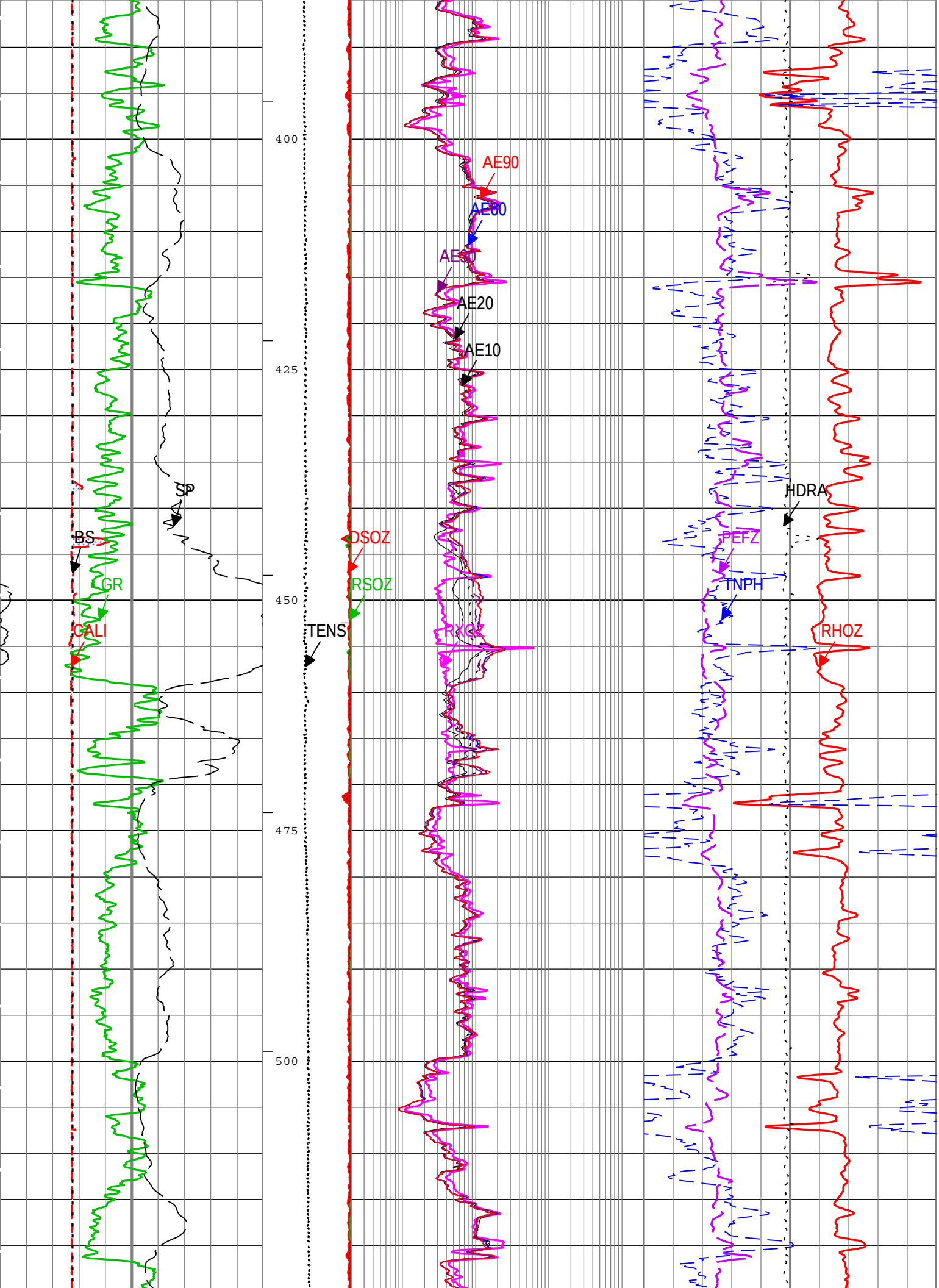
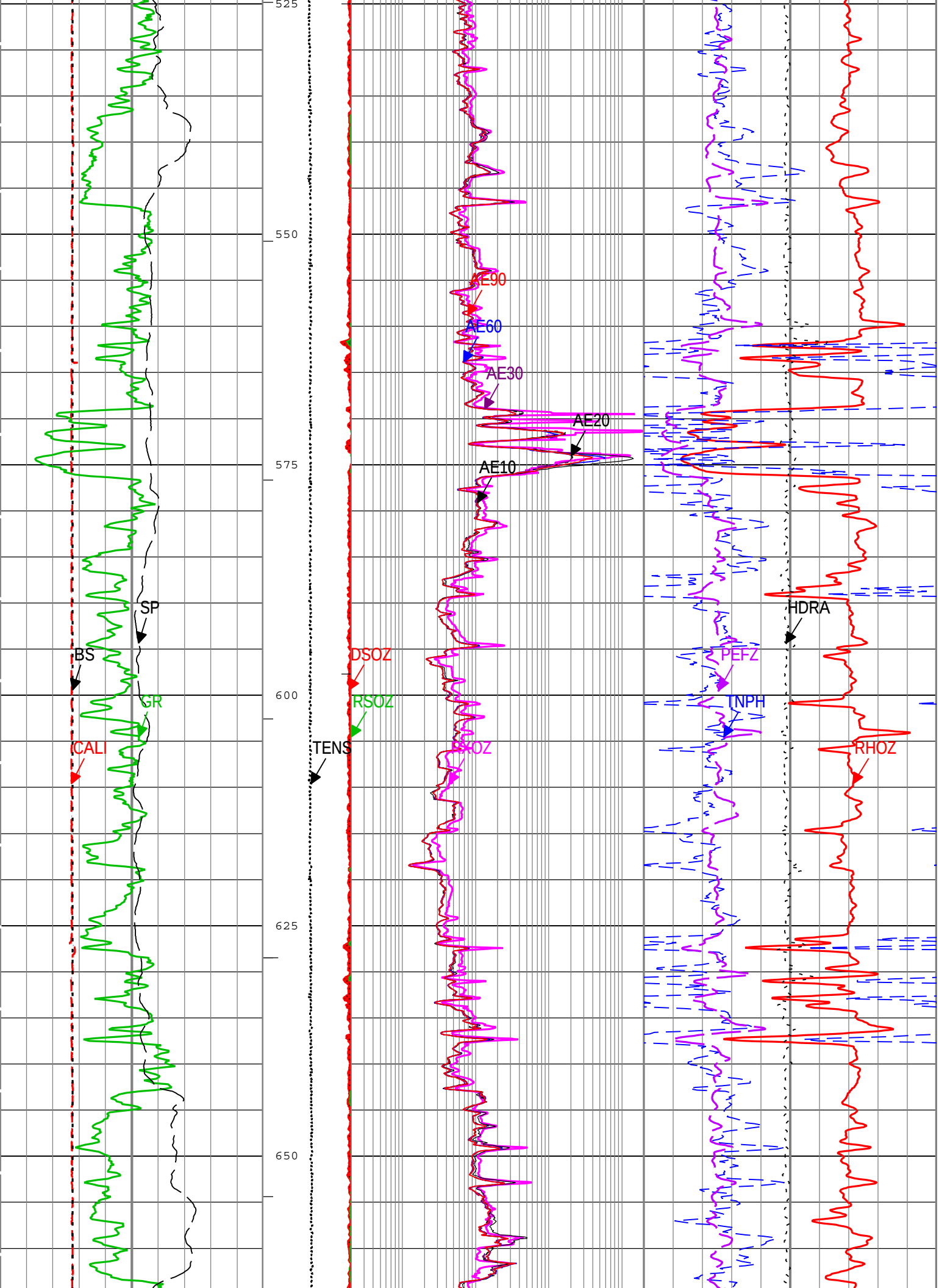
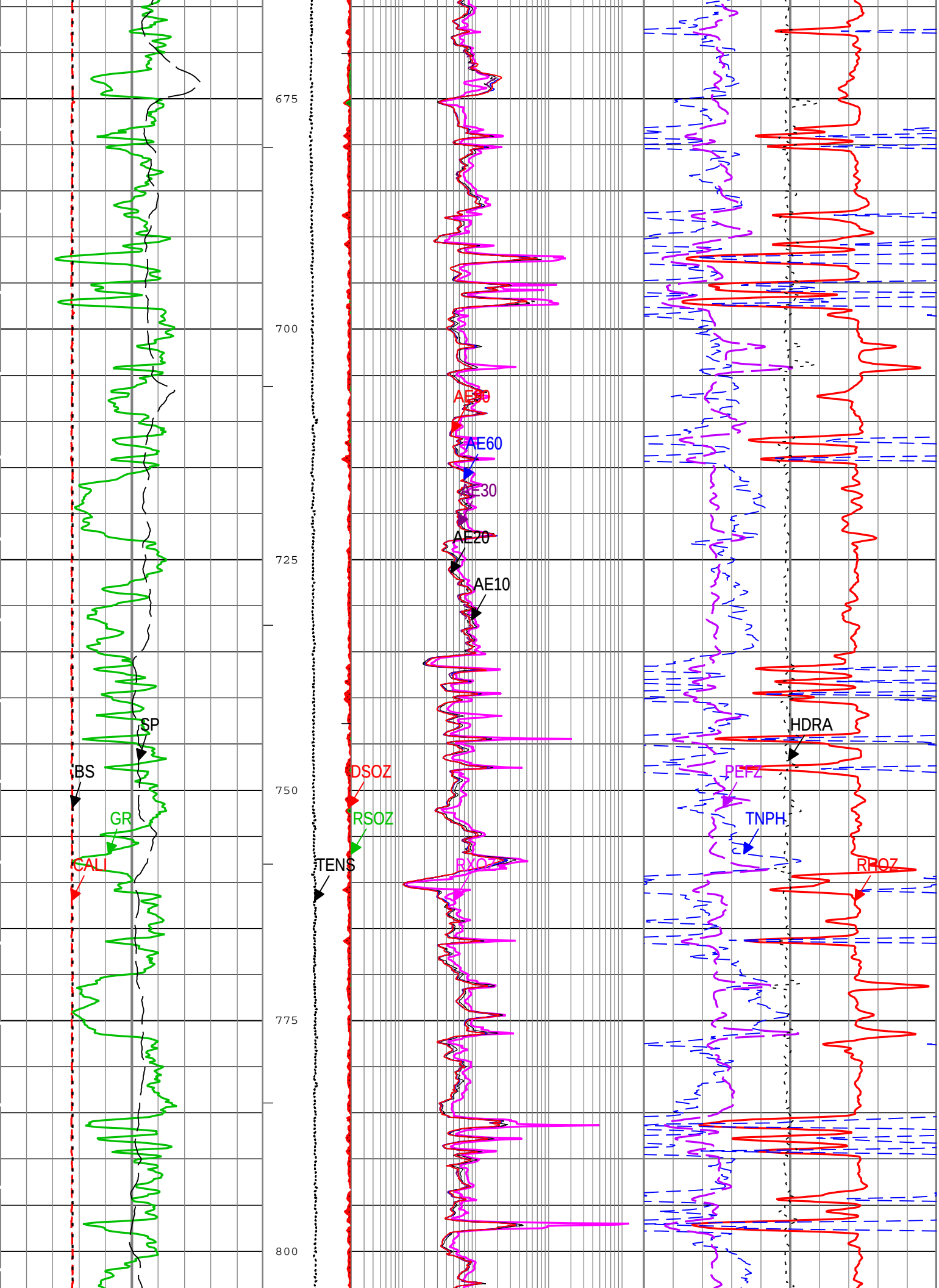
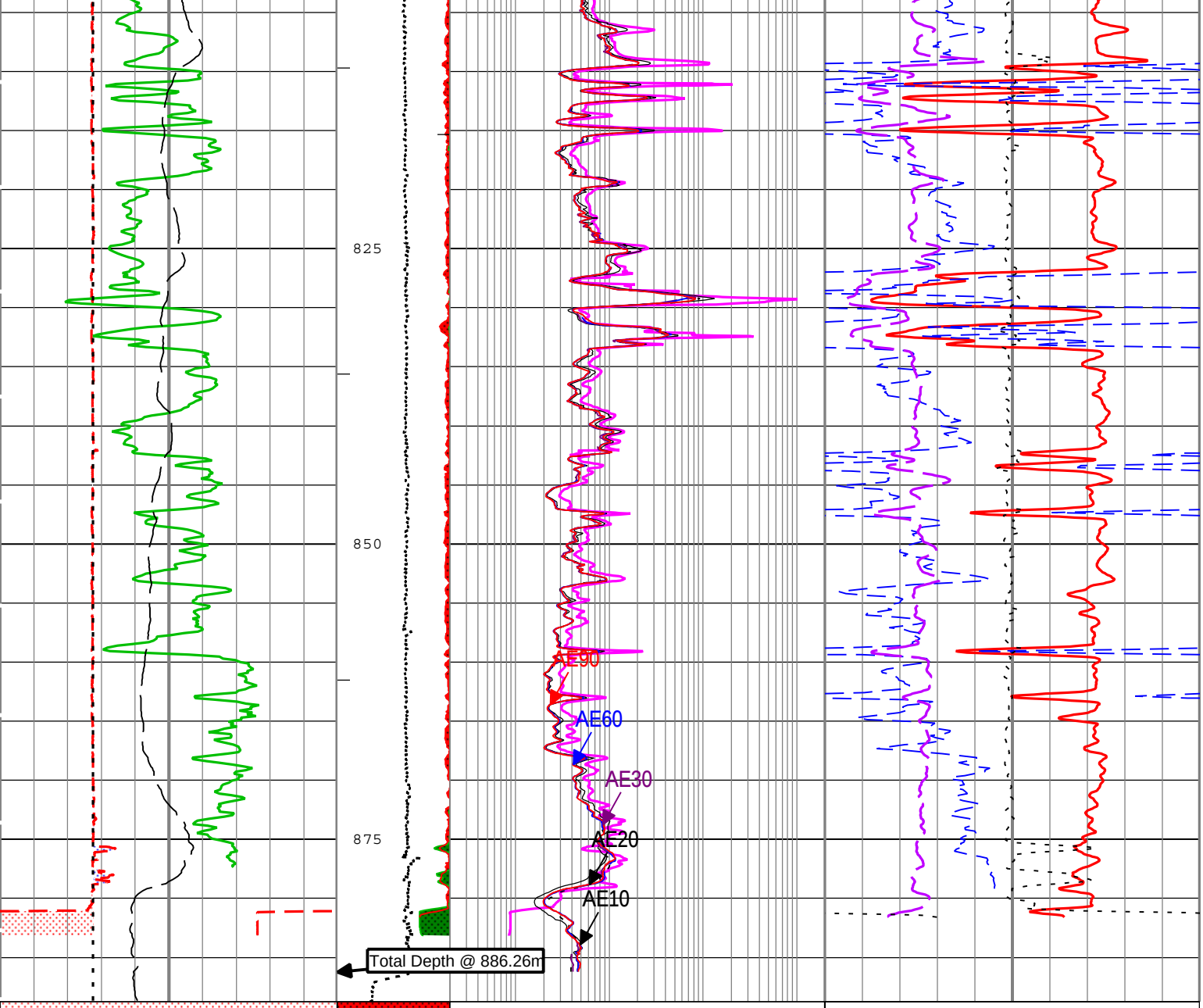
IBS
CR
CALI
TENS
DSOZ
RSOZ
HDRA
PEFZ
TNPH
RHOZ


400
425
450
475
500
AE90
AE60
AE30
AE20
AE10
SP
BS
GR
CALI
DSOZ
RSOZ
TENS
HDRA
PEFZ
TNPH
RHOZ


525
550
575
600
625
650
AE90
AE60
AE30
AE20
AE10
SP
BS
GR
CALI
TENS
DSOZ
RSOZ
HDRA
PEFZ
TNPH
RHOZ


675
700
725
750
775
800
AE90
AE60
AE30
AE20
AE10
SP
BS
GR
CALI
TENS
RSOZ
RXO
HDRA
PEFZ
TNPH
RHOZ



Mudcake (From CALI to BS)

Washout (From BS to CALI)

Caliper (CALI) HDRS-B

6 in 16

Gamma Ray (GR) HGNS-B

0 gAPI 200

Bit Size (BS)

6 in 16

Spontaneous Potential (SP) AIT-H

-80 mV 20

DSOA

RSOA

Cable Tension (TENS)

0 lbf 3000

Resistivity Standoff Standard Resolution (RSOZ) HDRS-B

2.5 in 0

Standard Resolution Density Standoff (DSOZ) HDRS-B

2.5 in 0

Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-B

0.2 ohm.m 2000

Array Induction Resistivity Environmentally Compensated Log Processing AE10 (AE10) AIT-H

0.2 ohm.m 2000

Array Induction Resistivity Environmentally Compensated Log Processing AE20 (AE20) AIT-H

0.2 ohm.m 2000

Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H

0.2 ohm.m 2000

Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H

0.2 ohm.m 2000

Standard Resolution Formation Density (RHOZ) HDRS-B

1 g/cm3 3

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B

0.45 m3/m3 -0.15

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B

0 10

Density Standoff Correction (HDRA) HDRS-B

-0.25 g/cm3 0.25

Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H

0.2 ohm.m 2000

IHV - Integrated Hole Volume every 1.00 (m3)

TIME_1900 - Time Marked every 60.00 (s)

ICV - Integrated Cement Volume every 10.00 (m3)

IHV - Integrated Hole Volume every 10.00 (m3)

ICV - Integrated Cement Volume every 1.00 (m3)

Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 500_StdRes) Index Scale: 1:500 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:22

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.625	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	44.42	degC
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	23063.2	ppm
BSCO	Borehole Salinity Correction Option	HGNS-B	Yes	
CALI_SHIFT	CALI Supplementary Offset	HDRS-B	0.16	in
CBLO	Casing Bottom (Logger)	WLSESSION	120.19	m
CDEN	Cement Density	HGNS-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	KCL Polymer	
DHC	Density Hole Correction	HDRS-B	Bit Size	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	3.8	m
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	313	m
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in
FSAL	Formation Salinity	Borehole	0	ppm
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	
GGRD	Geothermal Gradient	Borehole	18.23	degC/km
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HSCO	Hole Size Correction Option	HGNS-B	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MFST	Mud Filtrate Sample Temperature	Borehole	23.8	degC
MST	Mud Sample Temperature	Borehole	23.8	degC
MWCO	Mud Weight Correction Option	HGNS-B	Yes	
NPRM	HRDD Nuclear Processing Mode	HDRS-B	High Resolution	
PDAT	Permanent Datum	WLSESSION	GL	
PTCO	Pressure Temperature Correction Option	HGNS-B	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.2	ohm.m

RMS	Resistivity of Mud Sample	Borehole	0.27	ohm.m
SHT	Surface Hole Temperature	Borehole	23.8	degC
SOCN	Standoff Distance	HGNS-B	0	in
SOCO	Standoff Correction Option	HGNS-B	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/m
TD	Total Measured Depth	Borehole	886.26	m

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)
BS	12.25	5.03	127
BS	8.75	127	888.75

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BRD_TYPE	HRGD Board Type	HDRS-B	WITHOUT_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
STSO_HRDD	Temperature Source for the Density Algorithm	HDRS-B	Decaytime algorithm	

AIT-PEX-GPIT

Repeat Analysis 1:500

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
AIT-PEX-GPIT	Repeat[2]:Up	Up	781.27 m	888.77 m	20-May-2013 5:58:30 PM	20-May-2013 6:12:24 PM	0.20 m	true
AIT-PEX-GPIT	Main[3]:Up	Up	20.71 m	888.74 m	20-May-2013 6:16:31 PM	20-May-2013 7:57:09 PM	0.00 m	true

All depths are referenced to toolstring zero

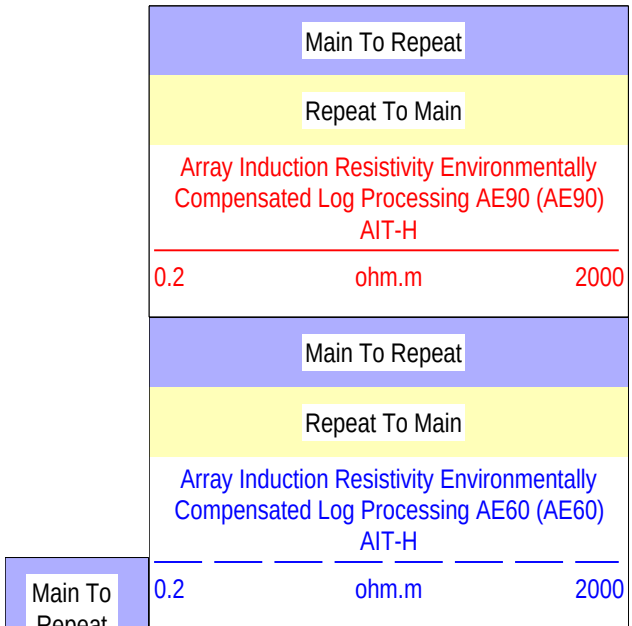
Log

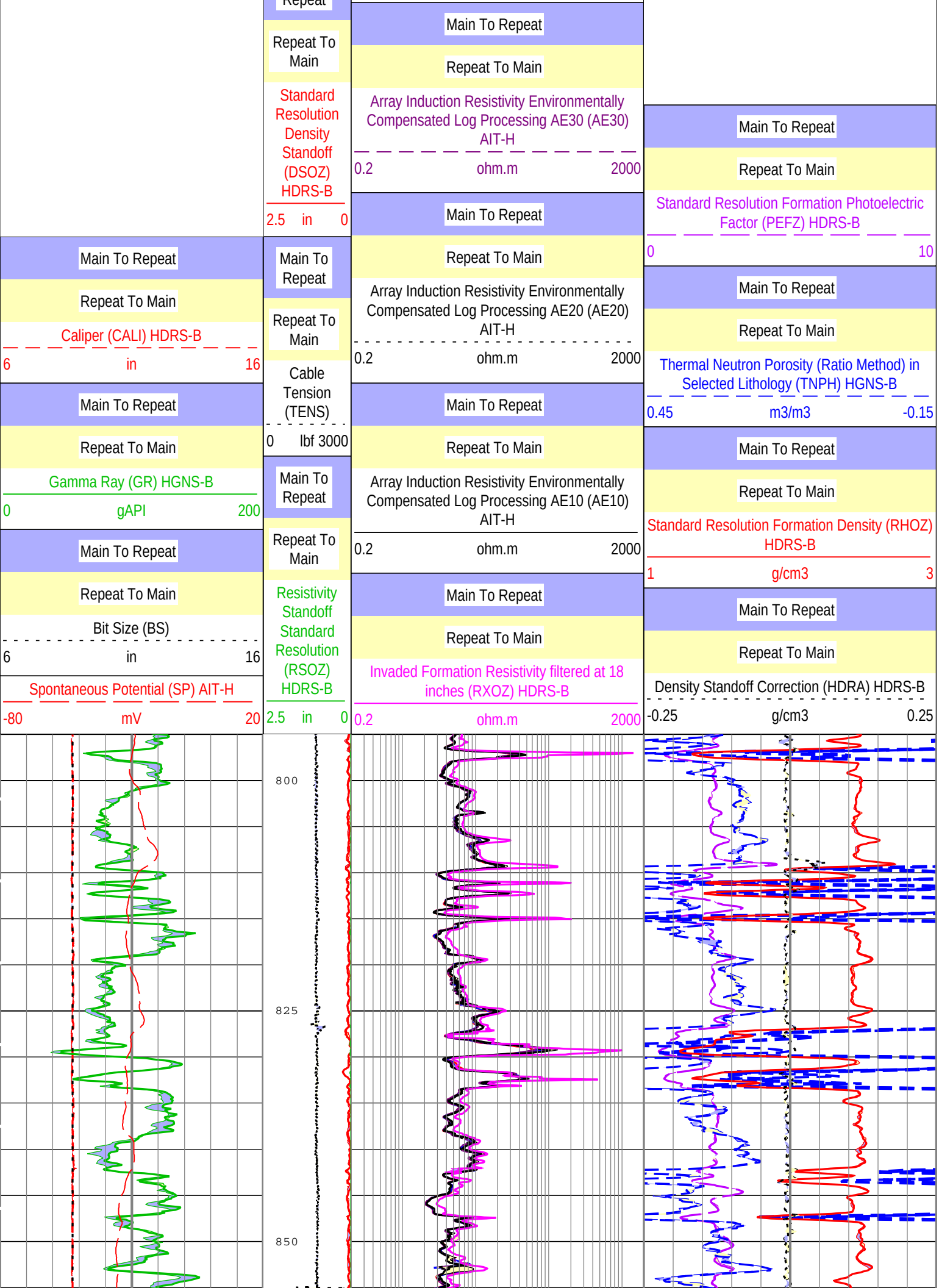
AIT-PEX-GPIT: Main[3]:Up

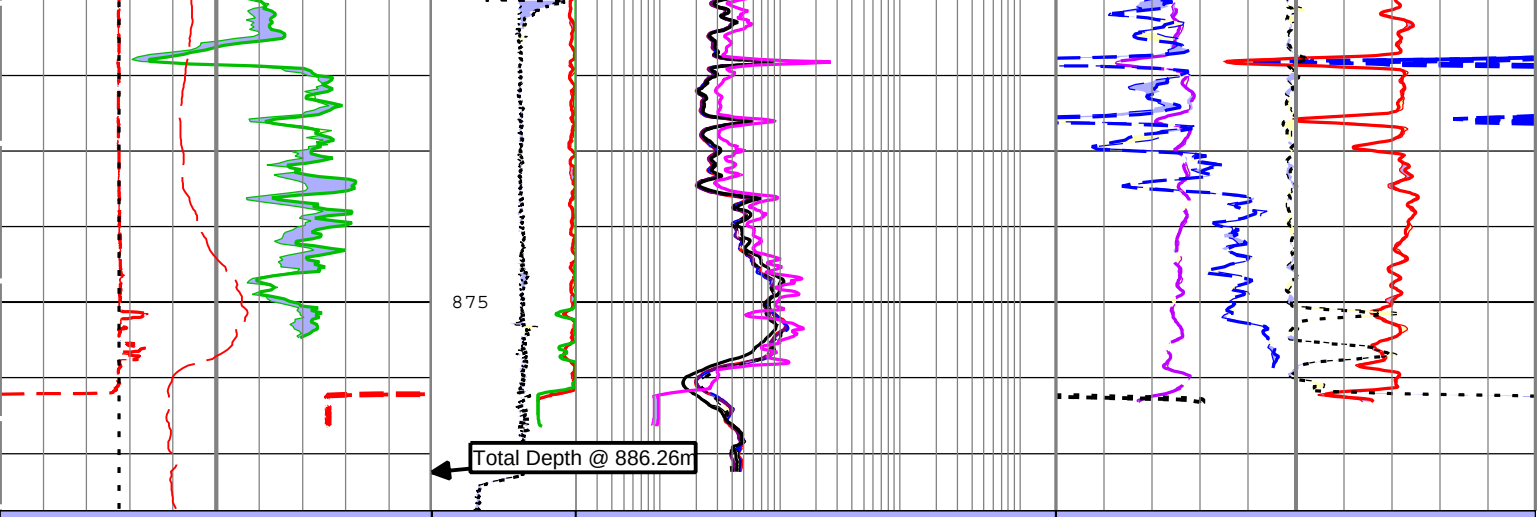
Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 500_StdRes RA) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 20-May-2013 21:41:29

Channel	Source	Sampling
SP	AIT-H:AHIS:AHIS	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)




Main To Repeat
Repeat To Main
Caliper (CALI) HDRS-B
6 in 16
Main To Repeat
Repeat To Main
Gamma Ray (GR) HGNS-B
0 gAPI 200
Main To Repeat
Repeat To Main
Bit Size (BS)
6 in 16
Spontaneous Potential (SP) AIT-H
-80 mV 20
Repeat
Repeat To Main
Standard Resolution Density Standoff (DSOZ) HDRS-B
2.5 in 0
Main To Repeat
Repeat To Main
Cable Tension (TENS)
0 lbf 3000
Main To Repeat
Repeat To Main
Resistivity Standoff Standard Resolution (RSOZ) HDRS-B
2.5 in 0
800
825
850
Main To Repeat
Repeat To Main
Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H
0.2 ohm.m 2000
Main To Repeat
Repeat To Main
Array Induction Resistivity Environmentally Compensated Log Processing AE20 (AE20) AIT-H
0.2 ohm.m 2000
Main To Repeat
Repeat To Main
Array Induction Resistivity Environmentally Compensated Log Processing AE10 (AE10) AIT-H
0.2 ohm.m 2000
Main To Repeat
Repeat To Main
Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-B
0.2 ohm.m 2000
Main To Repeat
Repeat To Main
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B
0 10
Main To Repeat
Repeat To Main
Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B
0.45 m3/m3 -0.15
Main To Repeat
Repeat To Main
Standard Resolution Formation Density (RHOZ) HDRS-B
1 g/cm3 3
Main To Repeat
Repeat To Main
Density Standoff Correction (HDRA) HDRS-B
-0.25 g/cm3 0.25



Main To Repeat

Repeat To Main

Caliper (CALI) HDRS-B

6 in 16

Main To Repeat

Repeat To Main

Gamma Ray (GR) HGNS-B

0 gAPI 200

Main To Repeat

Repeat To Main

Bit Size (BS)

6 in 16

Spontaneous Potential (SP) AIT-H

-80 mV 20

Main To Repeat

Repeat To Main

Standard Resolution Density Standoff (DSOZ) HDRS-B

2.5 in 0

Main To Repeat

Repeat To Main

Cable Tension (TENS)

0 lbf 3000

Main To Repeat

Repeat To Main

Resistivity Standoff Standard Resolution (RSOZ) HDRS-B

2.5 in 0

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE20 (AE20) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE10 (AE10) AIT-H

0.2 ohm.m 2000

Main To Repeat

Main To Repeat

Repeat To Main

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B

0 10

Main To Repeat

Repeat To Main

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B

0.45 m3/m3 -0.15

Main To Repeat

Repeat To Main

Standard Resolution Formation Density (RHOZ) HDRS-B

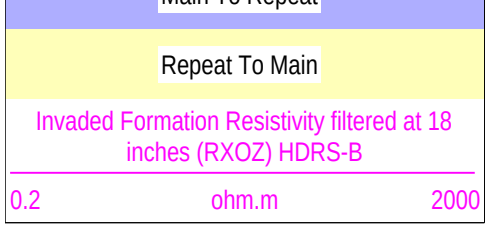
1 g/cm3 3

Main To Repeat

Repeat To Main

Density Standoff Correction (HDRA) HDRS-B

-0.25 g/cm3 0.25



TIME_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 500_StdRes RA) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 20-May-2013 21:41:29

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

Array Induction Sonde - H	AHIS	105

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM	105

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.018	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.307	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.018	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.987	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.021	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	0.150	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.014	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.243	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.997	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.073	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.991	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.371	3.000
Test Loop Gain - 6		Master	1.000	0.950	1.001	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	-0.048	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.002	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.475	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-120.173	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-115.006	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	145.987	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-288.389	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.834	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-3.452	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	68.147	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-4.696	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.880	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	1.669	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	12.346	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-16.978	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.425	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	5.402	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.039	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	0.870	30.000

AIT Mud Calibration - Mud Calibration Gain

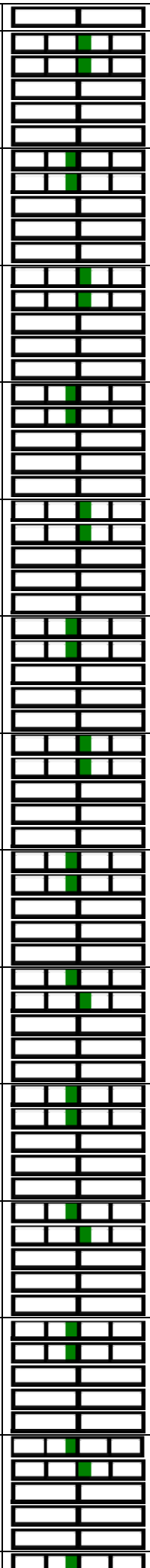
Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	1.096	1.200
Fine Gain		Master	1.000	0.800	1.095	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 16:38:03 11-Mar-2013 Before (Measured): 17:09:04 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.622	0.847
		Before	-----	0.363	0.629	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.007	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	65.360	131.000
		Before	-----	11.000	66.192	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.832	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.275	1.778
		Before	-----	0.762	1.289	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.014	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	64.212	130.000
		Before	-----	10.000	65.054	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.842	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.631	0.872
		Before	-----	0.374	0.638	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.007	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	60.406	126.000
		Before	-----	6.000	61.276	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.870	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.714	0.986
		Before	-----	0.422	0.723	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.009	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	59.608	125.000
		Before	-----	5.000	60.478	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.870	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.332	1.872
		Before	-----	0.802	1.348	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.016	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	53.180	119.000
		Before	-----	-1.000	54.090	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.910	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.945	2.737
		Before	-----	1.173	1.967	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.022	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	51.172	117.000
		Before	-----	-3.000	52.130	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.958	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.942	2.737
		Before	-----	1.173	1.964	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.022	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	51.191	117.000



		Before	-----	-3.000	52.148	117.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.957	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Mag - 7	V	Master	-----	0.849	1.378	1.981	
		Before	-----	0.849	1.397	1.981	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.019	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 7	deg	Master	-----	-7.000	47.085	113.000	
		Before	-----	-7.000	48.348	113.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	1.263	-----	
		After-Before	-----	-----	-----	-----	
SPA Zero	mV	Master		-50.000	-0.026	50.000	
		Before		-50.000	-0.052	50.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-0.026	-----	
		After-Before	-----	-----	-----	-----	
SPA Plus	mV	Master		941.000	991.902	1040.000	
		Before		941.000	992.943	1040.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	1.041	-----	
		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	0.919	0.960	
		Before		0.870	0.920	0.960	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.001	-----	
		After-Before	-----	-----	-----	-----	

HDRS-B (HILT Density and Rxo Sonde, 125 degC) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	1801
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	754

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter	48944
HRDD Long Spacing Detector	Long Spacing	28074
HRDD Short Spacing Detector	Short Spacing	50796
Cesium 137 Gamma-Ray Logging Source	GSR-J	3739
HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	1801
HILT High-Resolution Mechanical Sonde, 125 degC	HRMS-B	748

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): 16:49:59 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	8.08	10.00	
Large Ring	in	Before	12.00	9.00	12.27	15.00	

HDRS Density Calibration - Inversion Results

Master (EEPROM): 19:03:32 15-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.598	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.691	1.696	
Pe Aluminum		Master	2.570	2.470	2.585	2.670	

Pe Magnesium		Master	2.650	2.550	2.597	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 19:03:32 15-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.1572	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.3685	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.3920	1.0000
SS Max Deviation	%	Master	0	-2.5000	1.7452	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.8261	1.5000
LS Max Deviation	%	Master	0	-3.5000	1.6226	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7281	
		Before	0.7281	0.6917	0.7258	0.7646
		Before-Master	-----	-----	-0.0023	-----
BS Window Sum	1/s	Master	1		14020	
		Before	14020	13319	14002	14721
		Before-Master	-----	-----	-18	-----
SS Window Ratio		Master	1.0000		0.5113	
		Before	0.5113	0.4857	0.5134	0.5369
		Before-Master	-----	-----	0.0021	-----
SS Window Sum	1/s	Master	1		9425	
		Before	9425	8954	9435	9896
		Before-Master	-----	-----	10	-----
LS Window Ratio		Master	1.0000		0.2939	
		Before	0.2939	0.2792	0.2948	0.3086
		Before-Master	-----	-----	0.0009	-----
LS Window Sum	1/s	Master	1		1464	
		Before	1464	1391	1468	1537
		Before-Master	-----	-----	4	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1495	2400
		Before		1000	1498	2400
		Before-Master	-----	-100	3	100
SS PM High Voltage	V	Master		1000	1475	2400
		Before		1000	1500	2400
		Before-Master	-----	-100	25	100
LS PM High Voltage	V	Master		1000	1713	2400
		Before		1000	1704	2400
		Before-Master	-----	-100	-9	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.29	25.00
		Before		5.00	11.37	25.00
		Before-Master	-----	-1.00	0.08	1.00
SS Crystal Resolution	%	Master		5.00	9.53	20.00
		Before		5.00	9.48	20.00
		Before-Master	-----	-1.00	-0.05	1.00
LS Crystal Resolution	%	Master		5.00	9.89	20.00
		Before		5.00	9.86	20.00
		Before-Master	-----	-1.00	-0.03	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 17:06:57 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3864	4185
Deep Resistivity	ohm.m	Before	3830	3524	3812	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3821	4136

HGNS-B (HILT Gamma-Ray and Neutron Sonde, 125 degC) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 125 degC	HGNS-B	956

Auxiliary Equipment :

HGNS Accelerometer, 125 degC	HACCZ-B	460
AmBe Neutron Logging Source	NSR-F	659

Calibration Parameter :

Water Temperature	
Housing Size	
JIG-BKG (Jig minus background reference)	162

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 16:51:50 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	m/s2	Before	9.81	9.61	9.77	10.01

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-Jan-1997

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Accelerometer Manufacturer		Master			Sunstrand	
Accelerometer Reference Temperature	degC	Master		-1.0	20.0	50.0
Accelerometer Coefficients - 0		Master	-----	-----	-203.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	14.850	-----
Accelerometer Coefficients - 2		Master	-----	-----	0.026	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.181	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	293.600	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.999	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 16:17:08 01-Apr-2013 Before (Measured): 16:55:03 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	28.8	40.0
		Before	0	5.0	28.7	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.3	-0.1	4.3
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	29.2	40.0
		Before	0	5.0	29.2	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.4	0.0	4.4
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5451.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2351.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5422.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2321.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 17:05:46 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	104.1	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	182.0	154.3	158.5	202.5
		After			NOT DONE	
		After-Before	-----	-----	-----	-----
GR Calibration Gain		Before	0.89	0.80	1.02	1.05
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

GPIT-F (General-Purpose Inclinometer Tool) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

GPIT DHRU Sensor Block - F DHRU-F 1895

GPIT-F Accelerometers Master Calibration - Signals and Temperature Correction for Accelerometers

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GPIT-F Accelero X Model[0,0]		Master	-----	-----	0.004207087	-----
GPIT-F Accelero X Model[0,1]		Master	-----	-----	0.0006864038	-----
GPIT-F Accelero X Model[1,0]		Master	-----	-----	-1.040337E-05	-----
GPIT-F Accelero X Model[1,1]		Master	-----	-----	-1.043902E-07	-----
GPIT-F Accelero X Model[2,0]		Master	-----	-----	4.059539E-06	-----
GPIT-F Accelero X Model[2,1]		Master	-----	-----	8.144008E-10	-----
GPIT-F Accelero X Model[3,0]		Master	-----	-----	-1.812993E-08	-----
GPIT-F Accelero X Model[3,1]		Master	-----	-----	-4.019786E-12	-----
GPIT-F Accelero Y Model[0,0]		Master	-----	-----	0.05549311	-----
GPIT-F Accelero Y Model[0,1]		Master	-----	-----	-0.0006798638	-----
GPIT-F Accelero Y Model[1,0]		Master	-----	-----	-0.0001430089	-----
GPIT-F Accelero Y Model[1,1]		Master	-----	-----	7.932753E-08	-----
GPIT-F Accelero Y Model[2,0]		Master	-----	-----	-2.232648E-06	-----
GPIT-F Accelero Y Model[2,1]		Master	-----	-----	-5.317669E-10	-----
GPIT-F Accelero Y Model[3,0]		Master	-----	-----	3.209307E-09	-----
GPIT-F Accelero Y Model[3,1]		Master	-----	-----	2.926397E-12	-----
GPIT-F Accelero Z Model[0,0]		Master	-----	-----	0.00906635	-----
GPIT-F Accelero Z Model[0,1]		Master	-----	-----	0.0006716743	-----
GPIT-F Accelero Z Model[1,0]		Master	-----	-----	0.0001165258	-----
GPIT-F Accelero Z Model[1,1]		Master	-----	-----	-8.532588E-08	-----
GPIT-F Accelero Z Model[2,0]		Master	-----	-----	2.9434E-06	-----
GPIT-F Accelero Z Model[2,1]		Master	-----	-----	5.723157E-10	-----
GPIT-F Accelero Z Model[3,0]		Master	-----	-----	-1.974962E-08	-----
GPIT-F Accelero Z Model[3,1]		Master	-----	-----	-3.11312E-12	-----

GPIT-F Accelerometers Master Calibration - Perpendicular Correction for Accelerometers

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GPIT-F Accelero Axis Model[0,0]		Master	-----	-----	0.000406909	-----
GPIT-F Accelero Axis Model[0,1]		Master	-----	-----	-0.0004816548	-----
GPIT-F Accelero Axis Model[0,2]		Master	-----	-----	0.0005256807	-----
GPIT-F Accelero Axis Model[0,3]		Master	-----	-----	-0.0001735548	-----
GPIT-F Accelero Axis Model[0,4]		Master	-----	-----	-0.0001155044	-----
GPIT-F Accelero Axis Model[0,5]		Master	-----	-----	-0.000620488	-----
GPIT-F Accelero Axis Model[0,6]		Master	-----	-----	0	-----
GPIT-F Accelero Axis Model[1,0]		Master	-----	-----	2.233345E-06	-----
GPIT-F Accelero Axis Model[1,1]		Master	-----	-----	-6.180741E-06	-----
GPIT-F Accelero Axis Model[1,2]		Master	-----	-----	-1.888997E-06	-----
GPIT-F Accelero Axis Model[1,3]		Master	-----	-----	-1.86296E-06	-----
GPIT-F Accelero Axis Model[1,4]		Master	-----	-----	1.184506E-06	-----
GPIT-F Accelero Axis Model[1,5]		Master	-----	-----	9.365464E-07	-----
GPIT-F Accelero Axis Model[1,6]		Master	-----	-----	0	-----

GPIT-F Magnetometers Master Calibration - Signals and Temperature Correction for Magnetometer

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GPIT-F Magneto X Model[0,0]		Master	-----	-----	44.21159	-----
GPIT-F Magneto X Model[0,1]		Master	-----	-----	4.902673	-----
GPIT-F Magneto X Model[1,0]		Master	-----	-----	-0.8434622	-----
GPIT-F Magneto X Model[1,1]		Master	-----	-----	-0.0001855705	-----
GPIT-F Magneto X Model[2,0]		Master	-----	-----	0.01488871	-----
GPIT-F Magneto X Model[2,1]		Master	-----	-----	2.669429E-06	-----
GPIT-F Magneto X Model[3,0]		Master	-----	-----	-0.0001037317	-----
GPIT-F Magneto X Model[3,1]		Master	-----	-----	-1.065781E-08	-----
GPIT-F Magneto Y Model[0,0]		Master	-----	-----	-113.494	-----
GPIT-F Magneto Y Model[0,1]		Master	-----	-----	-4.948484	-----
GPIT-F Magneto Y Model[1,0]		Master	-----	-----	3.985998	-----
GPIT-F Magneto Y Model[1,1]		Master	-----	-----	0.0002682161	-----
GPIT-F Magneto Y Model[2,0]		Master	-----	-----	-0.05203726	-----
GPIT-F Magneto Y Model[2,1]		Master	-----	-----	-3.585374E-06	-----
GPIT-F Magneto Y Model[3,0]		Master	-----	-----	0.0002362945	-----
GPIT-F Magneto Y Model[3,1]		Master	-----	-----	1.432678E-08	-----
GPIT-F Magneto Z Model[0,0]		Master	-----	-----	-211.3135	-----
GPIT-F Magneto Z Model[0,1]		Master	-----	-----	4.885637	-----
GPIT-F Magneto Z Model[1,0]		Master	-----	-----	5.51648	-----
GPIT-F Magneto Z Model[1,1]		Master	-----	-----	-0.0002786048	-----
GPIT-F Magneto Z Model[2,0]		Master	-----	-----	-0.06822682	-----
GPIT-F Magneto Z Model[2,1]		Master	-----	-----	4.267224E-06	-----
GPIT-F Magneto Z Model[3,0]		Master	-----	-----	0.0002360608	-----
GPIT-F Magneto Z Model[3,1]		Master	-----	-----	-1.684153E-08	-----

GPIT-F Magnetometers Master Calibration - Perpendicular Correction for Magnetometer

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GPIT-F Magneto Axis Model[0,0]		Master	-----	-----	-0.0004862078	-----
GPIT-F Magneto Axis Model[0,1]		Master	-----	-----	0.001974765	-----
GPIT-F Magneto Axis Model[0,2]		Master	-----	-----	-0.002917855	-----
GPIT-F Magneto Axis Model[0,3]		Master	-----	-----	0.005825281	-----
GPIT-F Magneto Axis Model[0,4]		Master	-----	-----	-0.0004863334	-----
GPIT-F Magneto Axis Model[0,5]		Master	-----	-----	-0.006558565	-----
GPIT-F Magneto Axis Model[0,6]		Master	-----	-----	0	-----
GPIT-F Magneto Axis Model[1,0]		Master	-----	-----	-1.08951E-06	-----
GPIT-F Magneto Axis Model[1,1]		Master	-----	-----	-4.978413E-06	-----
GPIT-F Magneto Axis Model[1,2]		Master	-----	-----	-7.040077E-06	-----
GPIT-F Magneto Axis Model[1,3]		Master	-----	-----	8.901991E-07	-----
GPIT-F Magneto Axis Model[1,4]		Master	-----	-----	-4.99458E-07	-----
GPIT-F Magneto Axis Model[1,5]		Master	-----	-----	3.313773E-06	-----
GPIT-F Magneto Axis Model[1,6]		Master	-----	-----	0	-----

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 05-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GPIT-F Electronic Coeff 1[0,0]		Master	-----	-----	0.04599224	-----
GPIT-F Electronic Coeff 1[0,1]		Master	-----	-----	249.7076	-----
GPIT-F Electronic Coeff 1[1,0]		Master	-----	-----	-0.0429299	-----
GPIT-F Electronic Coeff 1[1,1]		Master	-----	-----	0.01529558	-----
GPIT-F Electronic Coeff 1[2,0]		Master	-----	-----	0.0009150628	-----
GPIT-F Electronic Coeff 1[2,1]		Master	-----	-----	-0.000364481	-----
GPIT-F Electronic Coeff 1[3,0]		Master	-----	-----	-7.116594E-06	-----
GPIT-F Electronic Coeff 1[3,1]		Master	-----	-----	3.271396E-06	-----
GPIT-F Electronic Coeff 1[4,0]		Master	-----	-----	1.864788E-08	-----
GPIT-F Electronic Coeff 1[4,1]		Master	-----	-----	-1.056121E-08	-----
GPIT-F Electronic Coeff 2[0,0]		Master	-----	-----	0.2423331	-----
GPIT-F Electronic Coeff 2[0,1]		Master	-----	-----	249.6413	-----
GPIT-F Electronic Coeff 2[1,0]		Master	-----	-----	-0.02066159	-----
GPIT-F Electronic Coeff 2[1,1]		Master	-----	-----	0.01931706	-----
GPIT-F Electronic Coeff 2[2,0]		Master	-----	-----	0.0004525476	-----
GPIT-F Electronic Coeff 2[2,1]		Master	-----	-----	-0.0004382987	-----
GPIT-F Electronic Coeff 2[3,0]		Master	-----	-----	-2.692639E-06	-----
GPIT-F Electronic Coeff 2[3,1]		Master	-----	-----	3.846471E-06	-----

GPIT-F Electronic Coeff 2[3,1]		Master	-----	-----	3.84047E-06	-----	
GPIT-F Electronic Coeff 2[4,0]		Master	-----	-----	3.46192E-09	-----	
GPIT-F Electronic Coeff 2[4,1]		Master	-----	-----	-1.218894E-08	-----	
GPIT-F Electronic Coeff 3[0,0]		Master	-----	-----	-1.549737	-----	
GPIT-F Electronic Coeff 3[0,1]		Master	-----	-----	249.8072	-----	
GPIT-F Electronic Coeff 3[1,0]		Master	-----	-----	-0.0464365	-----	
GPIT-F Electronic Coeff 3[1,1]		Master	-----	-----	0.01576184	-----	
GPIT-F Electronic Coeff 3[2,0]		Master	-----	-----	0.001230107	-----	
GPIT-F Electronic Coeff 3[2,1]		Master	-----	-----	-0.0003938072	-----	
GPIT-F Electronic Coeff 3[3,0]		Master	-----	-----	-9.653277E-06	-----	
GPIT-F Electronic Coeff 3[3,1]		Master	-----	-----	3.519131E-06	-----	
GPIT-F Electronic Coeff 3[4,0]		Master	-----	-----	2.622631E-08	-----	
GPIT-F Electronic Coeff 3[4,1]		Master	-----	-----	-1.123186E-08	-----	

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 05-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Electronic Coeff 4[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 4[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 4[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 4[1,1]		Master	-----	-----	1.996457E-06	-----	
GPIT-F Electronic Coeff 4[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 4[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 4[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 4[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 4[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 4[4,1]		Master	-----	-----	-2.588633E-12	-----	
GPIT-F Electronic Coeff 5[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 5[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 5[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 5[1,1]		Master	-----	-----	1.996457E-06	-----	
GPIT-F Electronic Coeff 5[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 5[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 5[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 5[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 5[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 5[4,1]		Master	-----	-----	-2.588633E-12	-----	
GPIT-F Electronic Coeff 6[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 6[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 6[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 6[1,1]		Master	-----	-----	1.996457E-06	-----	
GPIT-F Electronic Coeff 6[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 6[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 6[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 6[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 6[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 6[4,1]		Master	-----	-----	-2.588633E-12	-----	

Company: Origin Energy Ltd

Well: Condabri 156

Field: Condabri

Rig: Savanna 406

State: Queensland

Country: Australia

Resistivity, Density, Neutron, GR Log

Schlumberger

AIT-PEX-GPIT

1:500 Scale

Resistivity, Density, Neutron, GR Log

AIT-PEX-GPIT

1:100, 1:200 Scale

Schlumberger

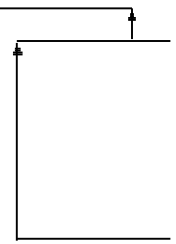
Company:	Origin Energy Ltd
Well:	Condabri 156
Field:	Condabri
Rig:	Savanna 406
State:	Queensland
Country:	Australia

Latitude:	26° 55' 4.78" S	UWID:	
Longitude:	150° 14' 23.394" E	Rig Name:	Savanna 406
		Rig Type:	Land

FL:	GDA 94 Zone 56
FL1:	Easting: 225888 E
FL2:	Northing: 7019657 N

Log Measured From: - Drill Floor: 3.80 m

Permanent Datum: - Ground Level: 313.00 m



Reference Datum - Mean Sea Level

Acquisition Dates:	20-May-2013
Log Interval:	20.71(m) -- 888.74(m)
Index Types:	Measured Depth
Index Scales:	1:100, 1:200
Depth Source:	Wireline Depth
Depth Sensor:	IDW
Print Type:	Final

Other Services:

None

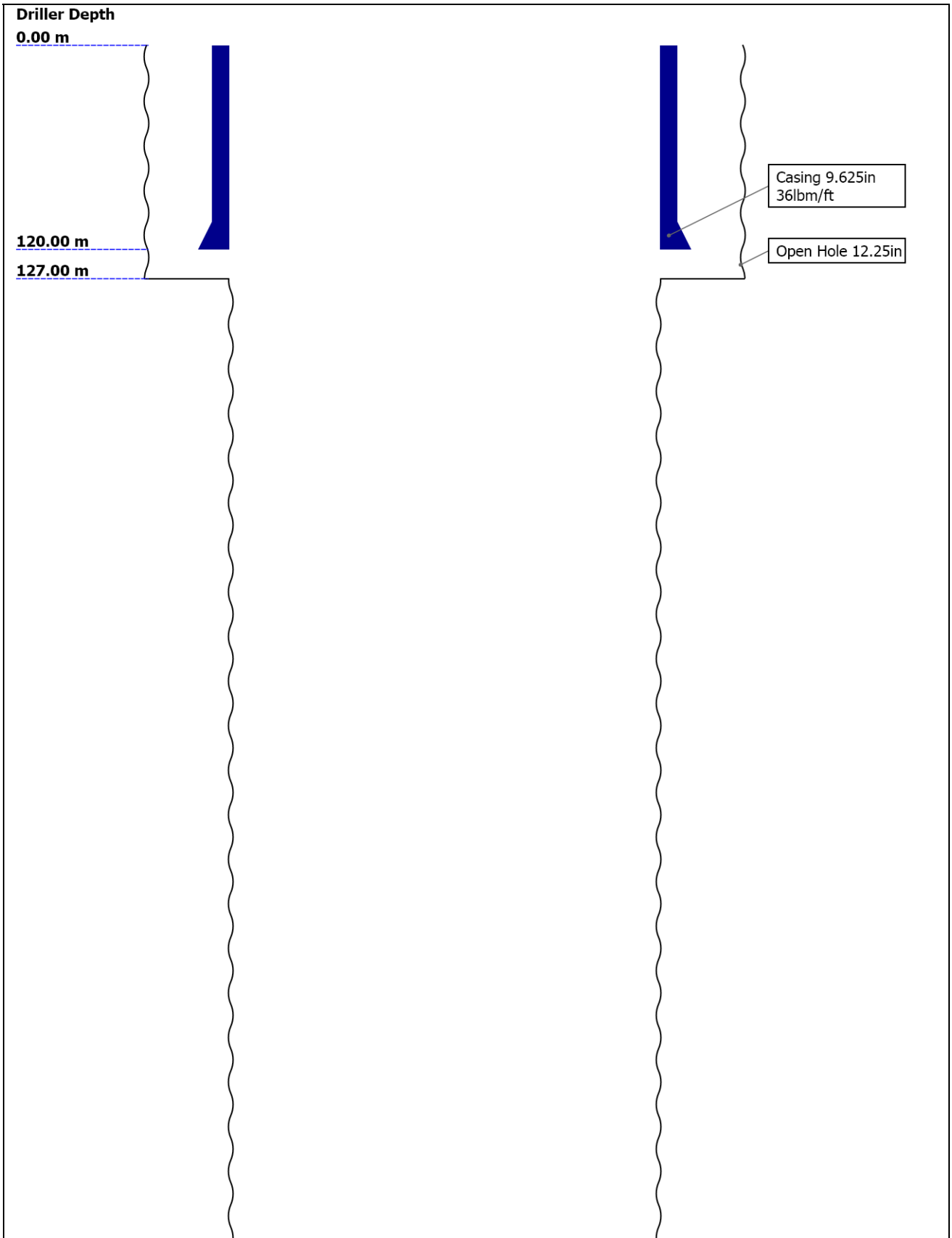
Company: Origin Energy Ltd Well: Condabri 156 Field: Condabri Rig: Savanna 406 State: Queensland Country: Australia

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

Well Sketch



Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	8.75				
Top Driller (m)	0	127				
Top Logger (m)	0	127				
Bottom Driller (m)	127	885				
Bottom Logger (m)	127	886.26				
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.914					
Grade	K55					
Top Driller (m)	0					
Top Logger (m)	0					
Bottom Driller (m)	120					
Bottom Logger (m)	120.19					

Operational Run Summary

Parameter (unit)	AIT-PEX-GPIT					
Date Log Started	20-May-2013					
Time Log Started	16:46:33					
Date Log Finished	20-May-2013					
Time Log Finished	20:22:41					
Top Log Interval (m)						
Bottom Log Interval (m)						
Total Depth (m)	886.26					
Max Hole Deviation (deg)						
Azimuth of Max Deviation (deg)						
Bit Size (in)	8.750					
Logging Unit Number	3170					
Logging Unit Location	AURM					
Recorded By	A.Mon/J.Niggins					
Witnessed By	Derryll Paliwoda/Ross					

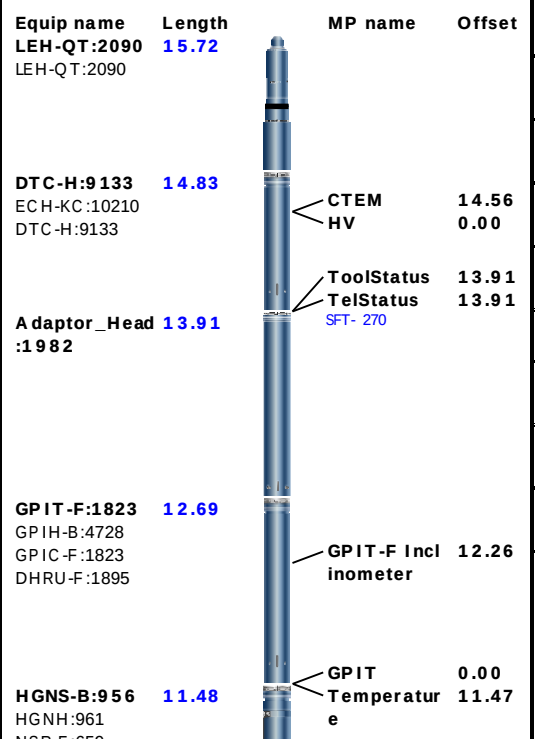
	McKay					
Service Order Number	CCT8-00021					

Borehole Fluids

Parameter(unit)	AIT-PEX-GPIT					
Fluid Type	Water					
Fluid Name	KCL Polymer					
Max Recorded Temperatures (degC)	45.62					
Source of Sample	Active Tank					
Salinity (ppm)	23063.2					
Density (lbm/gal)	9					
Funnel Viscosity (s)	40					
Fluid Loss (cm3)						
PH	9					
Date/Time Circulation Stopped	20-May-2013 12:00:00					
Date Logger on Bottom	20-May-2013					
Time Logger on Bottom	18:18:20					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degC)	0.27 @ 23.8					
RMF @ Meas Temp (ohm.m@degC)	0.2 @ 23.8					
RMC @ Meas Temp (ohm.m@degC)	0.34 @ 23.8					
RM @ BHT (ohm.m@degC)	0.18 @ 44.42					
RMF @ BHT (ohm.m@degC)	0.14 @ 44.42					
RMC @ BHT (ohm.m@degC)	0.23 @ 44.42					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

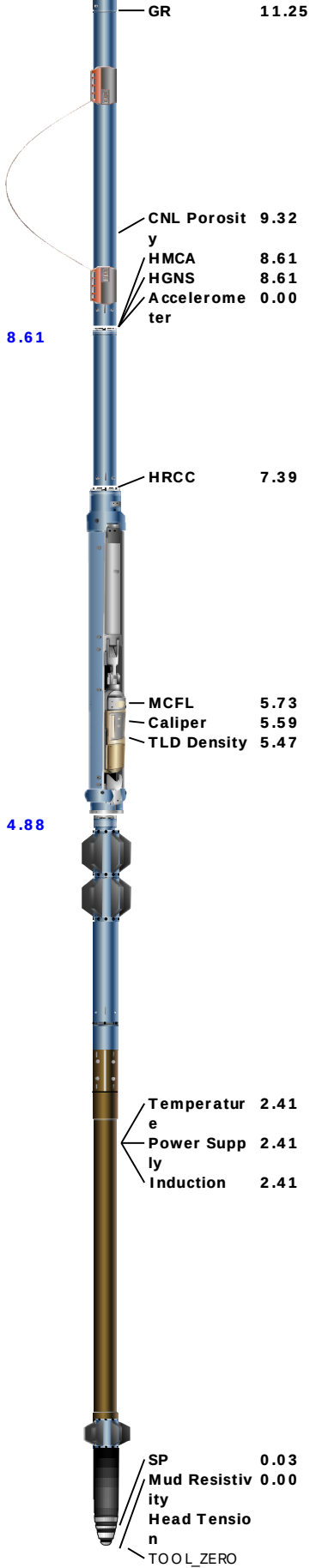
AIT-PEX-GPIT: Toolstring



AIT-PEX-GPIT: Remarks

AIT-PEX-GPIT: Remarks
Logging objectives: To evaluate 8.75" open hole section.
All presentations, intervals and toolsketch as per client program.
Toolstring ran with 3 standoffs on AIT and a boespring on HGNS.
Maximum logging speed was 1800 fph to acquire High Resolution data.
Repeat pass logged from TD to 795m to acquire 70m of valid data.
Main pass logged from TD to surface.
Maximum hole deviation from GPIT was 2.07deg.
Caliper check in casing was 8.75". Caliper shift of 0.16" applied.
Correlation with GR at 3 picks: 819.61m, 812.25m and 797.08m.

NSR-F:659
NPV-N
HGNS-B:956
HMCA-B
HACCZ-B:460



HDRS-B:748 8.61
ECH-MEB:772
HRCC-B:1801
HRMS-B:748
GSR-J:3739
HRGD-H:754
Long Spacing:28074
Backscatter:48944
Short Spacing:50796
GPV-Q

AIT-H:105 4.88
AHIS:105
AHRM:105

Lengths are in m
Maximum Outer Diameter = 6.750 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	AIT-PEX-GPIT		
Conveyance Type	Wireline		
Log Sequence	First Run in Hole.		

Rig Up Length at Surface (m)	44.48		
Rig Up Length at Bottom (m)	44.46		
Rig Up Length Correction (m)	0.02		
Stretch Correction (m)	0.20		
Rig Type	Land		
Depth Remark Parameters	**AIT-PEX-GPIT**		
Depth Remark 1	All Schlumberger Depth Control procedures followed.		
Depth Remark 2	IDW used as primary depth device.		
Depth Remark 3	Z-chart used as secondary depth device.		
Depth Measuring Device	**AIT-PEX-GPIT**		
Type	IDW-JB		
Serial Number	6375		
Calibration Date	09-Nov-2012		
Calibrator Serial Number	30		
Calibration Cable Type	7-46 ZV XS		
Wheel Correction 1	-6.05		
Wheel Correction 2	-5.26		
Tension Device	**AIT-PEX-GPIT**		
Type	CMTD-B/A		
Serial Number	1679		
Calibration Date	18-Apr-2013		
Calibrator Serial Number	78171		
Calibration Points	10		
Calibration RMS	22		
Calibration Peak Error	40		
Logging Cable	**AIT-PEX-GPIT**		
Type	7-46ZV-XS		
Serial Number	73229		
Logging Cable Length (m)	1866.00		

Survey Record

Survey Calculation

Method :	Minimum Radius of Curvature	DLS Method :	Lubinski
North Reference :	True North	Total Correction Formula :	Magnetic Dec

Rig Location

Latitude :	26° 55' 4.78" S	Longitude :	150° 14' 23.394" E

Tie In Point

Measured Depth:	0.00 m	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 m	North Displacement:	0.00 m	East Displacement:	0.00 m

Survey Quality Index

9 : Manual 28 : Tie-In Point

Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey

Seq	MD (m)	Incl (deg)	Azim (deg)	Course (m)	TVD (m)	V Sec (m)	N/ -S (m)	E/ -W (m)	Closure (m)	at Azim (deg)	DLS deg/30m	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	16.92	0.11	179.57	16.92	16.92	-0.02	-0.02	0.00	0.02	179.57	0.20	GPIT-F	9	0	0
3	26.06	0.17	290.19	9.14	26.06	-0.02	-0.02	-0.01	0.02	209.77	0.76	GPIT-F	9	0	0
4	35.20	0.09	34.86	9.14	35.20	-0.01	-0.01	-0.02	0.02	242.09	0.68	GPIT-F	9	0	0
5	44.35	0.35	171.61	9.14	44.35	-0.03	-0.03	-0.01	0.03	200.37	1.39	GPIT-F	9	0	0

6	53.49	0.29	150.27	9.14	53.49	-0.08	-0.08	0.00	0.08	177.57	0.44	GPIT-F	9	0	0
7	62.64	0.44	245.77	9.14	62.64	-0.12	-0.12	-0.02	0.12	188.57	1.82	GPIT-F	9	0	0
8	71.78	0.30	281.68	9.14	71.78	-0.13	-0.13	-0.07	0.15	210.39	0.88	GPIT-F	9	0	0
9	80.92	0.02	290.23	9.14	80.92	-0.12	-0.12	-0.10	0.16	219.58	0.92	GPIT-F	9	0	0
10	90.07	0.09	266.69	9.14	90.07	-0.12	-0.12	-0.11	0.16	222.01	0.21	GPIT-F	9	0	0
11	99.21	0.09	254.66	9.14	99.21	-0.12	-0.12	-0.12	0.17	224.98	0.07	GPIT-F	9	0	0
12	108.36	0.07	216.92	9.14	108.36	-0.13	-0.13	-0.13	0.18	225.89	0.19	GPIT-F	9	0	0
13	117.50	0.14	236.07	9.14	117.50	-0.14	-0.14	-0.15	0.20	226.18	0.23	GPIT-F	9	0	0
14	126.64	0.27	165.92	9.14	126.64	-0.17	-0.17	-0.15	0.22	221.92	0.84	GPIT-F	9	0	0
15	135.79	0.29	166.77	9.14	135.79	-0.21	-0.21	-0.14	0.25	213.56	0.07	GPIT-F	9	0	0
16	144.93	0.31	171.44	9.14	144.93	-0.26	-0.26	-0.13	0.29	206.91	0.10	GPIT-F	9	0	0
17	154.08	0.31	158.25	9.14	154.08	-0.30	-0.30	-0.12	0.32	201.14	0.23	GPIT-F	9	0	0
18	163.22	0.27	147.81	9.14	163.22	-0.34	-0.34	-0.10	0.36	195.70	0.21	GPIT-F	9	0	0
19	172.36	0.25	148.49	9.14	172.36	-0.38	-0.38	-0.07	0.39	191.18	0.07	GPIT-F	9	0	0
20	181.51	0.27	147.15	9.14	181.51	-0.41	-0.41	-0.05	0.42	187.28	0.08	GPIT-F	9	0	0
21	190.65	0.28	140.79	9.14	190.65	-0.45	-0.45	-0.03	0.45	183.44	0.11	GPIT-F	9	0	0
22	199.80	0.27	162.25	9.14	199.79	-0.49	-0.49	-0.01	0.49	180.72	0.34	GPIT-F	9	0	0
23	208.94	0.26	157.52	9.14	208.94	-0.53	-0.53	0.01	0.53	179.07	0.08	GPIT-F	9	0	0
24	218.08	0.30	165.26	9.14	218.08	-0.57	-0.57	0.02	0.57	177.72	0.17	GPIT-F	9	0	0
25	227.23	0.32	182.31	9.14	227.23	-0.62	-0.62	0.03	0.62	177.44	0.31	GPIT-F	9	0	0
26	236.37	0.31	177.48	9.14	236.37	-0.67	-0.67	0.03	0.67	177.63	0.09	GPIT-F	9	0	0
27	245.52	0.34	192.75	9.14	245.51	-0.72	-0.72	0.02	0.72	178.19	0.30	GPIT-F	9	0	0
28	254.66	0.31	188.41	9.14	254.66	-0.77	-0.77	0.01	0.77	179.02	0.14	GPIT-F	9	0	0
29	263.80	0.24	177.93	9.14	263.80	-0.82	-0.82	0.01	0.82	179.28	0.28	GPIT-F	9	0	0
30	272.95	0.25	172.12	9.14	272.95	-0.85	-0.85	0.01	0.85	179.08	0.10	GPIT-F	9	0	0
31	282.09	0.27	174.88	9.14	282.09	-0.90	-0.90	0.02	0.90	178.82	0.06	GPIT-F	9	0	0
32	291.24	0.29	179.74	9.14	291.23	-0.94	-0.94	0.02	0.94	178.76	0.10	GPIT-F	9	0	0
33	300.38	0.39	195.10	9.14	300.38	-0.99	-0.99	0.01	0.99	179.28	0.44	GPIT-F	9	0	0
34	309.52	0.19	110.02	9.14	309.52	-1.03	-1.03	0.02	1.03	178.95	1.37	GPIT-F	9	0	0
35	318.67	0.19	98.00	9.14	318.67	-1.03	-1.03	0.05	1.04	177.32	0.13	GPIT-F	9	0	0
36	327.81	0.39	135.96	9.14	327.81	-1.06	-1.06	0.09	1.06	175.41	0.86	GPIT-F	9	0	0
37	336.96	0.47	136.69	9.14	336.95	-1.11	-1.11	0.13	1.12	173.20	0.28	GPIT-F	9	0	0
38	346.10	0.51	136.80	9.14	346.10	-1.17	-1.17	0.19	1.18	170.95	0.13	GPIT-F	9	0	0
39	355.24	0.53	137.93	9.14	355.24	-1.23	-1.23	0.24	1.25	168.84	0.08	GPIT-F	9	0	0
40	364.39	0.52	137.27	9.14	364.38	-1.29	-1.29	0.30	1.32	166.94	0.04	GPIT-F	9	0	0
41	373.53	0.49	134.47	9.14	373.53	-1.35	-1.35	0.36	1.39	165.23	0.14	GPIT-F	9	0	0
42	382.68	0.47	133.54	9.14	382.67	-1.40	-1.40	0.41	1.46	163.67	0.08	GPIT-F	9	0	0
43	391.82	0.50	127.58	9.14	391.81	-1.45	-1.45	0.47	1.52	162.08	0.20	GPIT-F	9	0	0
44	400.96	0.51	124.11	9.14	400.96	-1.50	-1.50	0.53	1.59	160.36	0.10	GPIT-F	9	0	0
45	410.11	0.49	122.66	9.14	410.10	-1.54	-1.54	0.60	1.65	158.70	0.08	GPIT-F	9	0	0
46	419.25	0.49	117.16	9.14	419.25	-1.58	-1.58	0.67	1.72	157.07	0.15	GPIT-F	9	0	0
47	428.40	0.53	119.38	9.14	428.39	-1.62	-1.62	0.74	1.78	155.43	0.16	GPIT-F	9	0	0
48	437.54	0.53	120.55	9.14	437.53	-1.66	-1.66	0.81	1.85	153.91	0.04	GPIT-F	9	0	0
49	446.68	0.64	123.55	9.14	446.68	-1.71	-1.71	0.89	1.93	152.46	0.39	GPIT-F	9	0	0
50	455.83	0.76	115.64	9.14	455.82	-1.77	-1.77	0.99	2.02	150.73	0.51	GPIT-F	9	0	0
51	464.97	0.92	114.13	9.14	464.96	-1.82	-1.82	1.11	2.13	148.61	0.51	GPIT-F	9	0	0
52	474.12	0.97	112.65	9.14	474.11	-1.88	-1.88	1.25	2.26	146.40	0.20	GPIT-F	9	0	0
53	483.26	0.99	114.38	9.14	483.25	-1.94	-1.94	1.39	2.39	144.36	0.11	GPIT-F	9	0	0
54	492.40	0.91	112.42	9.14	492.39	-2.00	-2.00	1.53	2.52	142.59	0.28	GPIT-F	9	0	0
55	501.55	0.98	108.56	9.14	501.53	-2.06	-2.06	1.67	2.65	140.86	0.30	GPIT-F	9	0	0
56	510.69	0.93	107.38	9.14	510.68	-2.10	-2.10	1.82	2.78	139.15	0.16	GPIT-F	9	0	0
57	519.84	1.08	108.24	9.14	519.82	-2.15	-2.15	1.97	2.92	137.52	0.47	GPIT-F	9	0	0
58	528.98	1.05	109.53	9.14	528.96	-2.21	-2.21	2.13	3.07	136.00	0.11	GPIT-F	9	0	0
59	538.12	1.12	112.06	9.14	538.10	-2.27	-2.27	2.29	3.23	134.69	0.27	GPIT-F	9	0	0

60	547.27	1.13	111.30	9.14	547.25	-2.34	-2.34	2.46	3.39	133.51	0.05	GPIT-F	9	0	0
61	556.41	1.19	108.94	9.14	556.39	-2.40	-2.40	2.63	3.56	132.33	0.26	GPIT-F	9	0	0
62	565.56	1.23	109.72	9.14	565.53	-2.46	-2.46	2.82	3.74	131.17	0.14	GPIT-F	9	0	0
63	574.70	1.31	107.67	9.14	574.67	-2.53	-2.53	3.01	3.93	130.04	0.29	GPIT-F	9	0	0
64	583.84	1.36	106.05	9.14	583.81	-2.59	-2.59	3.21	4.13	128.88	0.21	GPIT-F	9	0	0
65	592.99	1.38	102.83	9.14	592.95	-2.64	-2.64	3.42	4.33	127.68	0.26	GPIT-F	9	0	0
66	602.13	1.41	103.53	9.14	602.10	-2.69	-2.69	3.64	4.53	126.51	0.10	GPIT-F	9	0	0
67	611.28	1.45	103.81	9.14	611.24	-2.75	-2.75	3.86	4.74	125.44	0.14	GPIT-F	9	0	0
68	620.42	1.47	103.50	9.14	620.38	-2.80	-2.80	4.09	4.96	124.44	0.08	GPIT-F	9	0	0
69	629.56	1.37	103.61	9.14	629.52	-2.86	-2.86	4.31	5.17	123.55	0.34	GPIT-F	9	0	0
70	638.71	1.51	101.92	9.14	638.66	-2.91	-2.91	4.53	5.39	122.68	0.49	GPIT-F	9	0	0
71	647.85	1.57	102.26	9.14	647.80	-2.96	-2.96	4.77	5.62	121.80	0.17	GPIT-F	9	0	0
72	657.00	1.71	102.23	9.14	656.94	-3.01	-3.01	5.03	5.86	120.94	0.49	GPIT-F	9	0	0
73	666.14	1.52	98.95	9.14	666.08	-3.06	-3.06	5.28	6.11	120.10	0.70	GPIT-F	9	0	0
74	675.28	1.66	98.66	9.14	675.22	-3.10	-3.10	5.53	6.34	119.27	0.47	GPIT-F	9	0	0
75	684.43	1.66	97.92	9.14	684.36	-3.14	-3.14	5.80	6.59	118.44	0.07	GPIT-F	9	0	0
76	693.57	1.76	99.41	9.14	693.50	-3.18	-3.18	6.07	6.85	117.67	0.36	GPIT-F	9	0	0
77	702.72	1.75	101.53	9.14	702.64	-3.23	-3.23	6.34	7.12	117.00	0.22	GPIT-F	9	0	0
78	711.86	1.83	98.03	9.14	711.78	-3.28	-3.28	6.62	7.39	116.35	0.45	GPIT-F	9	0	0
79	721.00	1.77	99.16	9.14	720.92	-3.32	-3.32	6.91	7.66	115.69	0.24	GPIT-F	9	0	0
80	730.15	1.84	100.66	9.14	730.06	-3.37	-3.37	7.19	7.94	115.13	0.30	GPIT-F	9	0	0
81	739.29	1.82	102.14	9.14	739.20	-3.43	-3.43	7.48	8.23	114.64	0.17	GPIT-F	9	0	0
82	748.44	1.84	102.21	9.14	748.34	-3.49	-3.49	7.76	8.51	114.22	0.05	GPIT-F	9	0	0
83	757.58	1.81	103.64	9.14	757.48	-3.56	-3.56	8.05	8.80	113.85	0.18	GPIT-F	9	0	0
84	766.72	1.88	103.02	9.14	766.62	-3.62	-3.62	8.33	9.09	113.51	0.23	GPIT-F	9	0	0
85	775.87	1.85	104.04	9.14	775.76	-3.69	-3.69	8.62	9.38	113.19	0.14	GPIT-F	9	0	0
86	785.01	1.90	107.23	9.14	784.90	-3.77	-3.77	8.91	9.68	112.96	0.37	GPIT-F	9	0	0
87	794.16	1.93	103.16	9.14	794.04	-3.85	-3.85	9.20	9.98	112.72	0.46	GPIT-F	9	0	0
88	803.30	1.93	102.64	9.14	803.17	-3.92	-3.92	9.50	10.28	112.43	0.06	GPIT-F	9	0	0
89	812.44	2.07	96.65	9.14	812.31	-3.98	-3.98	9.82	10.59	112.05	0.82	GPIT-F	9	0	0
90	821.59	2.00	97.53	9.14	821.45	-4.02	-4.02	10.14	10.91	111.61	0.26	GPIT-F	9	0	0
91	830.73	1.95	98.64	9.14	830.59	-4.06	-4.06	10.45	11.21	111.23	0.21	GPIT-F	9	0	0
92	839.88	1.91	98.71	9.14	839.73	-4.11	-4.11	10.76	11.52	110.90	0.11	GPIT-F	9	0	0
93	849.02	1.96	97.15	9.14	848.87	-4.15	-4.15	11.06	11.82	110.56	0.24	GPIT-F	9	0	0
94	858.16	1.96	98.82	9.14	858.01	-4.19	-4.19	11.37	12.12	110.24	0.19	GPIT-F	9	0	0
95	867.31	1.93	99.40	9.14	867.14	-4.24	-4.24	11.68	12.43	109.96	0.12	GPIT-F	9	0	0
96	876.45	1.87	100.74	9.14	876.28	-4.30	-4.30	11.98	12.73	109.73	0.25	GPIT-F	9	0	0

AIT-PEX-GPIT

Main Pass 1:100 HiRes

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
IHV	Integrated Hole Volume	GCSE_UP_PASS	29.74	m3
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	10.7	m3

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20121221-3.1.9755.1574

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	3.1.9755.0
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections	3.1.9755.0

Tool Elements	Description	Software Version	Firmware Version
AHIS	Array Induction Sonde - H	3.1.9755.1574	
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC	3.1.9755.0	2.0
HRCC-B	HILT High-Resolution Control Cartridge, 125 degC	3.1.9755.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
AIT-PEX-GPIT	Main[3]:Up	Up	20.71 m	888.74 m	20-May-2013 6:16:31 PM	20-May-2013 7:57:09 PM	0.00 m	true

All depths are referenced to toolstring zero

Log

AIT-PEX-GPIT: Main[3]:Up

Description: Triple Combo high resolution template for Platform Express Format: Log (Origin PEX 100_ HiRes) Index Scale: 1:100 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:32

Channel	Source	Sampling
AE10	AIT-H:AHIS:AHIS	3in
AE20	AIT-H:AHIS:AHIS	3in
AE30	AIT-H:AHIS:AHIS	3in
AE60	AIT-H:AHIS:AHIS	3in
AE90	AIT-H:AHIS:AHIS	3in
BS	Borehole	6in
CALI	HDRS-B:HRCC-B:HRCC-B	1in
DSO8	HDRS-B:HRMS-B:HRGD-H	2in
GR	HGNS-B:HGNS-B:HGNS-B	2in
HDRA	HDRS-B:HRMS-B:HRGD-H	2in
ICV	Borehole	6in
IHV	Borehole	6in
PEF8	HDRS-B:HRMS-B:HRGD-H	2in
RHO8	HDRS-B:HRMS-B:HRGD-H	2in
RSO8	HDRS-B:HRMS-B:HRGD-H	2in
RXO8	HDRS-B:HRMS-B:HRGD-H	2in
SP	AIT-H:AHIS:AHIS	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in
TNPH	HGNS-B:HGNS-B:HGNS-B	6in

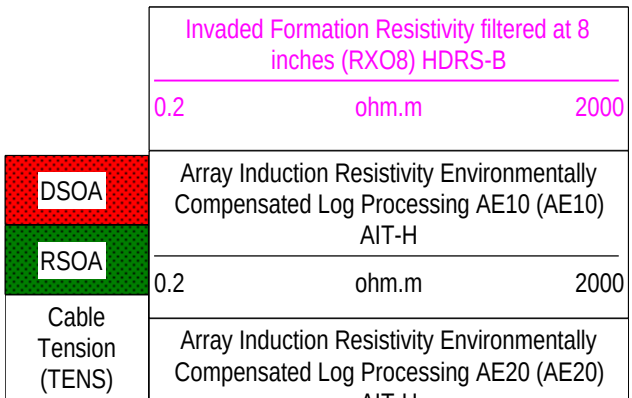
ICV - Integrated Cement Volume every 1.00 (m3)

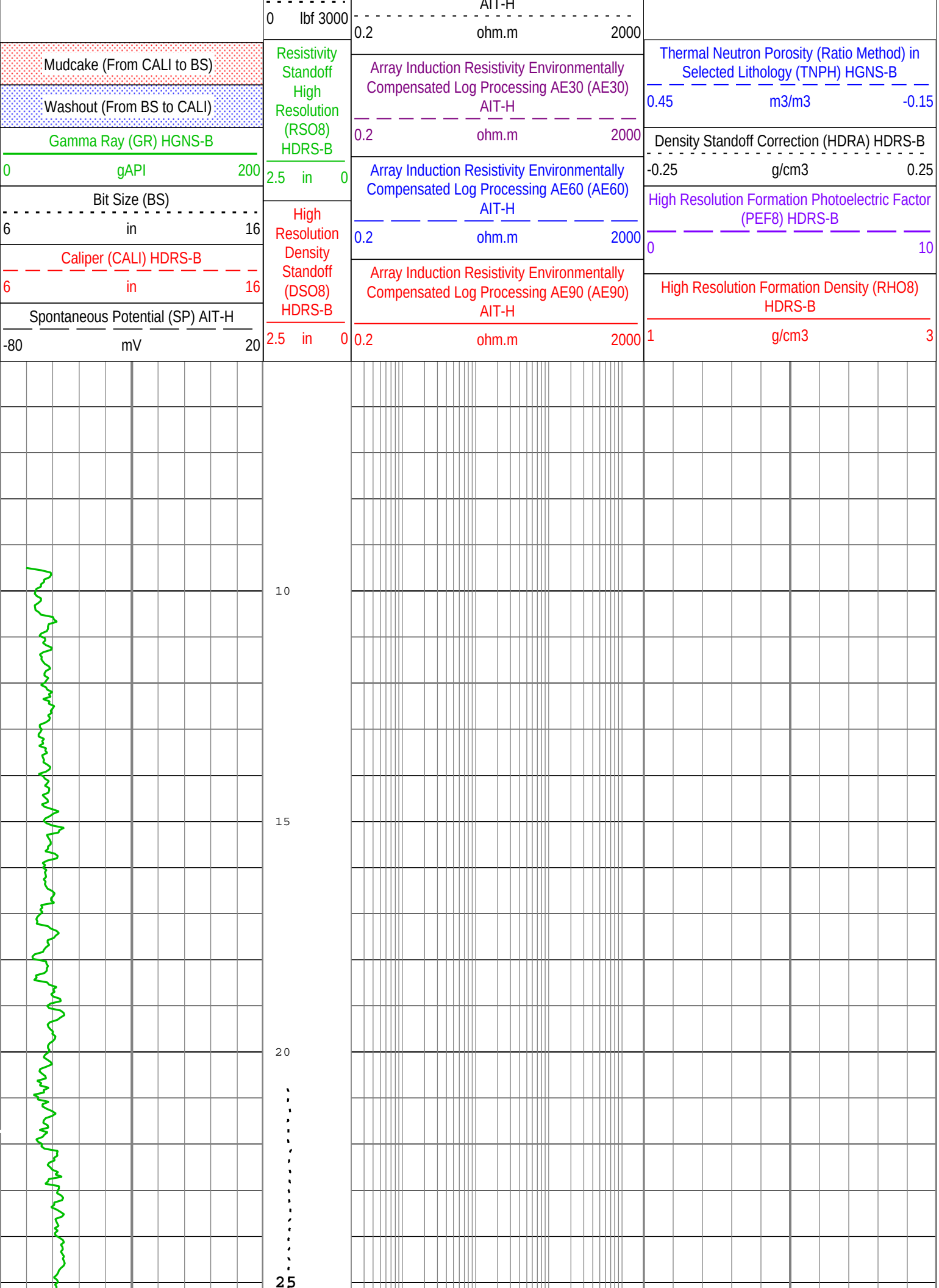
IHV - Integrated Hole Volume every 1.00 (m3)

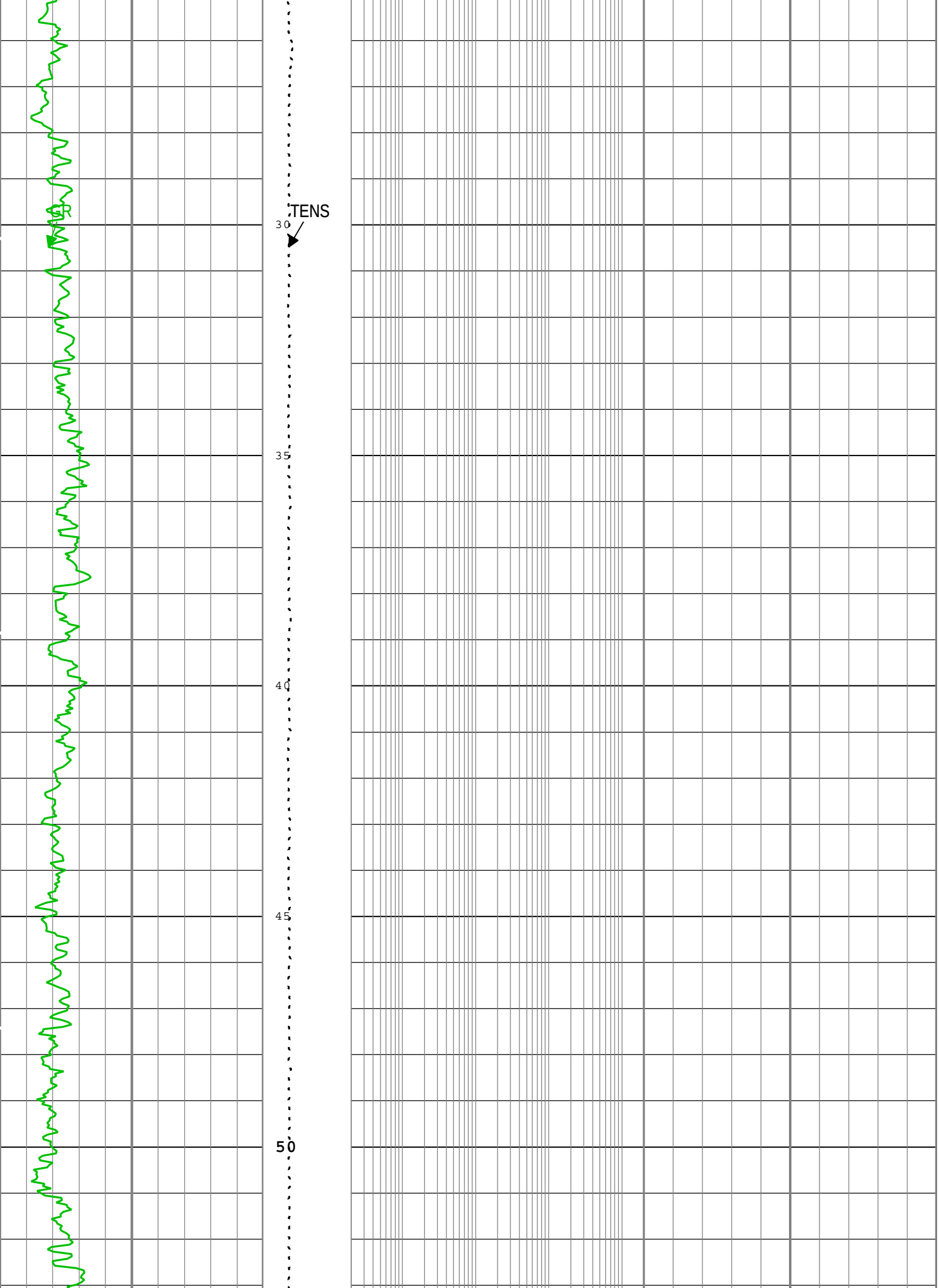
ICV - Integrated Cement Volume every 10.00 (m3)

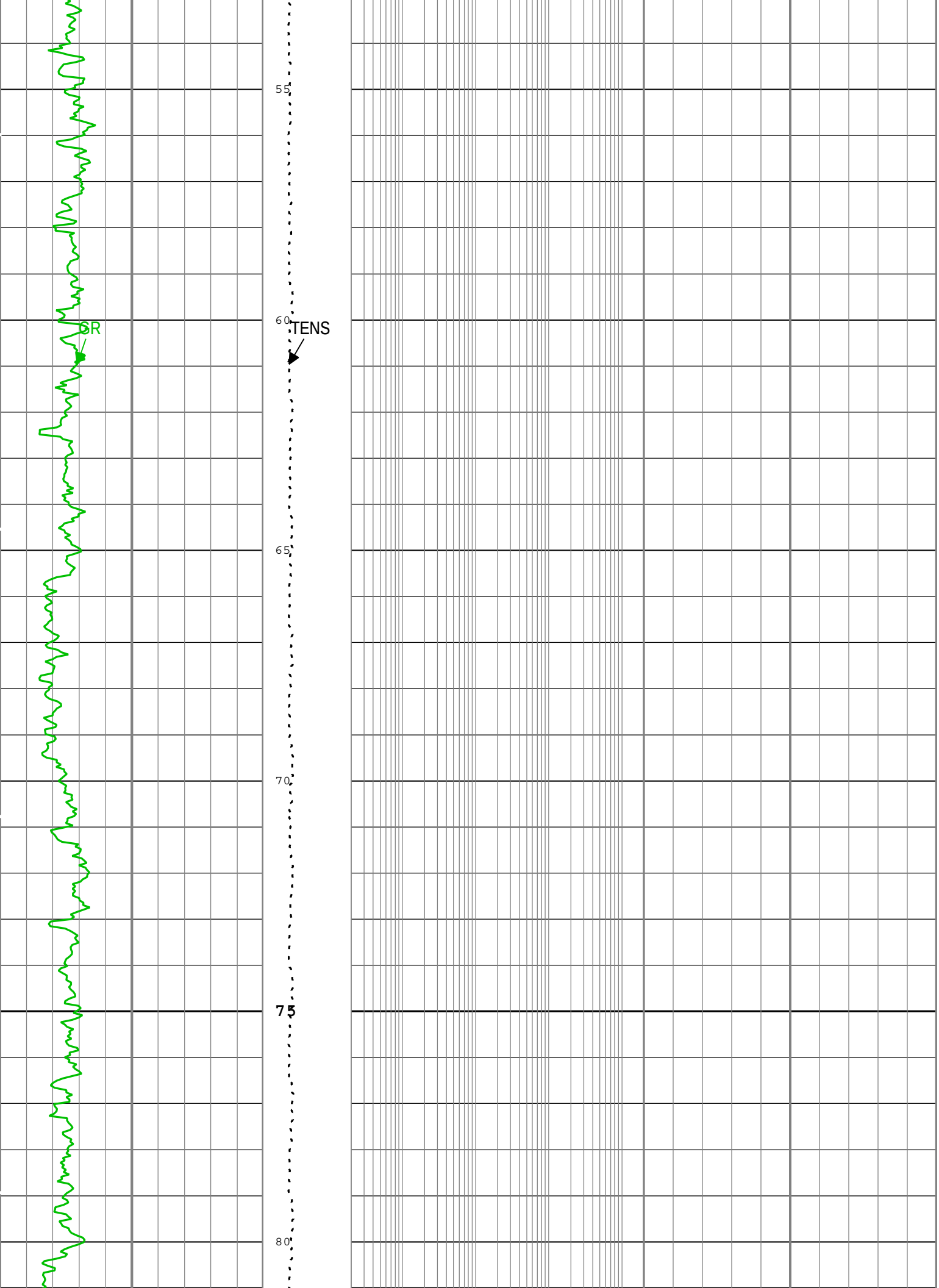
TIME_1900 - Time Marked every 60.00 (s)

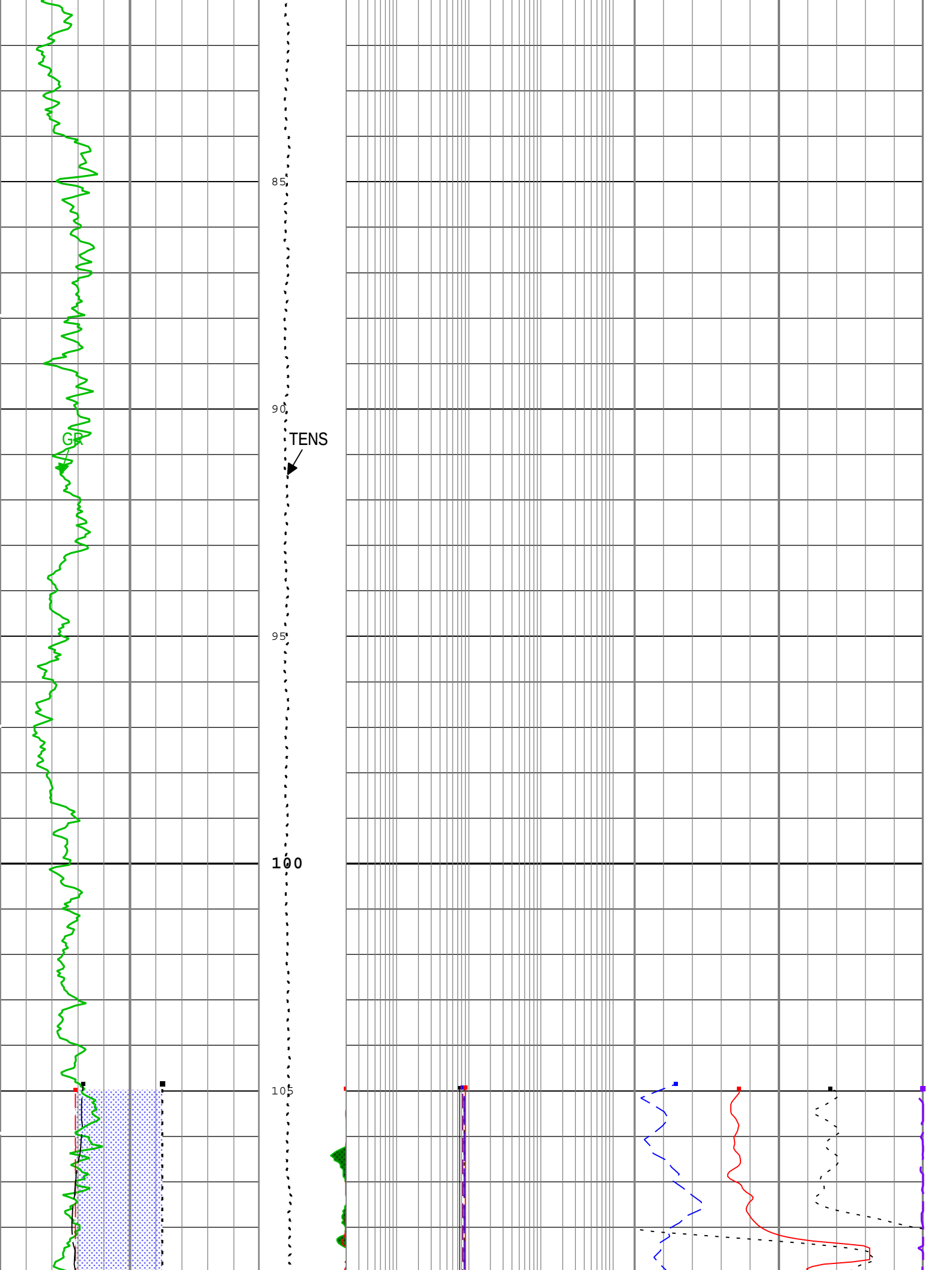
IHV - Integrated Hole Volume every 10.00 (m3)

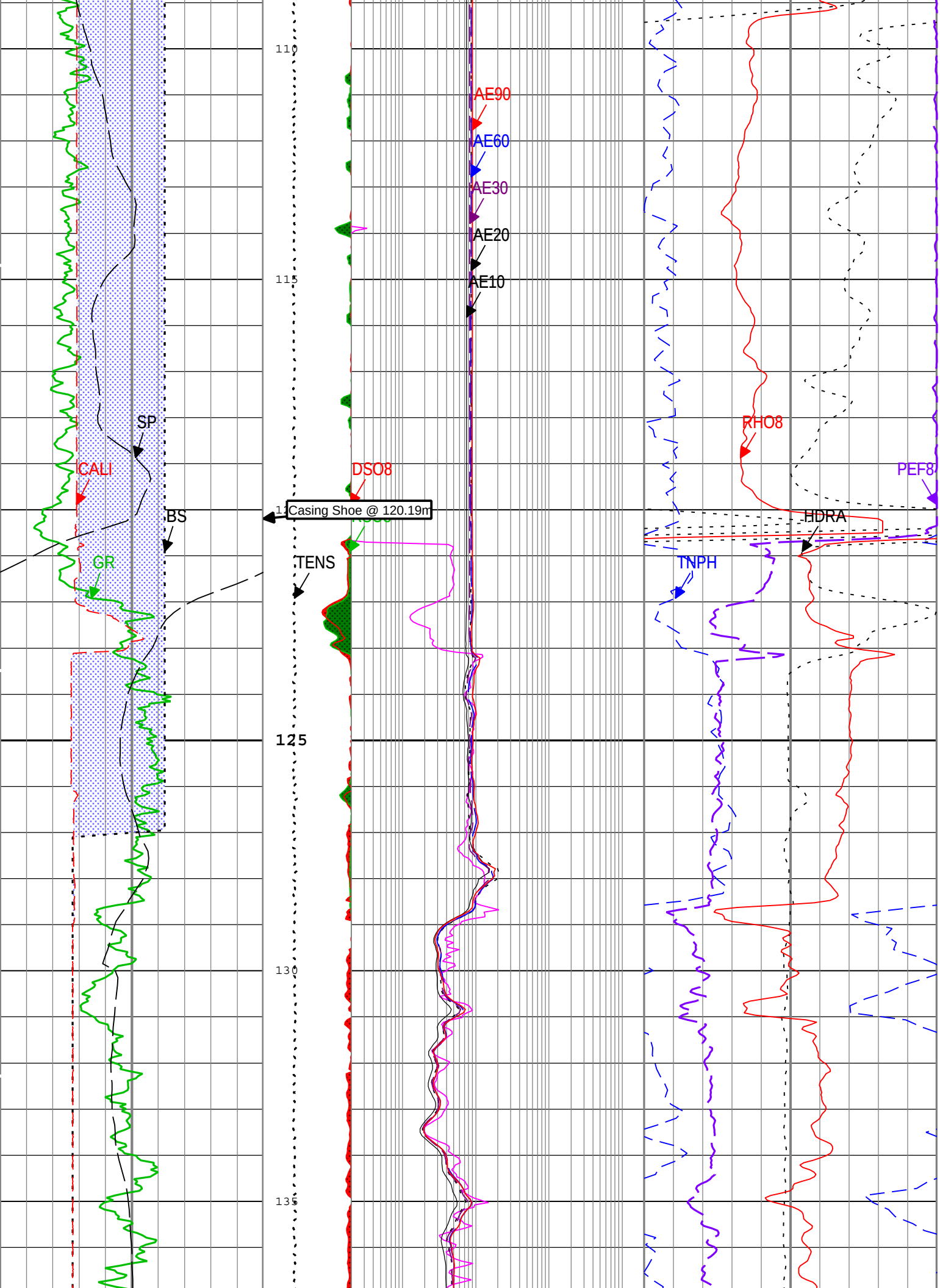


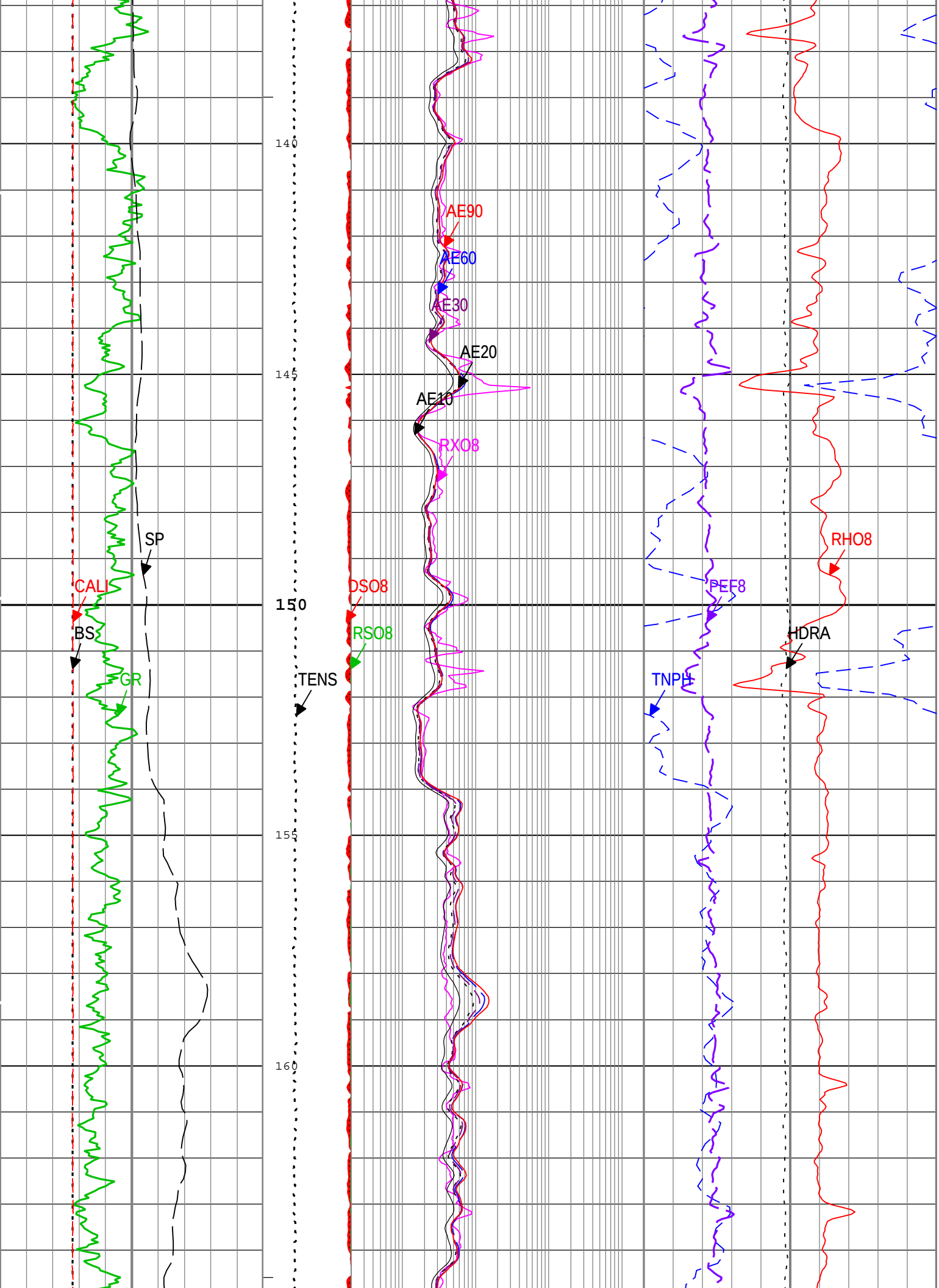

0 lbf 3000
AIT-H
0.2 ohm.m 2000
Mudcake (From CALI to BS)
Washout (From BS to CALI)
Gamma Ray (GR) HGNS-B
0 gAPI 200
Bit Size (BS)
6 in 16
Caliper (CALI) HDRS-B
6 in 16
Spontaneous Potential (SP) AIT-H
-80 mV 20
Resistivity Standoff High Resolution (RSO8) HDRS-B
2.5 in 0
High Resolution Density Standoff (DSO8) HDRS-B
2.5 in 0
Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H
0.2 ohm.m 2000
Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H
0.2 ohm.m 2000
Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H
0.2 ohm.m 2000
Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B
0.45 m3/m3 -0.15
Density Standoff Correction (HDRA) HDRS-B
-0.25 g/cm3 0.25
High Resolution Formation Photoelectric Factor (PEF8) HDRS-B
0 10
High Resolution Formation Density (RHO8) HDRS-B
1 g/cm3 3
10
15
20
25

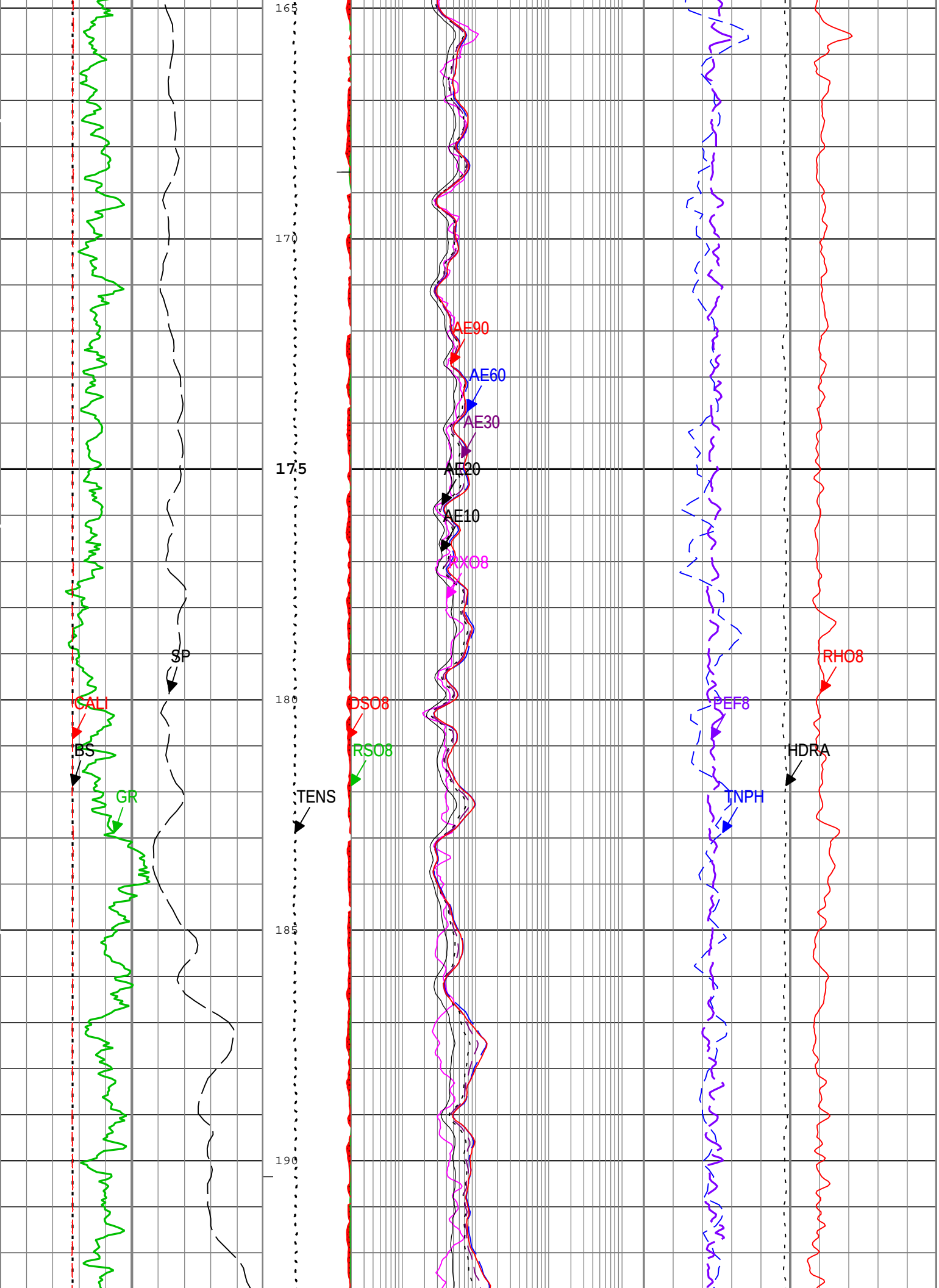

TENS
30
35
40
45
50


55
60
GR
TENS
65
70
75
80


85
90
GR
TENS
95
100
105


110
115
120
125
130
135
SP
CALI
BS
GR
TENS
DSO8
AE90
AE60
AE30
AE20
AE10
Casing Shoe @ 120.19m
RHO8
PEF8
HDRA
TNPH


140
145
150
155
160
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
TENS
DSO8
RSO8
RHO8
PEF8
HDRA
TNPH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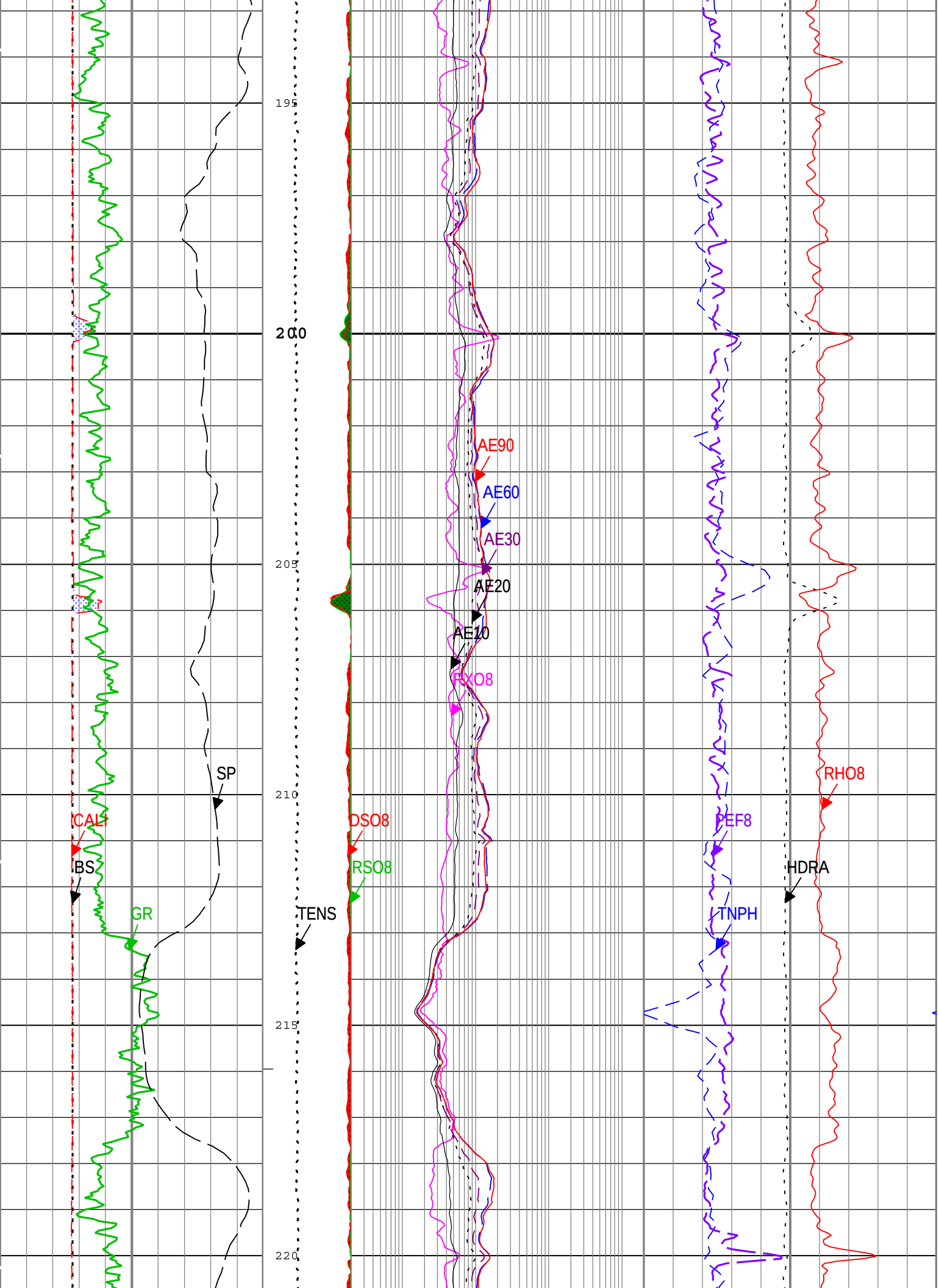
170
175
180
185
190
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH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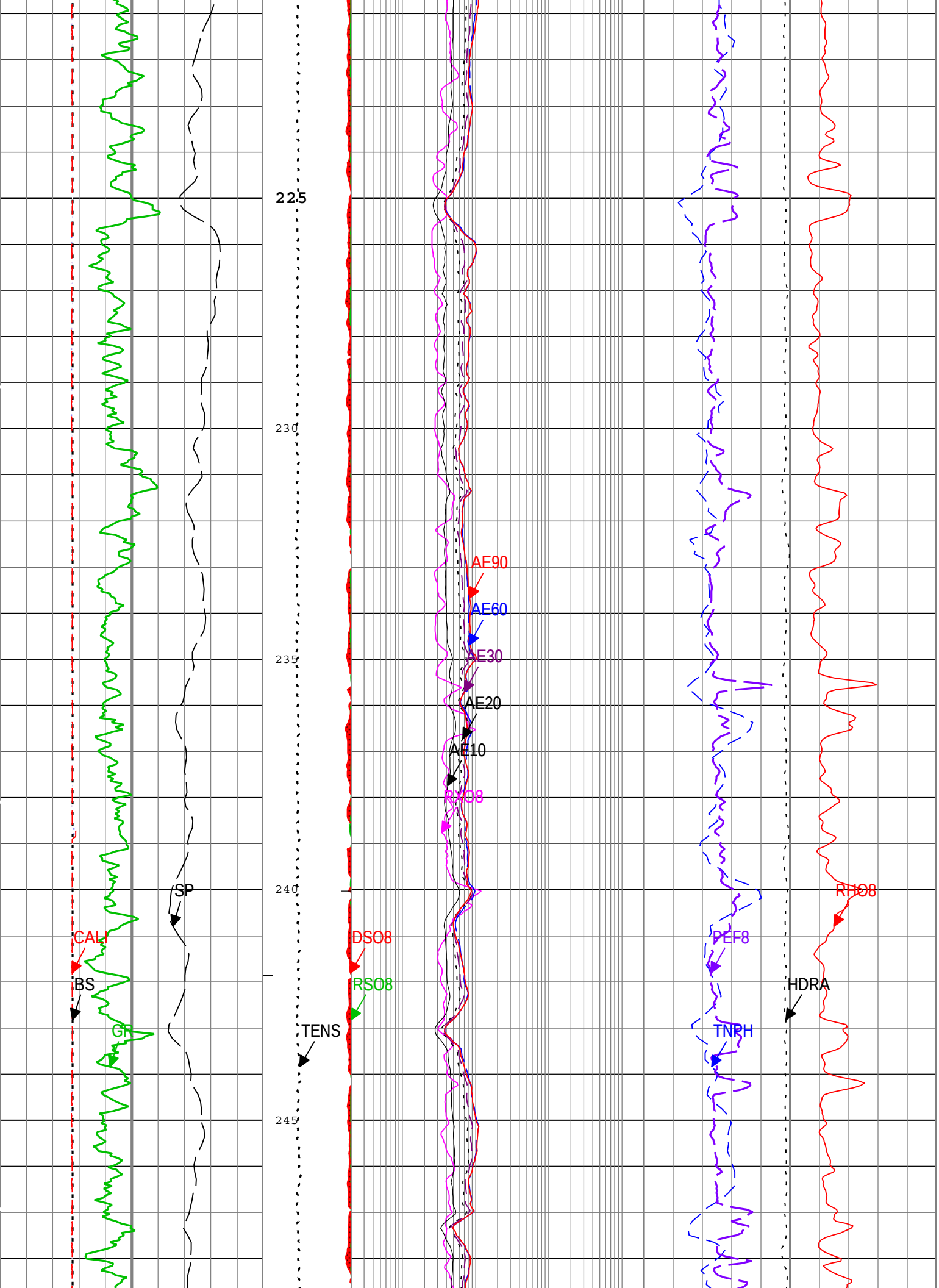
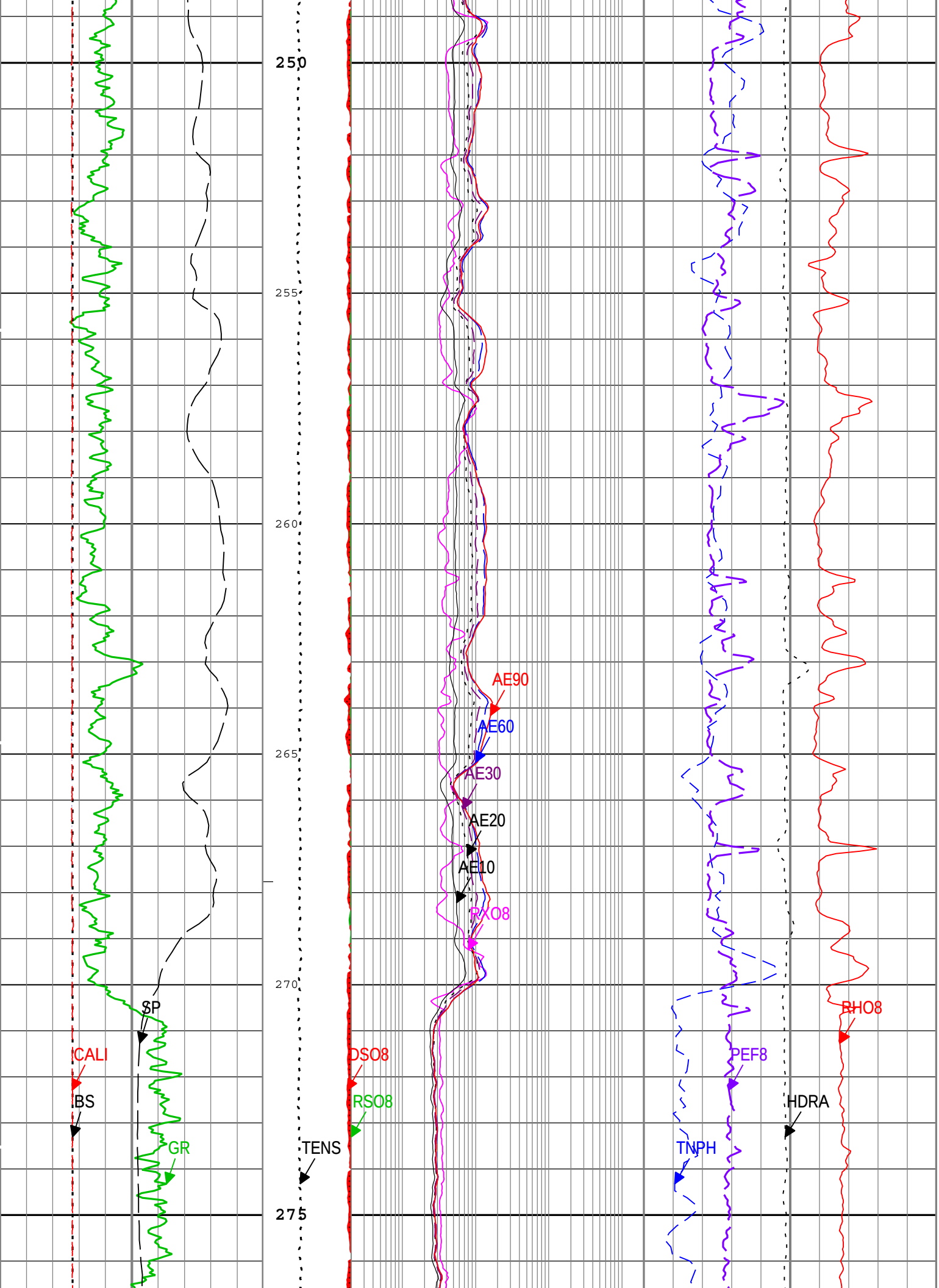
200
205
210
215
220
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
TENS
DSO8
RSO8
RHO8
PEF8
HDRA
TNPH


225
230
235
240
245
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
PEF8
TNPH
HDRA
RHO8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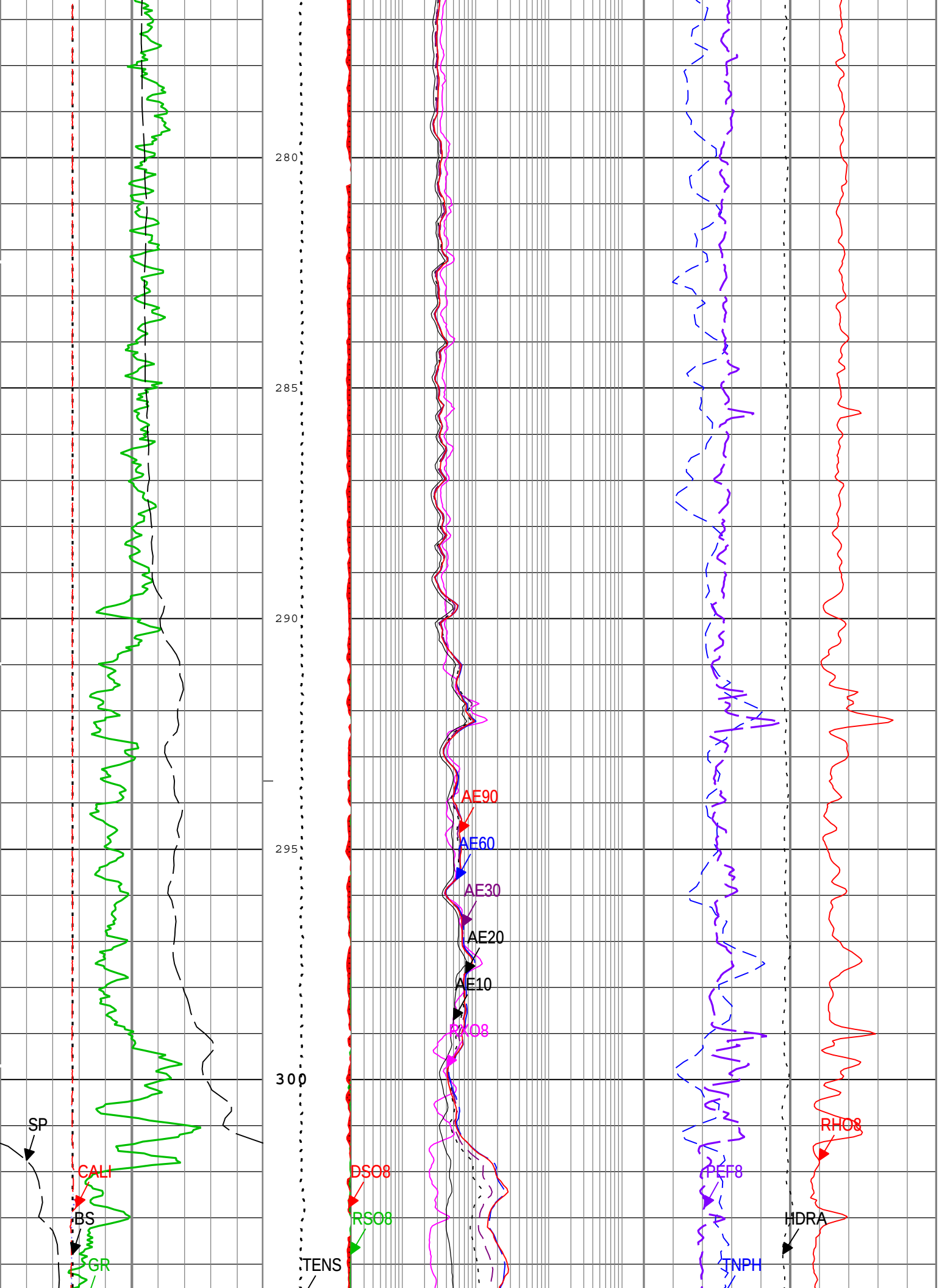
255
260
265
270
275
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
TENS
DSO8
RSO8
TNPH
PEF8
HDRA
RHO8


280
285
290
295
300
SP
CALI
BS
GR
TENS
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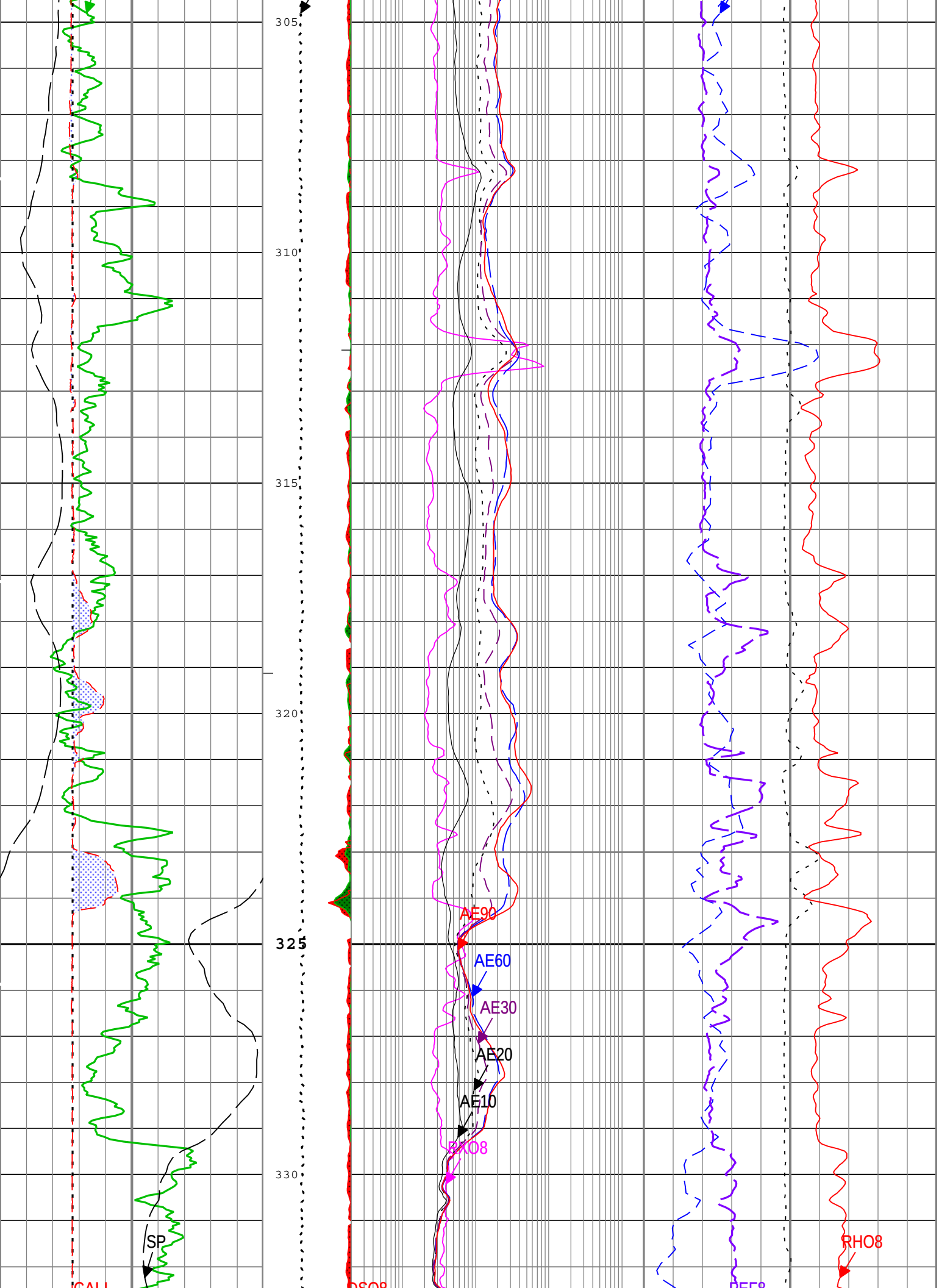
RSO8
AE90
AE60
AE30
AE20
AE10
RXO8
PEF8
TNPH
HDRA
RHO8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310
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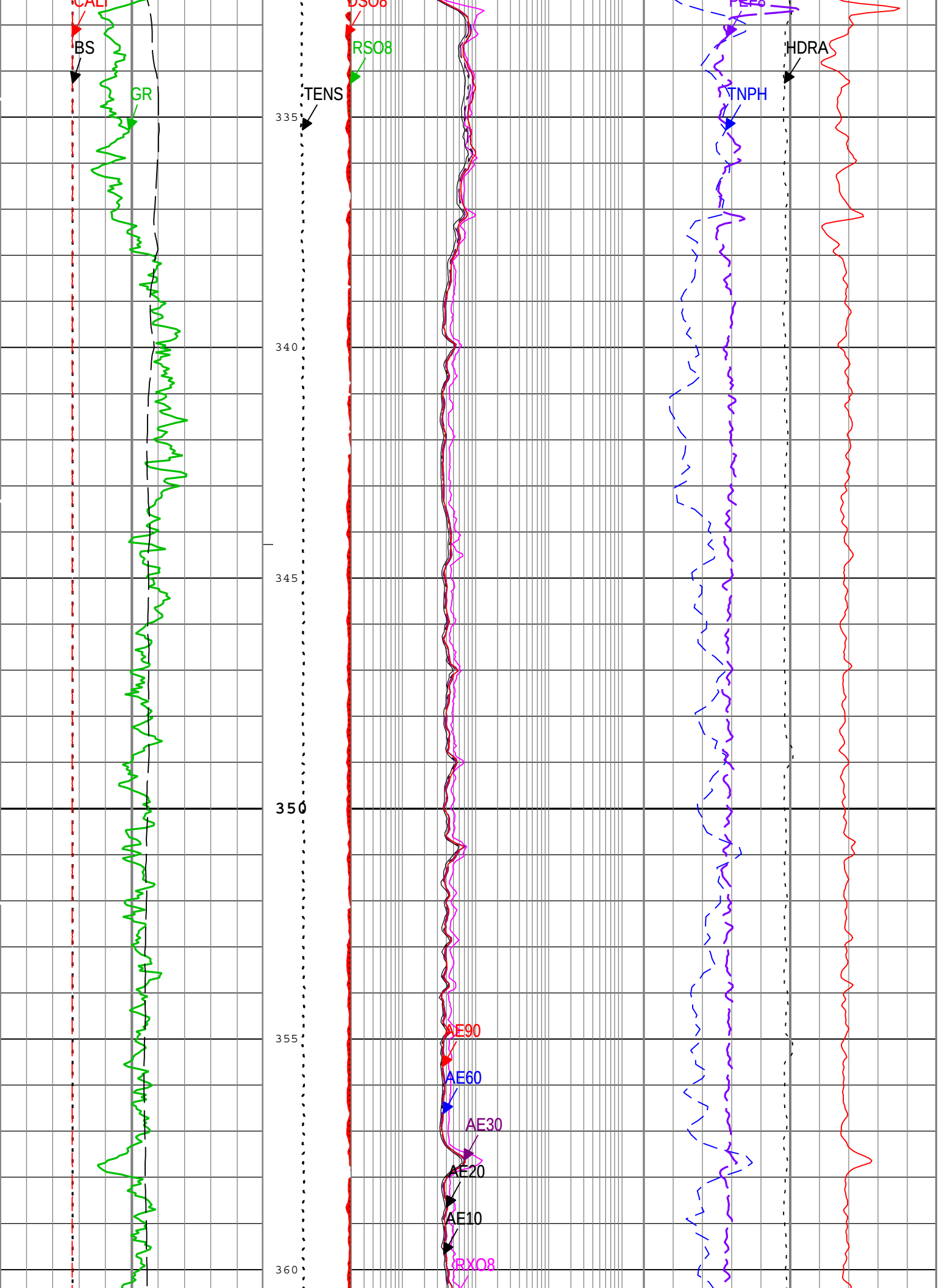
330
AE90
AE60
AE30
AE20
AE10
RXO8
SP
RHO8


CALI
BS
GR
TENS
DSO8
RSO8
HDRA
TNPH
335
340
345
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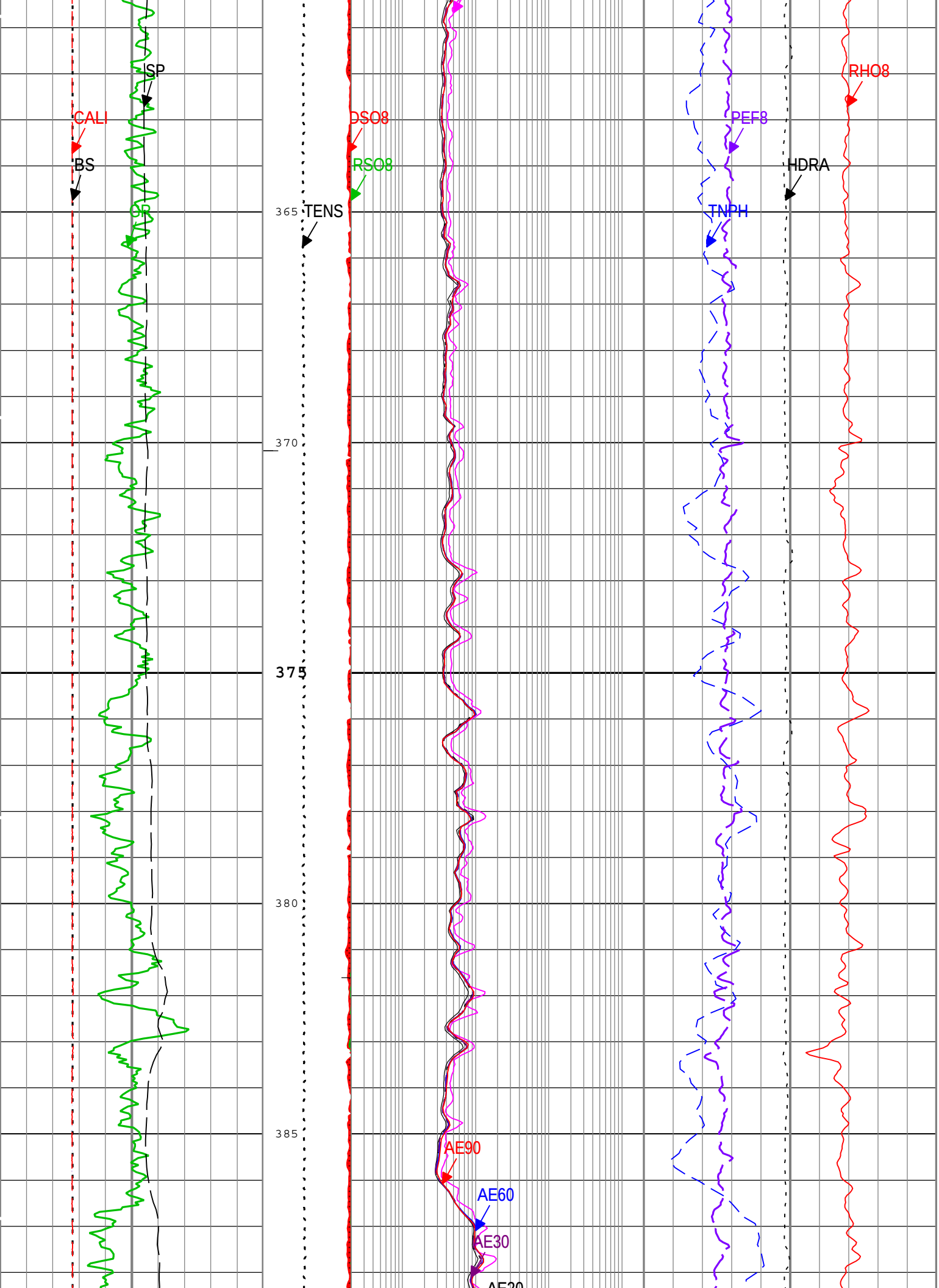
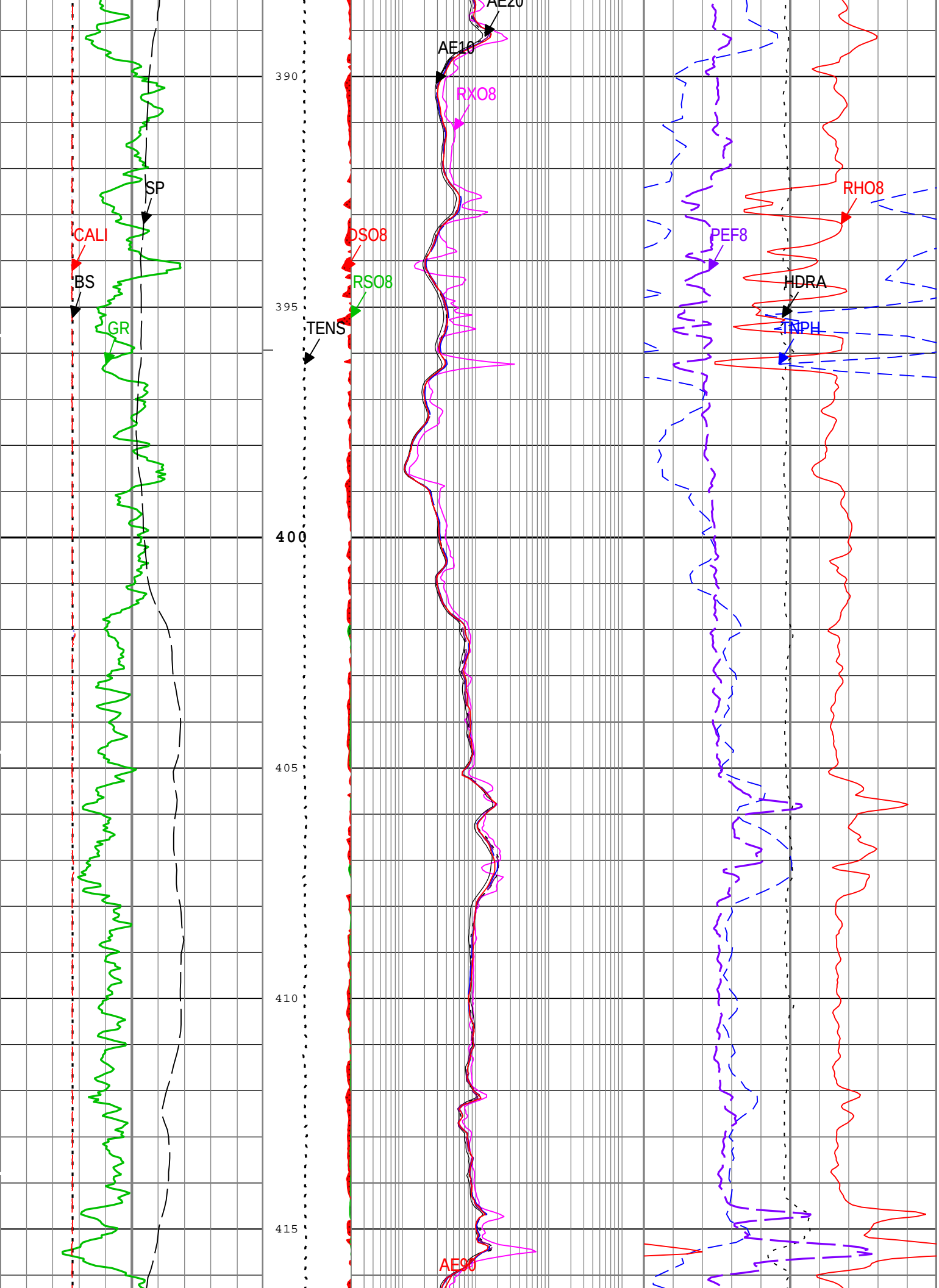
355
360
AE90
AE60
AE30
AE20
AE10
RXO8


CALI
BS
SP
TENS
DSO8
RSO8
PEF8
TNPH
HDRA
RHO8
AE90
AE60
AE30
365
370
375
380
385


AE20
AE10
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RXO8
SP
CALI
DSO8
RHO8
PEF8
BS
RSO8
HDRA
395
GR
TENS
TNPH
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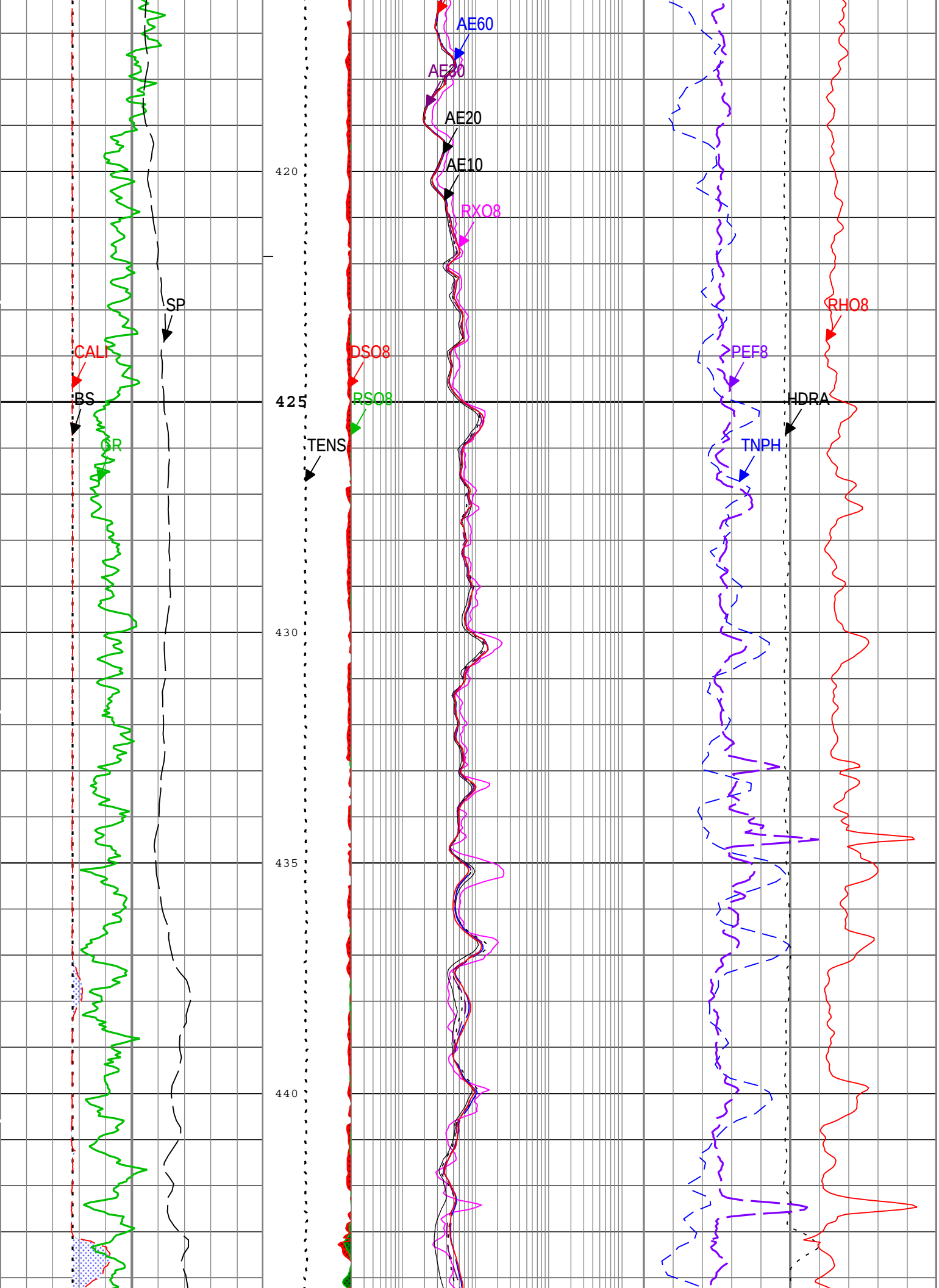
405
410
415
AE90


AE60
AE30
AE20
AE10
RXO8
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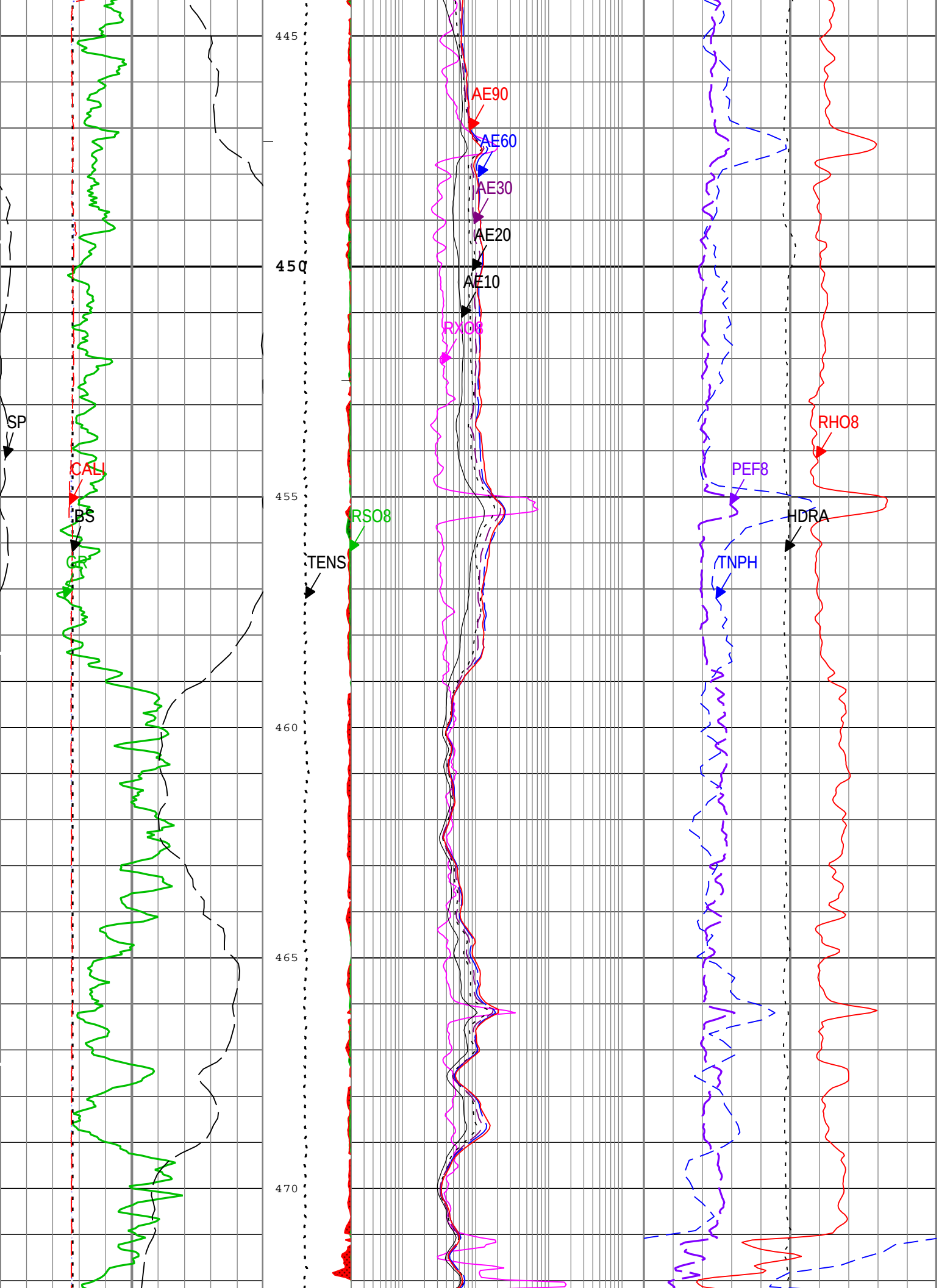
DSO8
RSO8
TENS
PEF8
RHO8
HDRA
TNPH
420
425
430
435
440


445
450
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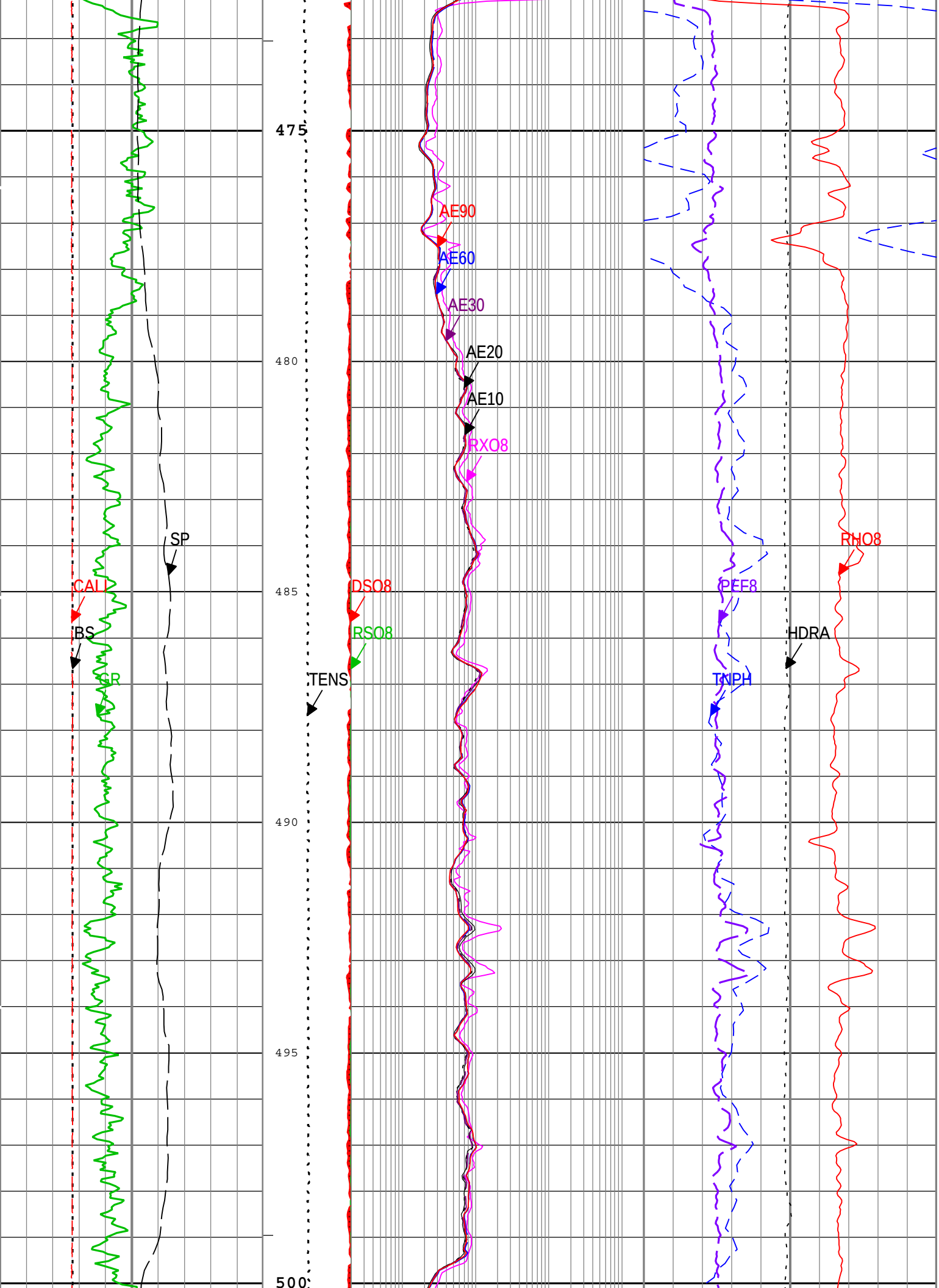
470
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
TENS
RSO8
RHO8
PEF8
HDRA
TNPH


475
480
485
490
495
500
AE90
AE60
AE30
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AE10
RXO8
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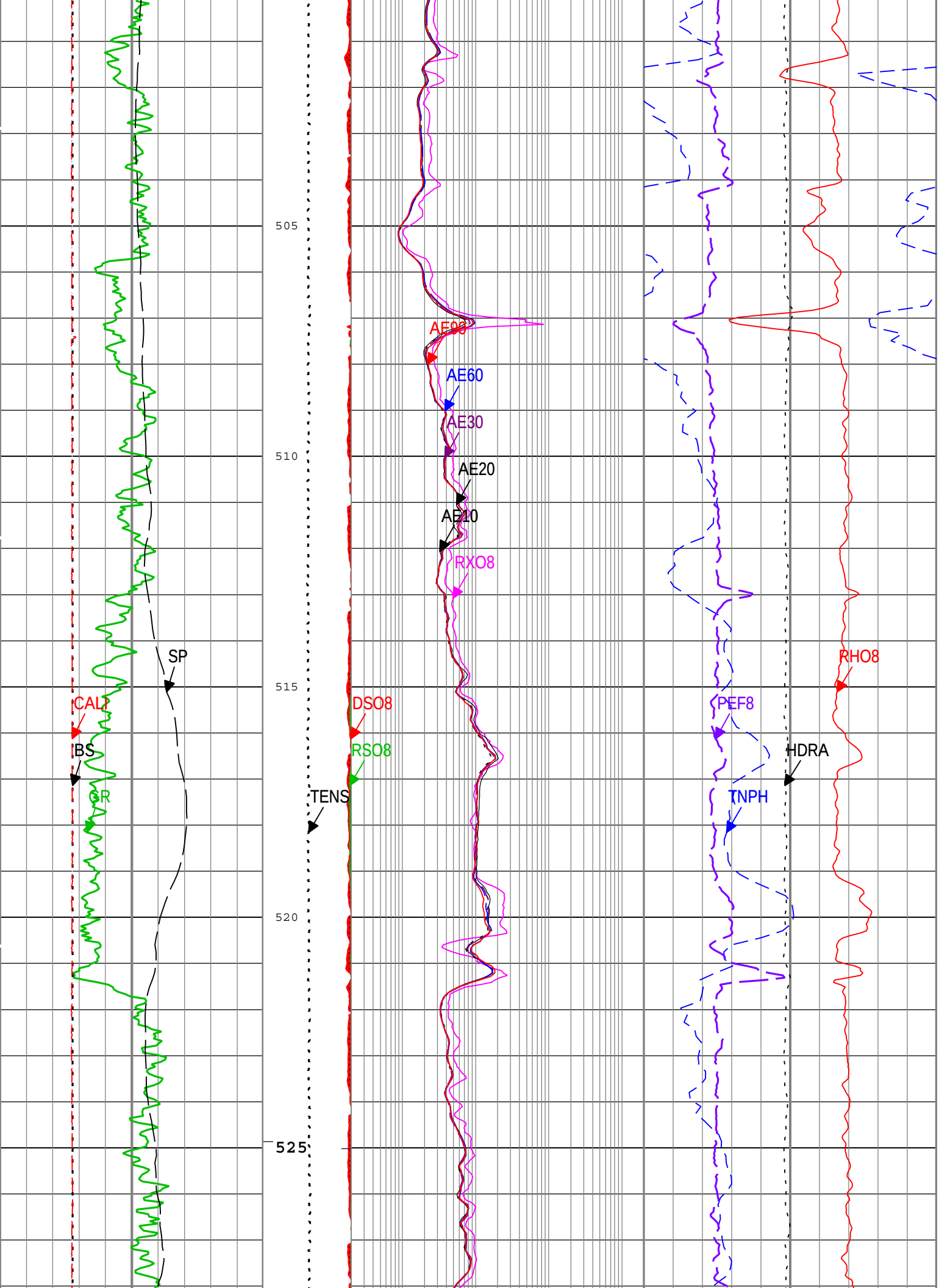
RSO8
GR
TENS
PEF8
HDRA
RHO8
TNPH


505
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520
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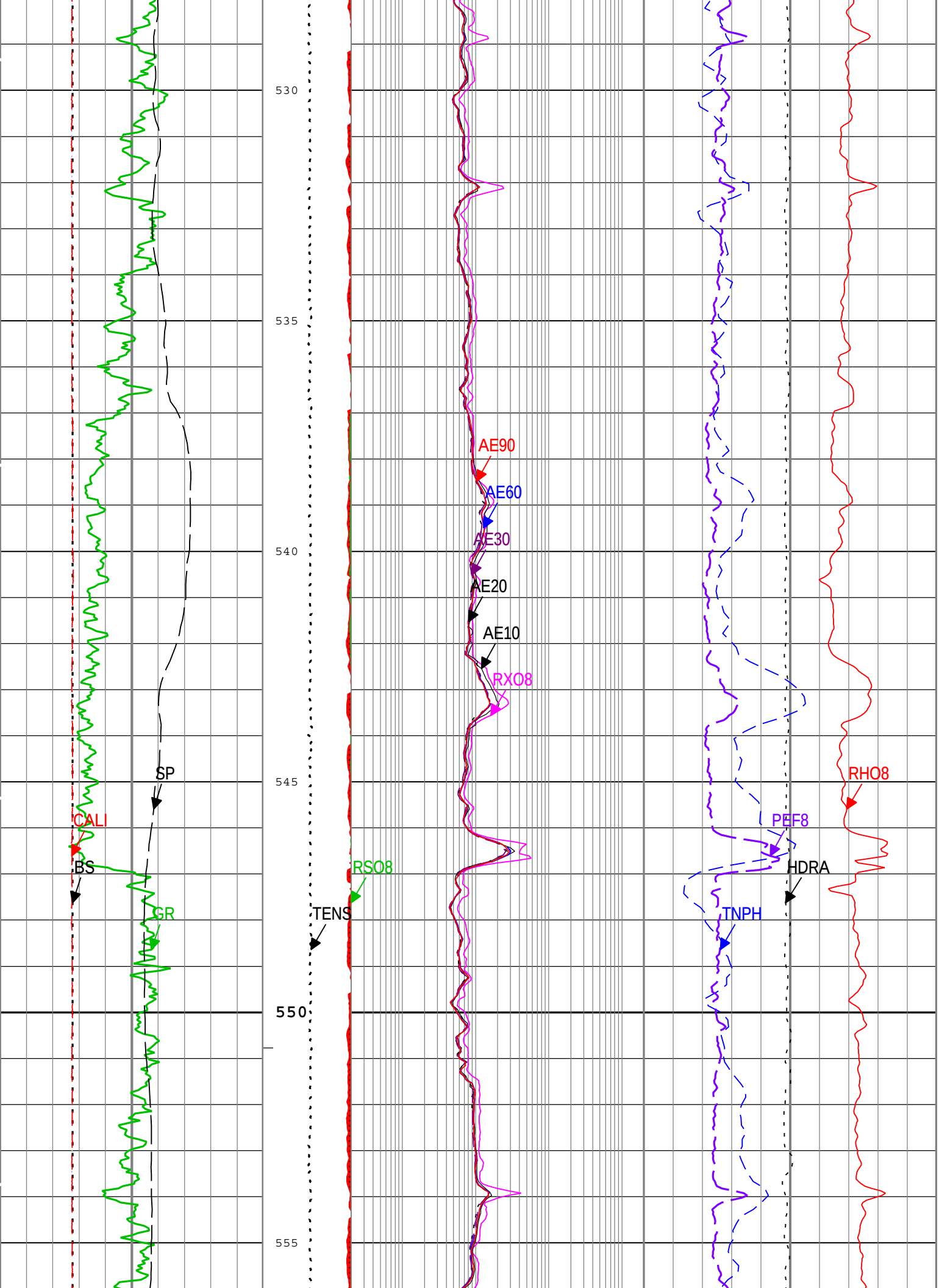
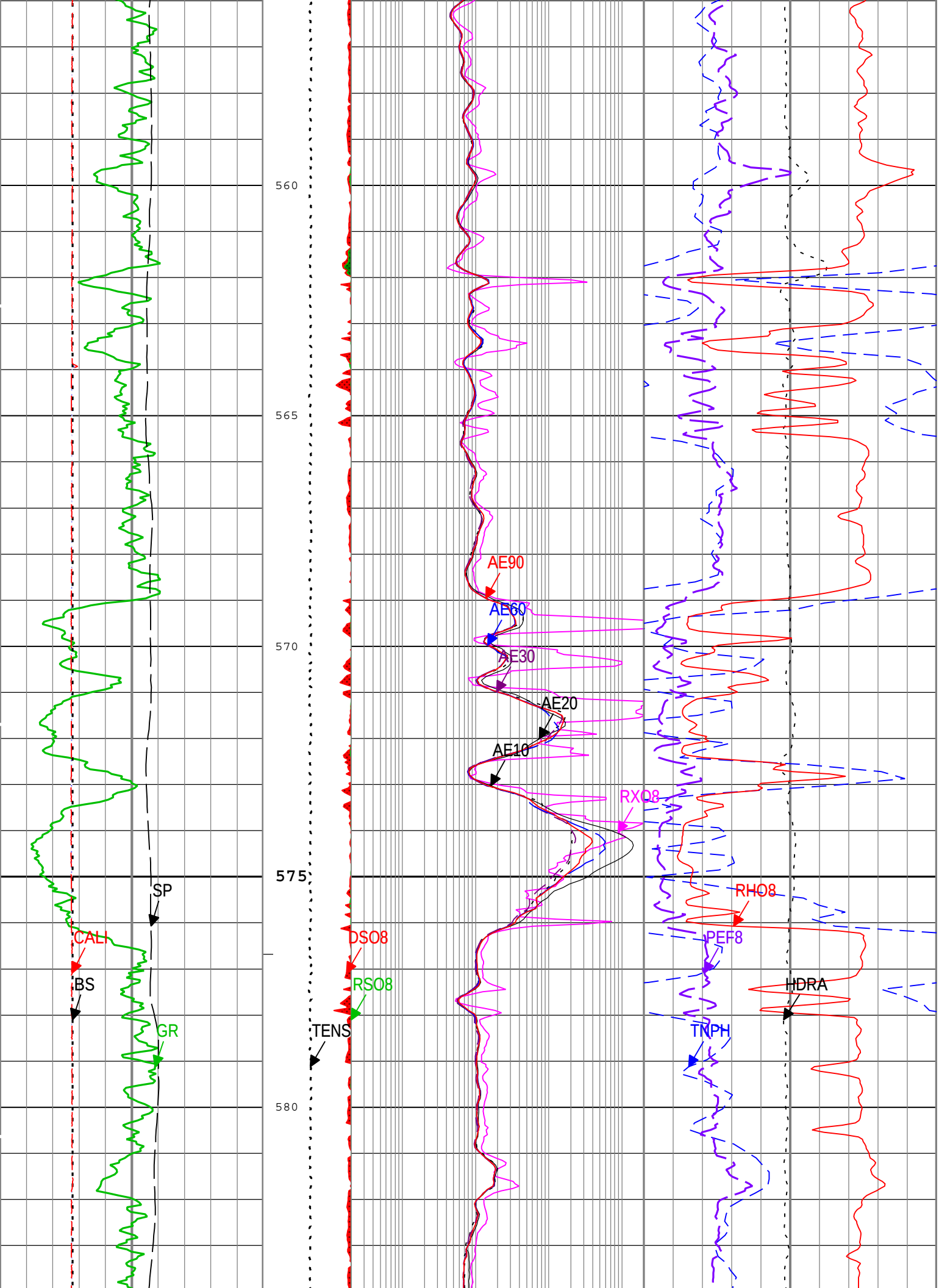
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH


530
535
540
545
550
555
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
RSO8
TENS
RHO8
PEF8
HDRA
TNPH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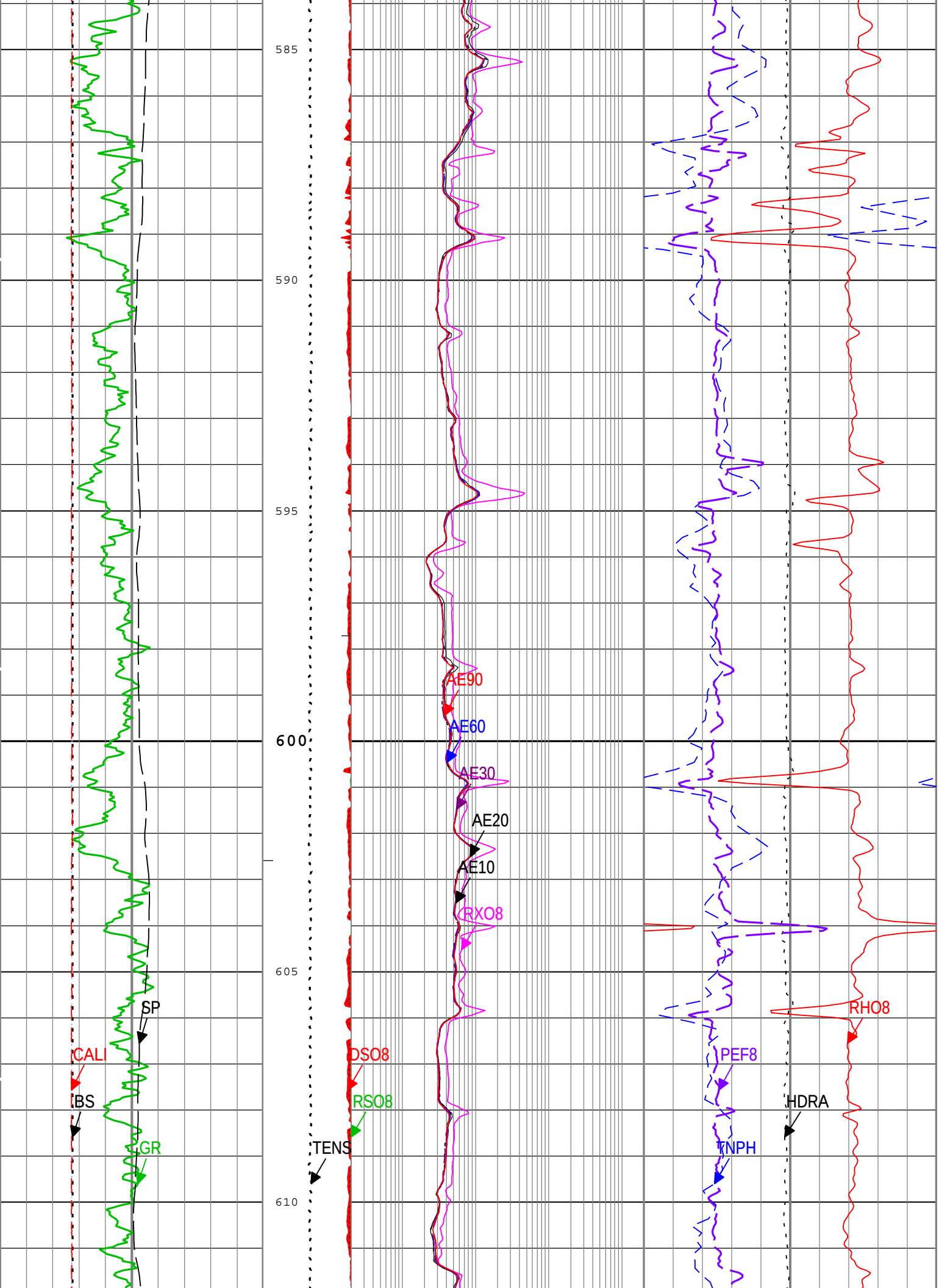
565
570
575
580
SP
CALI
BS
GR
TENS
DSO8
RSO8
AE90
AE60
AE30
AE20
AE10
RXO8
RHO8
PEF8
HDRA
TNPH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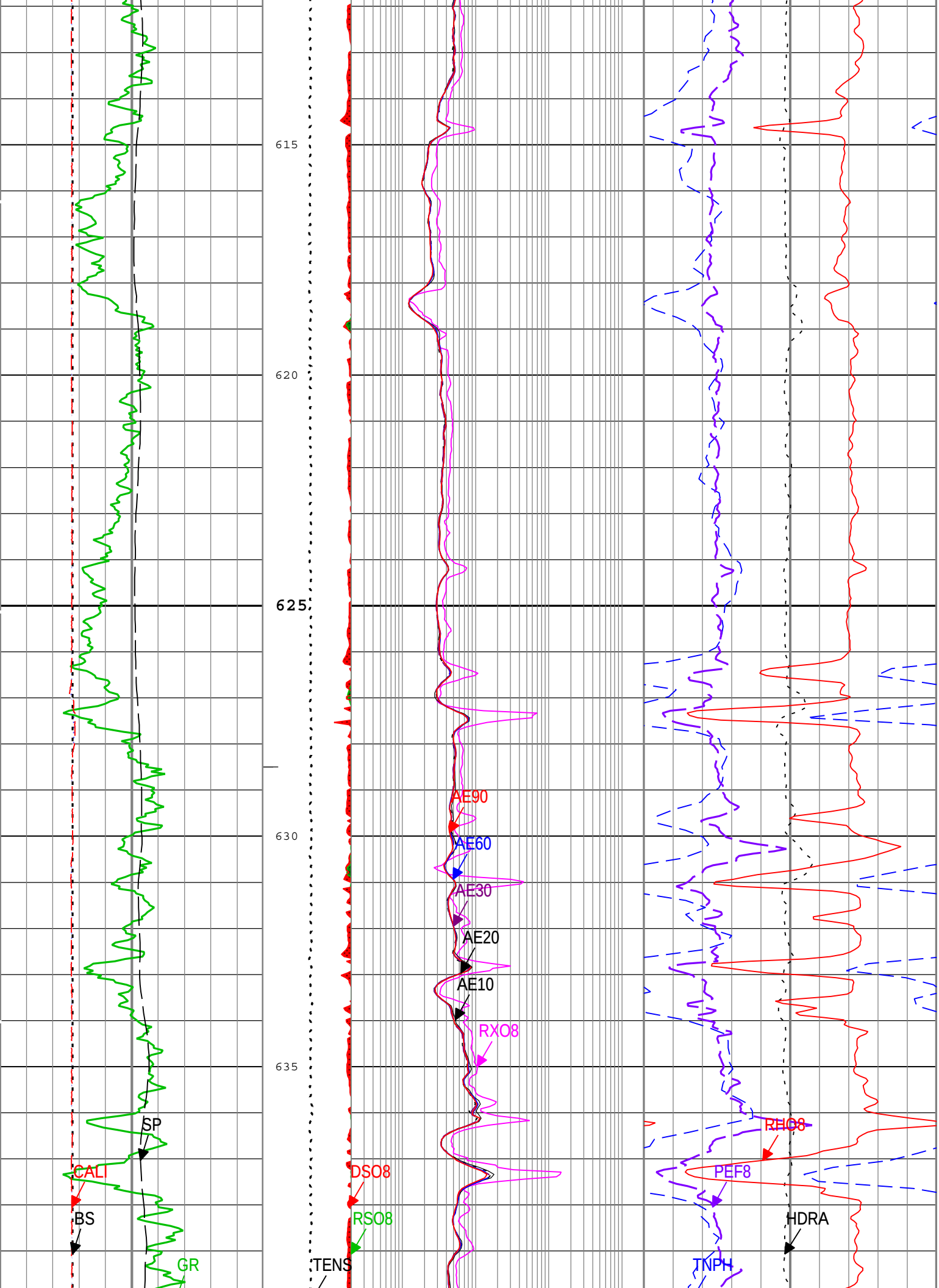
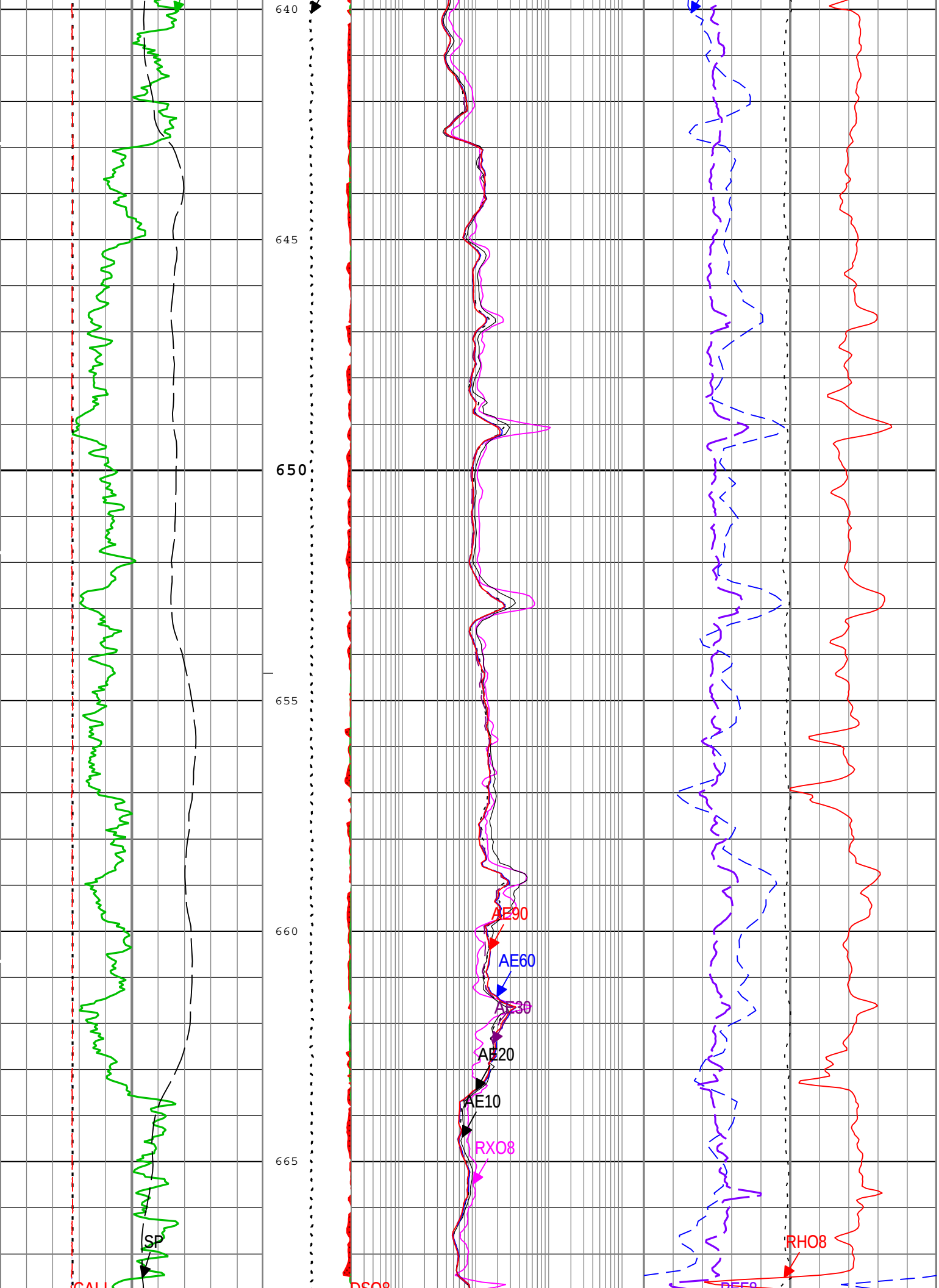
590
595
600
605
610
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
PEF8
TNPH
HDRA
RHO8


615
620
625
630
635
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH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665
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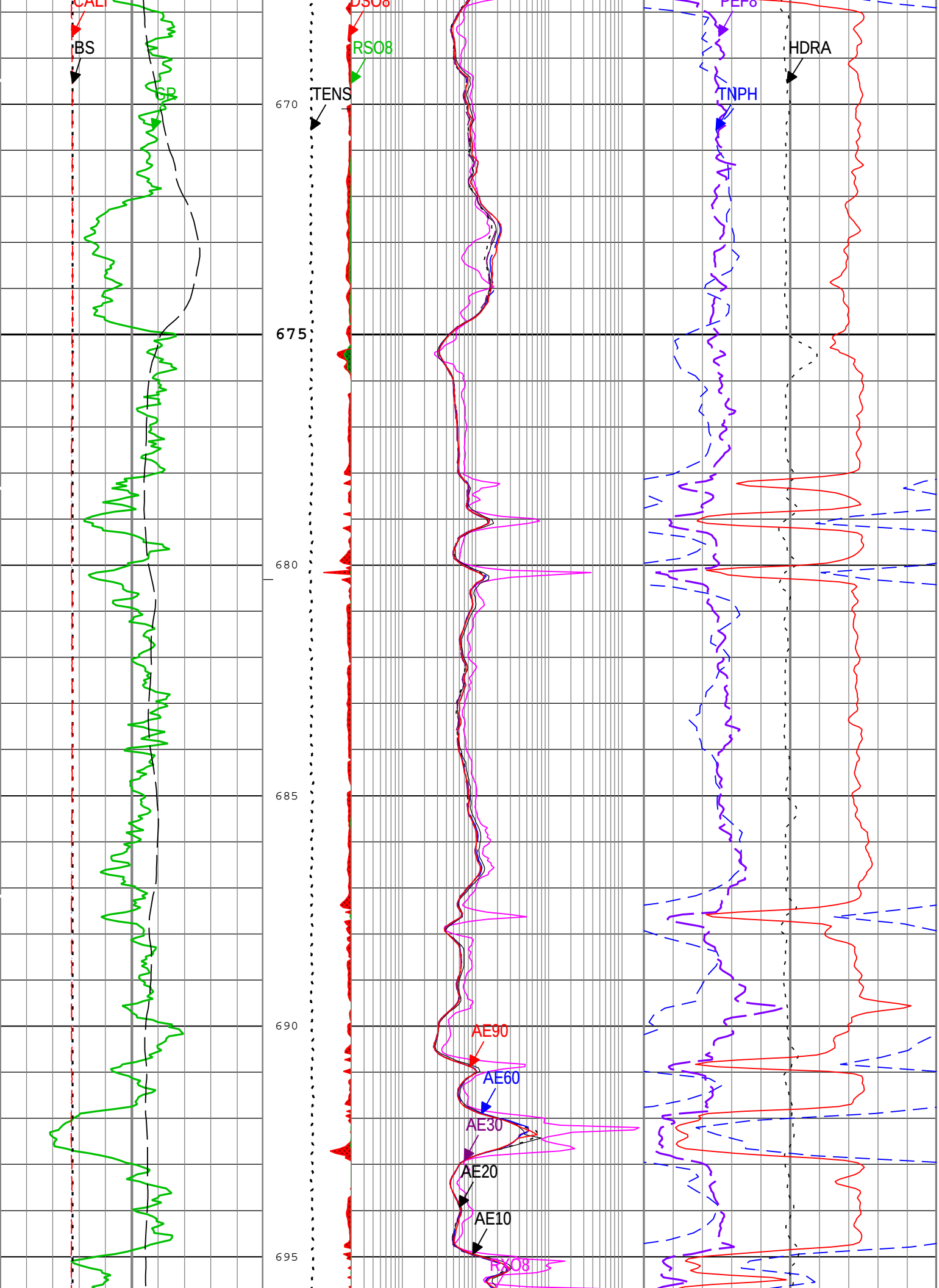
AE20
AE10
RXO8
SP
RHO8


CALI
BS
GR
TENS
DSO8
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PEF8
HDRA
TNPH
670
675
680
685
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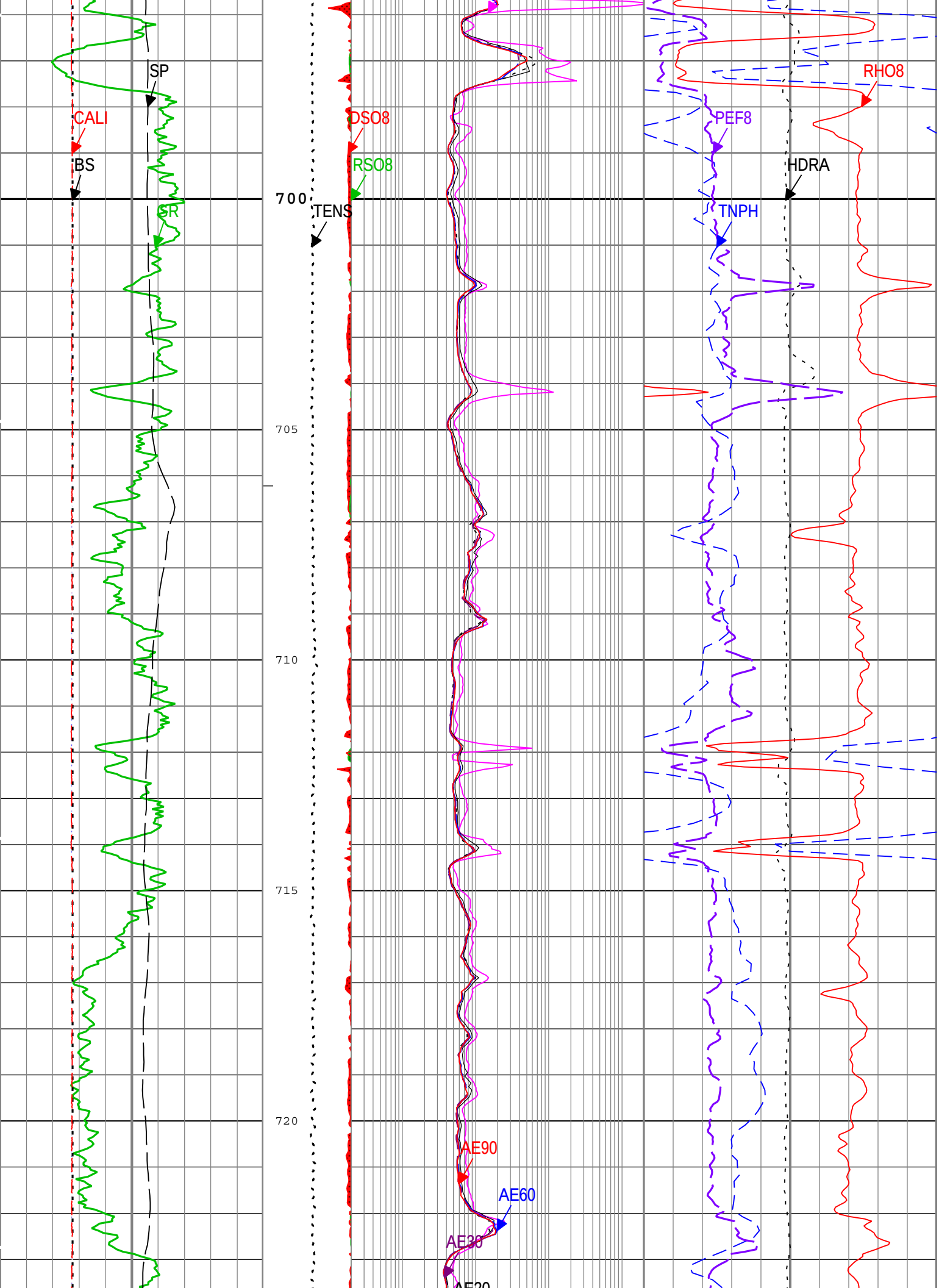
695
AE90
AE60
AE30
AE20
AE10
RXO8


SP
CALI
BS
SR
700
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RHO8
PEF8
HDRA
TNPH
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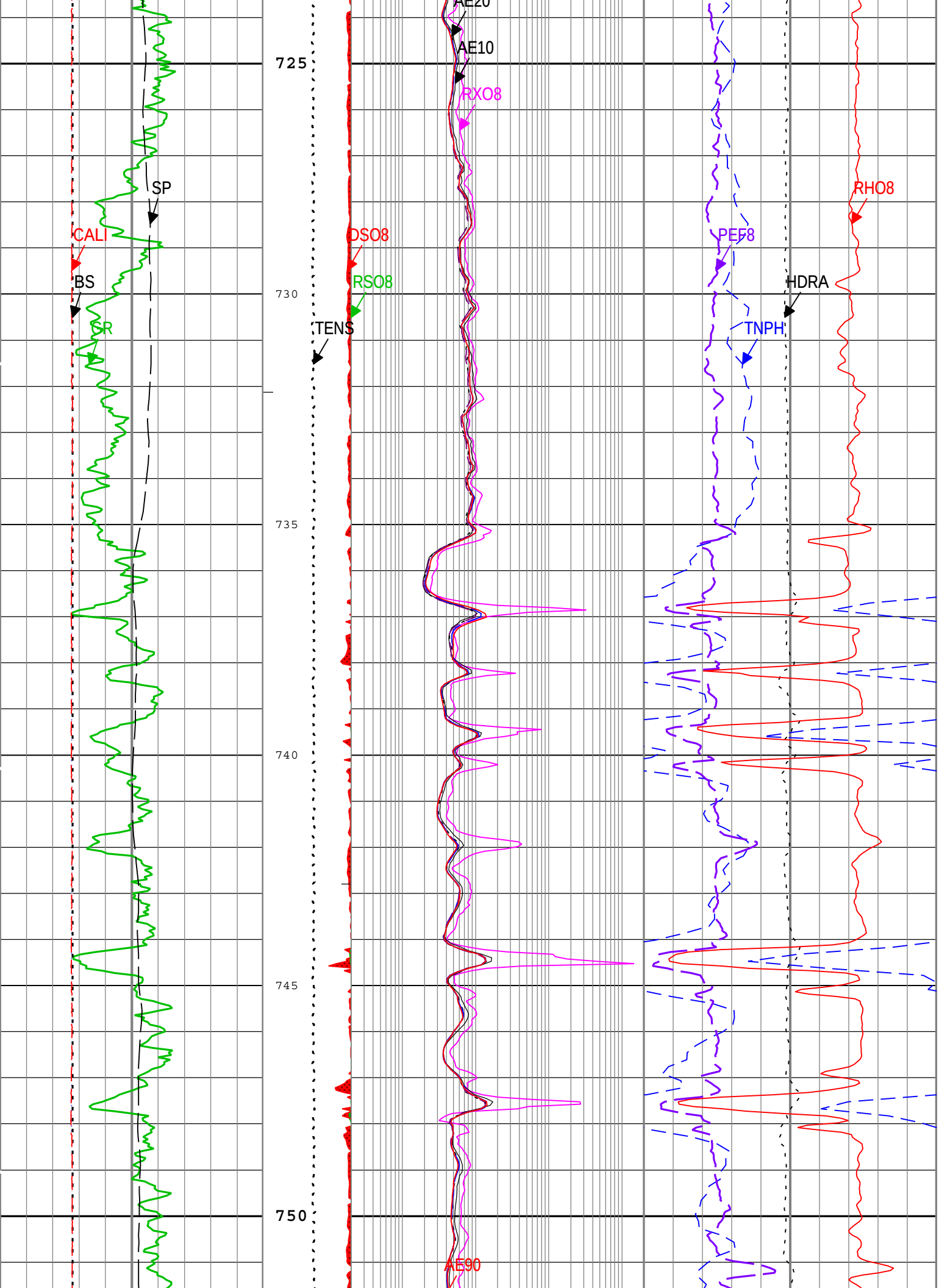
710
715
720
AE90
AE60
AE30
AE20


AE20
AE10
RXO8
725
SP
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PEF8
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GR
TENS
TNPH
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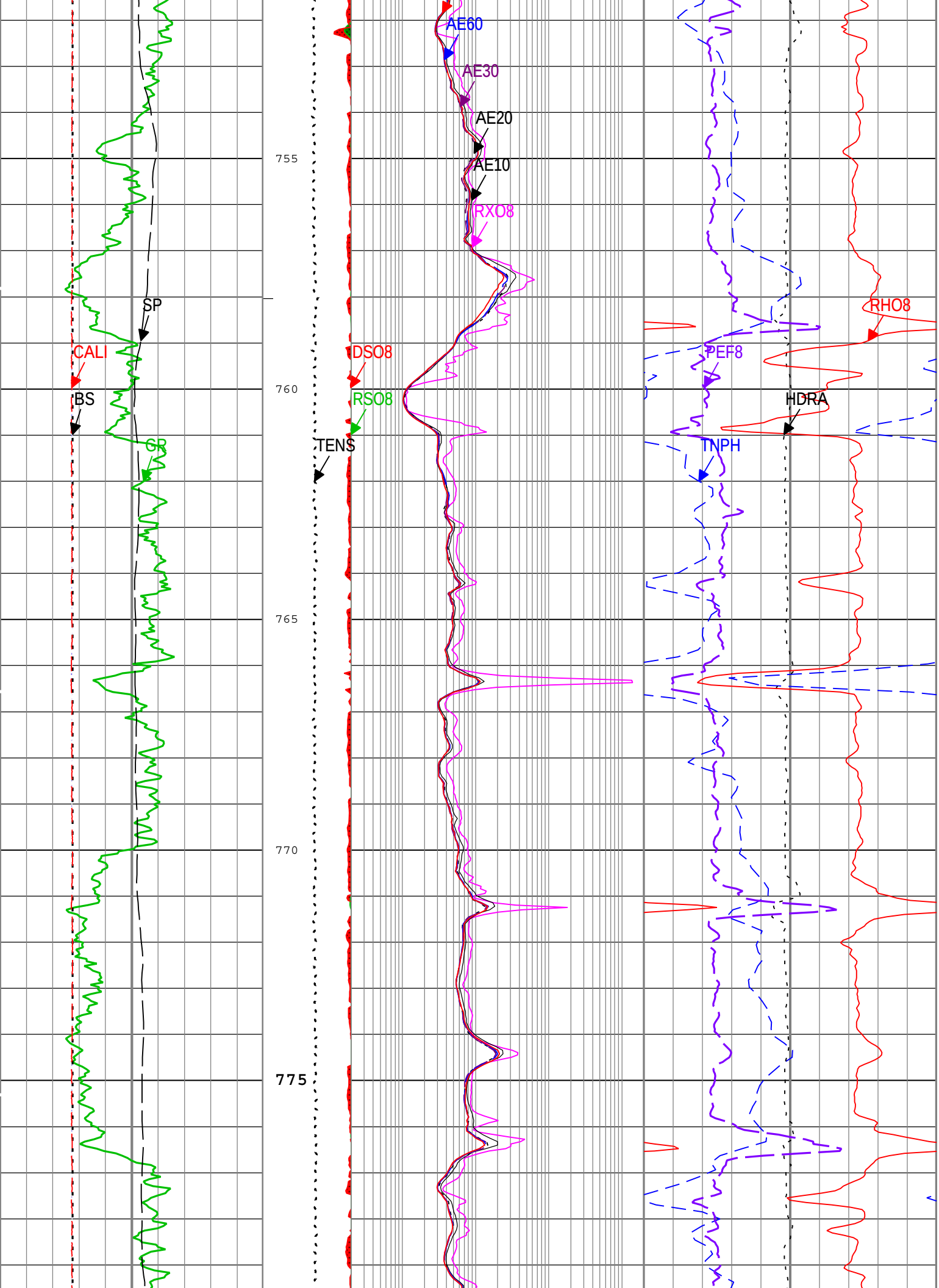
740
745
750
AE90


AE60
AE30
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AE10
RXO8
SP
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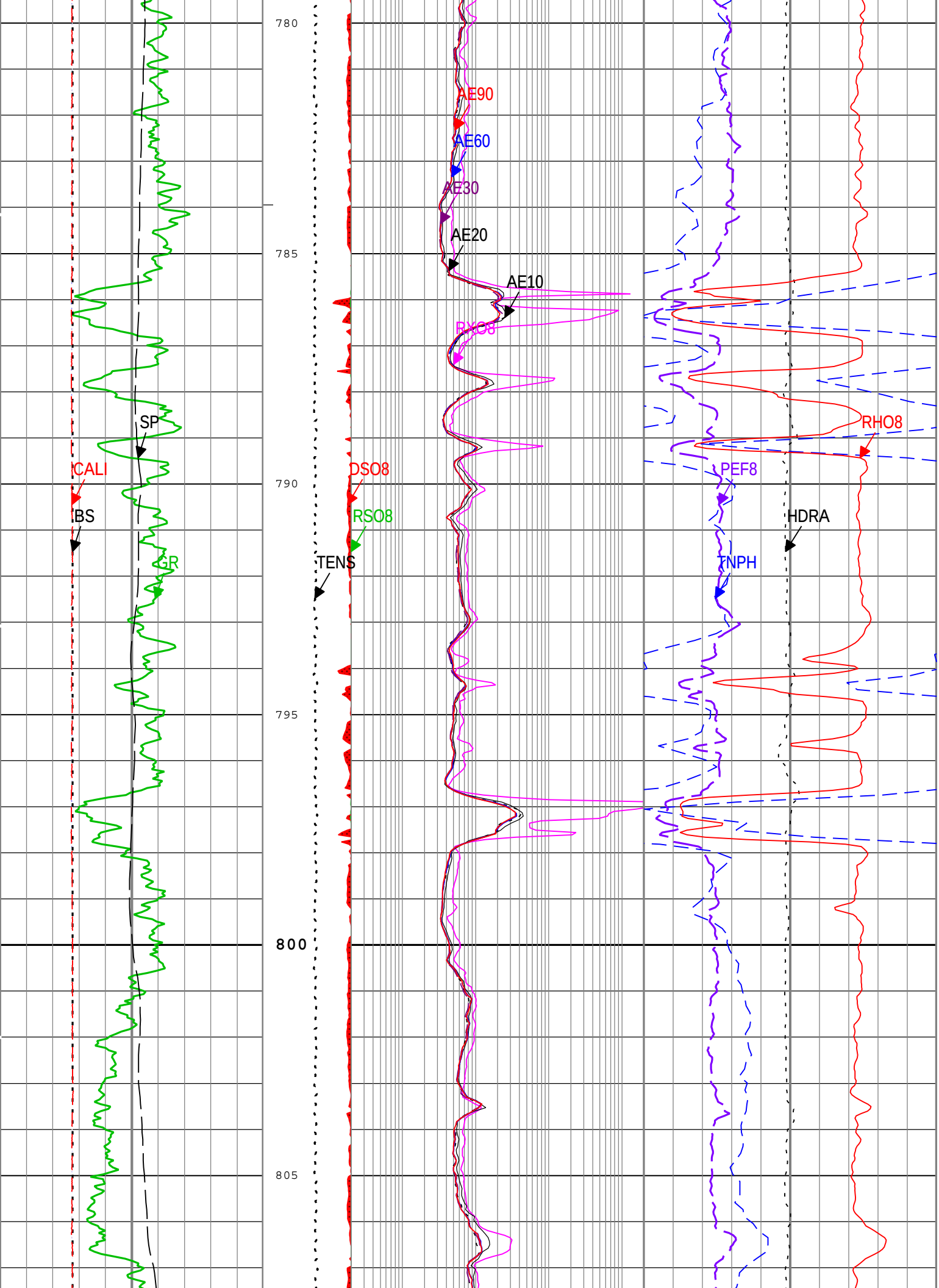
HDRA
TNPH
755
760
765
770
775


780
785
790
795
800
805
AE90
AE60
AE30
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BS
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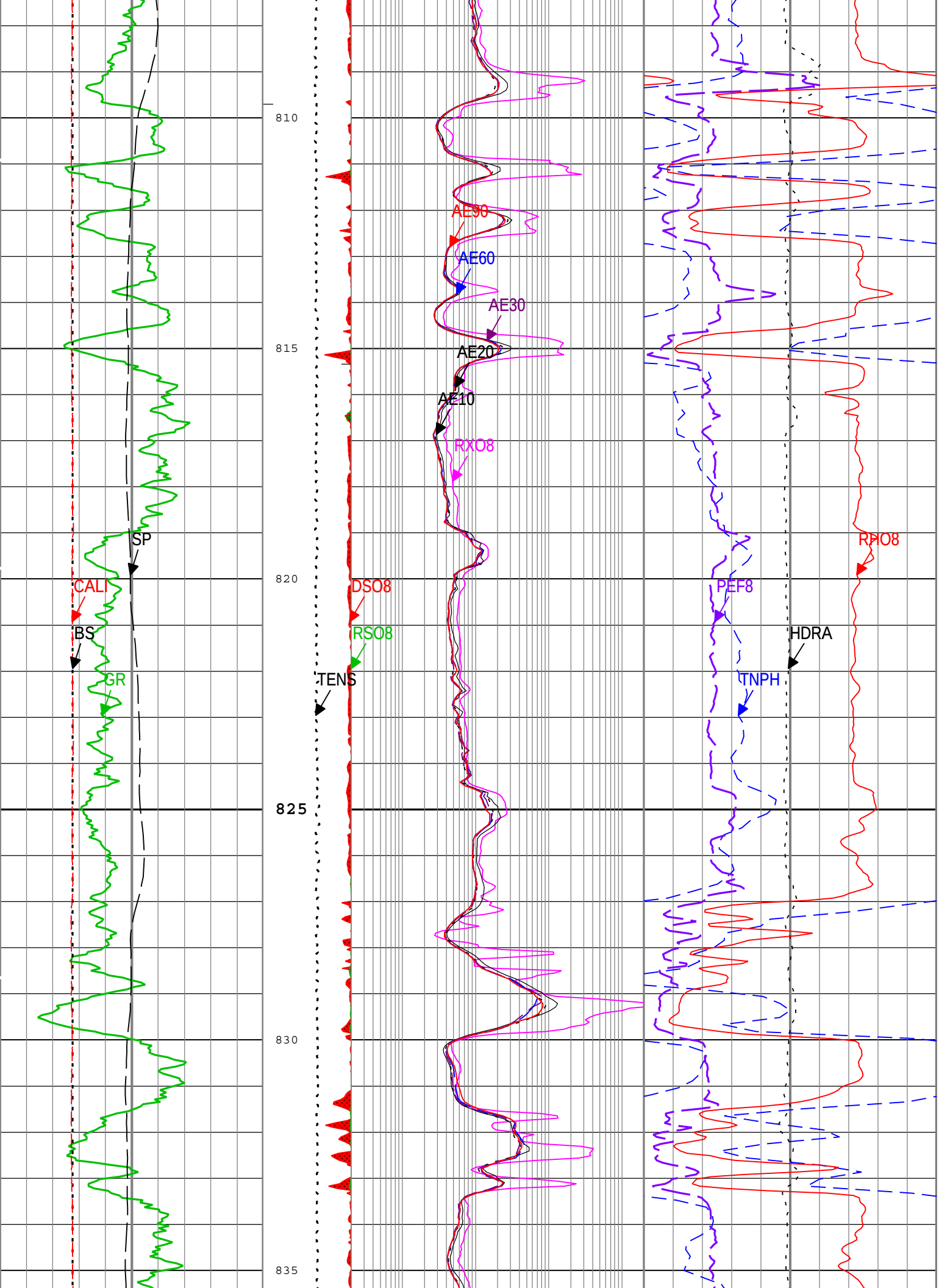
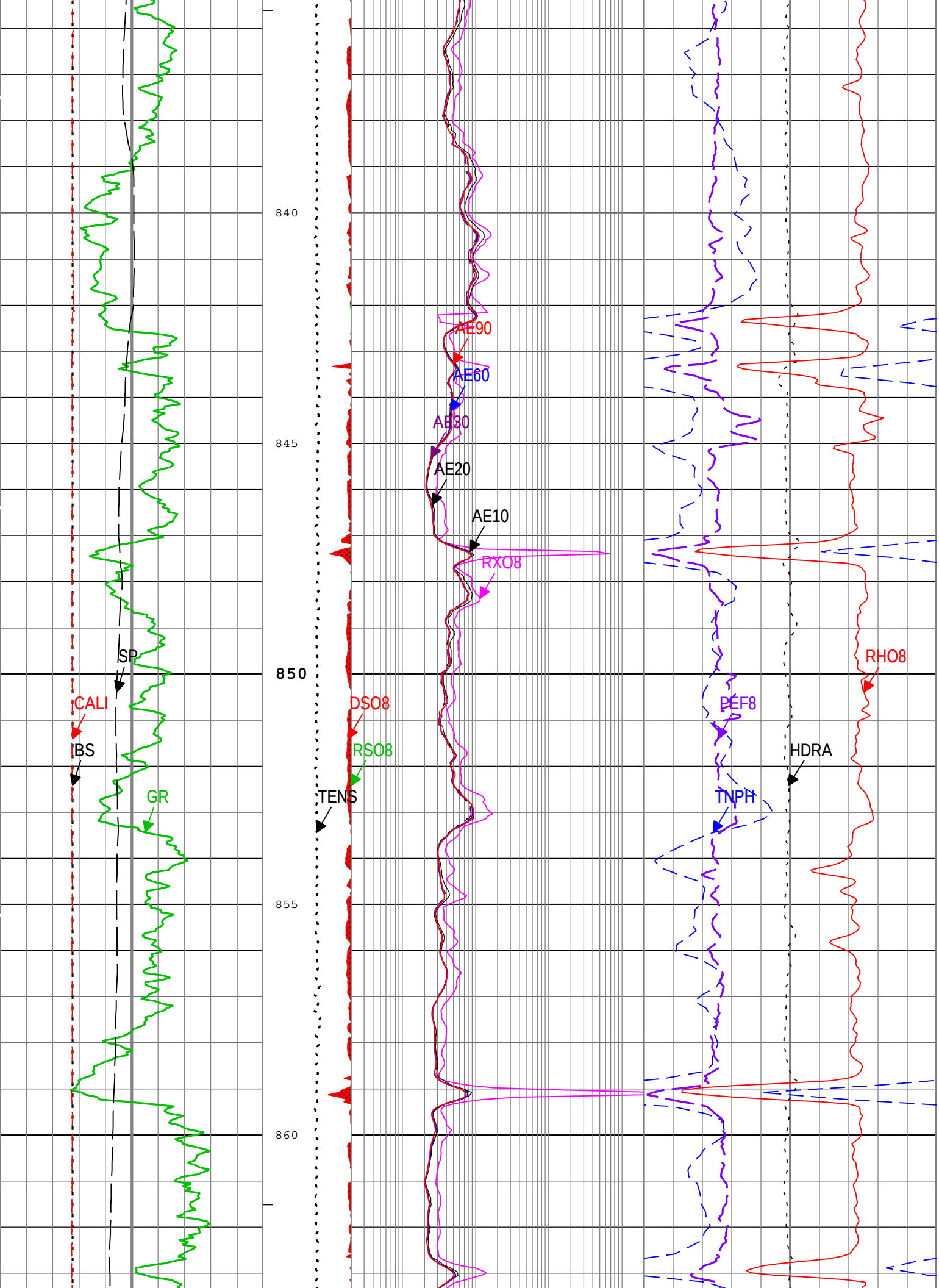
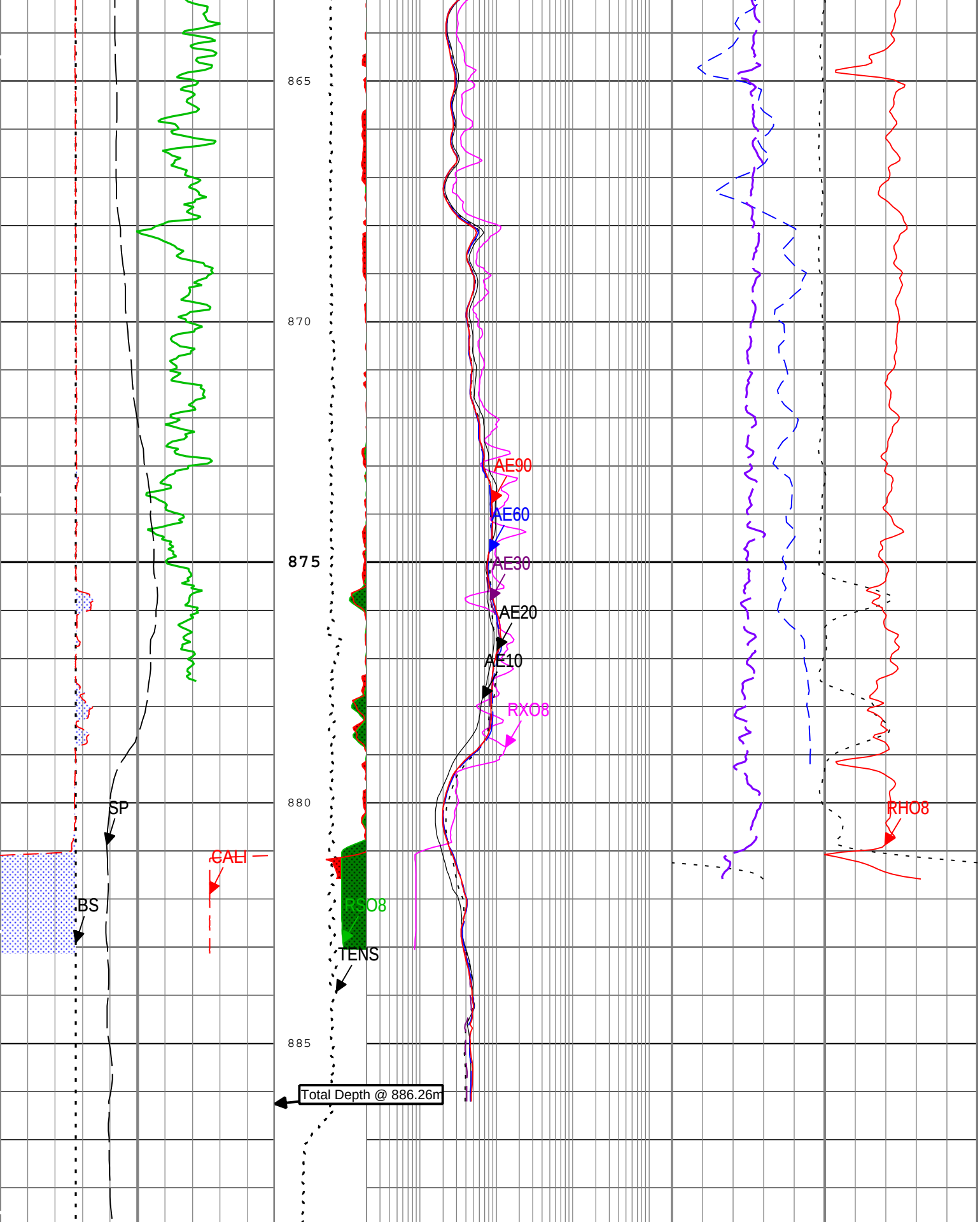
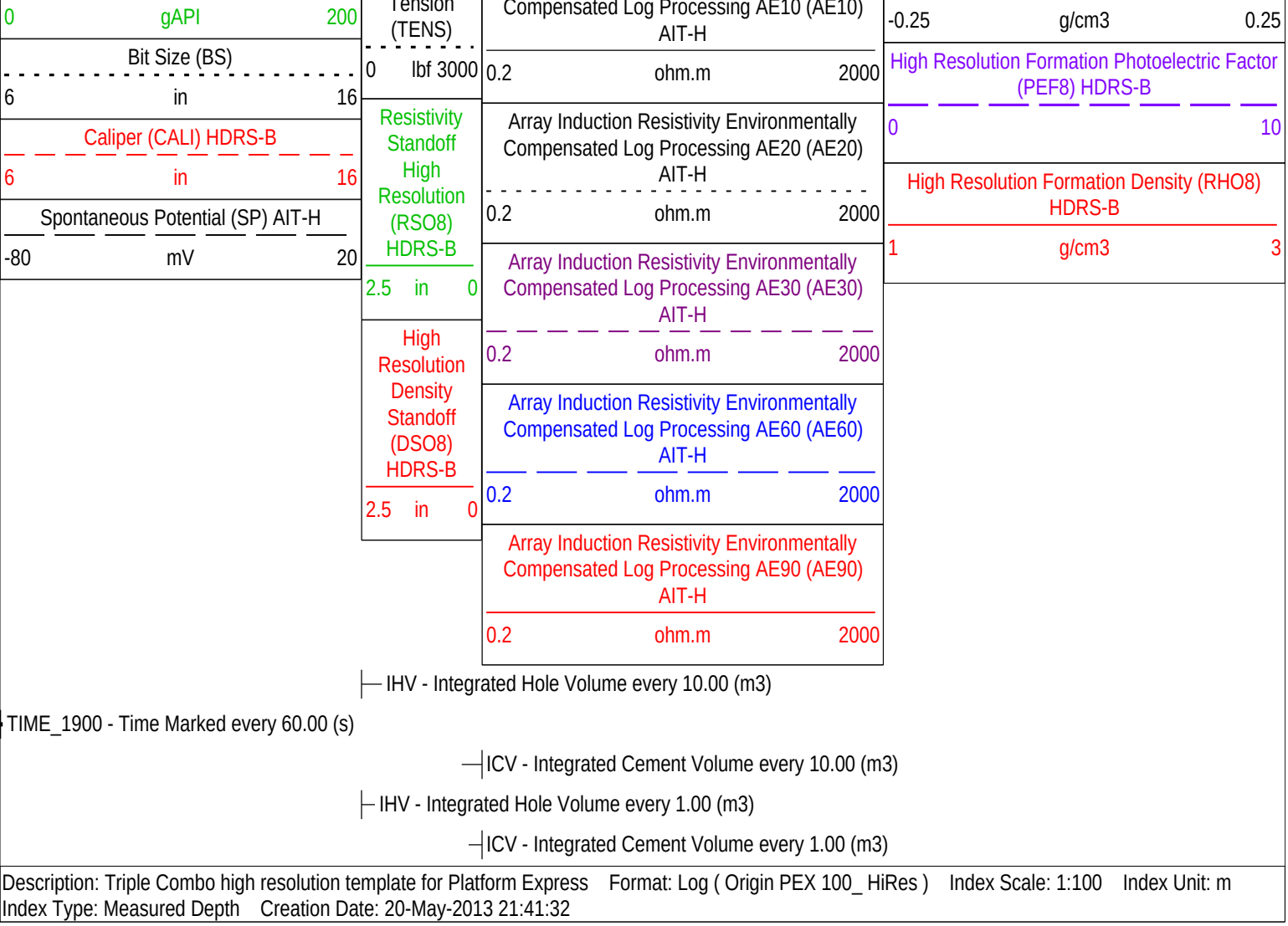
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH


810
815
820
825
830
835
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH


840
845
850
855
860
AE90
AE60
AE30
AE20
AE10
RXO8
SP
CALI
BS
GR
DSO8
RSO8
TENS
RHO8
PEF8
HDRA
TNPH



Mudcake (From CALI to BS)	DSOA	Invaded Formation Resistivity filtered at 8 inches (RXO8) HDRS-B	Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B
Washout (From BS to CALI)	RSOA	0.2 ohm.m 2000	0.45 m3/m3 -0.15
Gamma Ray (GR) HGNS-B	Cable Tension	Array Induction Resistivity Environmentally	Density Standoff Correction (HDRA) HDRS-B



Description: Triple Combo high resolution template for Platform Express Format: Log (Origin PEX 100_ HiRes) Index Scale: 1:100 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:32

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.625	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	44.42	degC
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	23063.2	ppm
BSCO	Borehole Salinity Correction Option	HGNS-B	Yes	
CALI_SHIFT	CALI Supplementary Offset	HDRS-B	0.16	in
CBLO	Casing Bottom (Logger)	WLSESSION	120.19	m
CDEN	Cement Density	HGNS-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	KCL Polymer	
DHC	Density Hole Correction	HDRS-B	Bit Size	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	3.8	m
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	313	m
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in

FSAL	Formation Salinity	Borehole	0	ppm
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	
GGRD	Geothermal Gradient	Borehole	18.23	degC/km
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HSCO	Hole Size Correction Option	HGNS-B	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MFST	Mud Filtrate Sample Temperature	Borehole	23.8	degC
MST	Mud Sample Temperature	Borehole	23.8	degC
MWCO	Mud Weight Correction Option	HGNS-B	Yes	
NPRM	HRDD Nuclear Processing Mode	HDRS-B	High Resolution	
PDAT	Permanent Datum	WLSESSION	GL	
PTCO	Pressure Temperature Correction Option	HGNS-B	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.2	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.27	ohm.m
SHT	Surface Hole Temperature	Borehole	23.8	degC
SOCN	Standoff Distance	HGNS-B	0	in
SOCO	Standoff Correction Option	HGNS-B	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/m
TD	Total Measured Depth	Borehole	886.26	m

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)
BS	12.25	5.03	127
BS	8.75	127	888.75

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BRD_TYPE	HRGD Board Type	HDRS-B	WITHOUT_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
STSO_HRDD	Temperature Source for the Density Algorithm	HDRS-B	Decaytime algorithm	

AIT-PEX-GPIT

Main StdRes 1:200

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
IHV	Integrated Hole Volume	GCSE_UP_PASS	29.74	m3
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	10.7	m3

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20121221-3.1.9755.1574

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	3.1.9755.0
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections	3.1.9755.0

Tool Elements	Description	Software Version	Firmware Version
AHIS	Array Induction Sonde - H	3.1.9755.1574	
HRGD-H	Ultra Resolution Gamma Ray Density Device - 150 - H	3.1.9755.0	3.0

HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC	3.1.9755.0	2.0
HRCC-B	HILT High-Resolution Control Cartridge, 125 degC	3.1.9755.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
AIT-PEX-GPIT	Main[3]:Up	Up	20.71 m	888.74 m	20-May-2013 6:16:31 PM	20-May-2013 7:57:09 PM	0.00 m	true

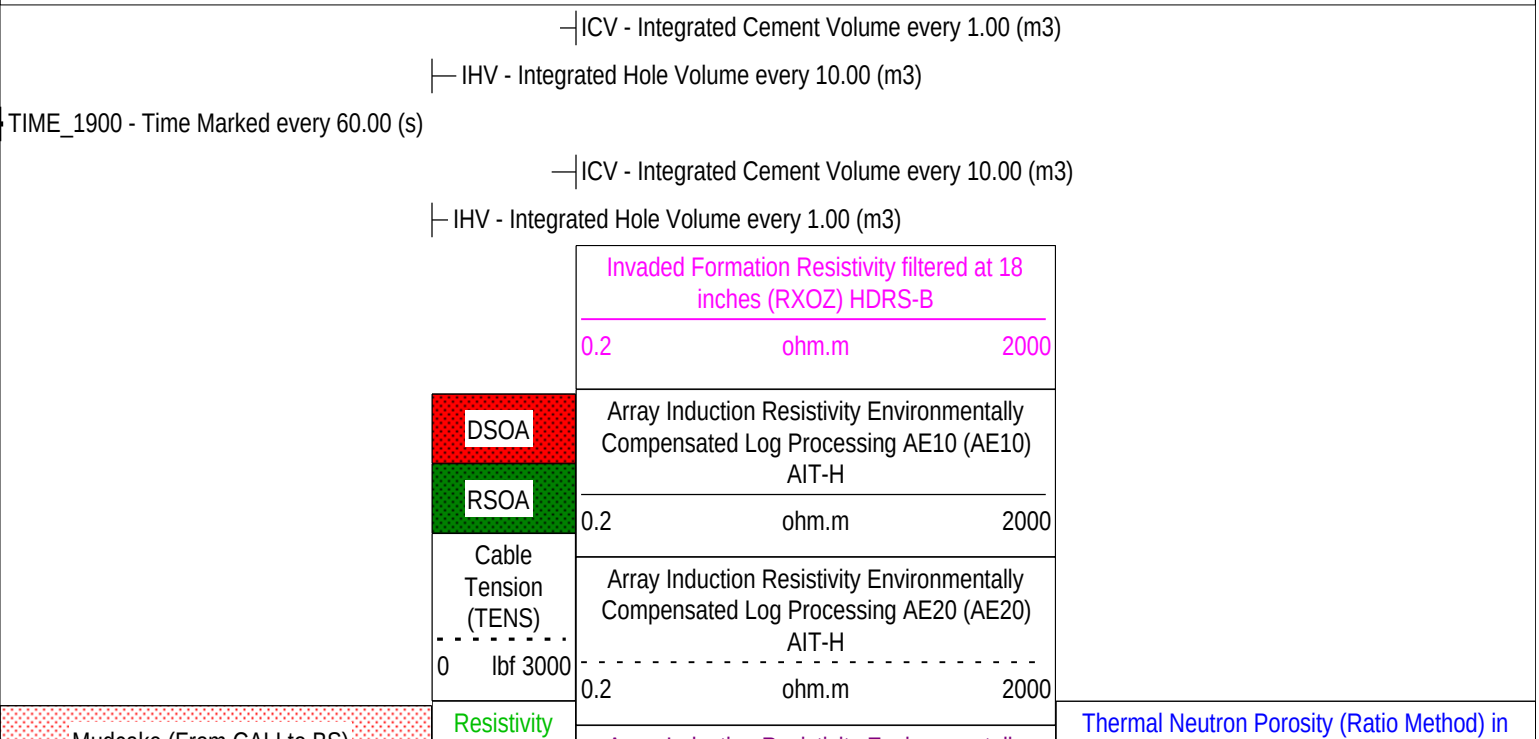
All depths are referenced to toolstring zero

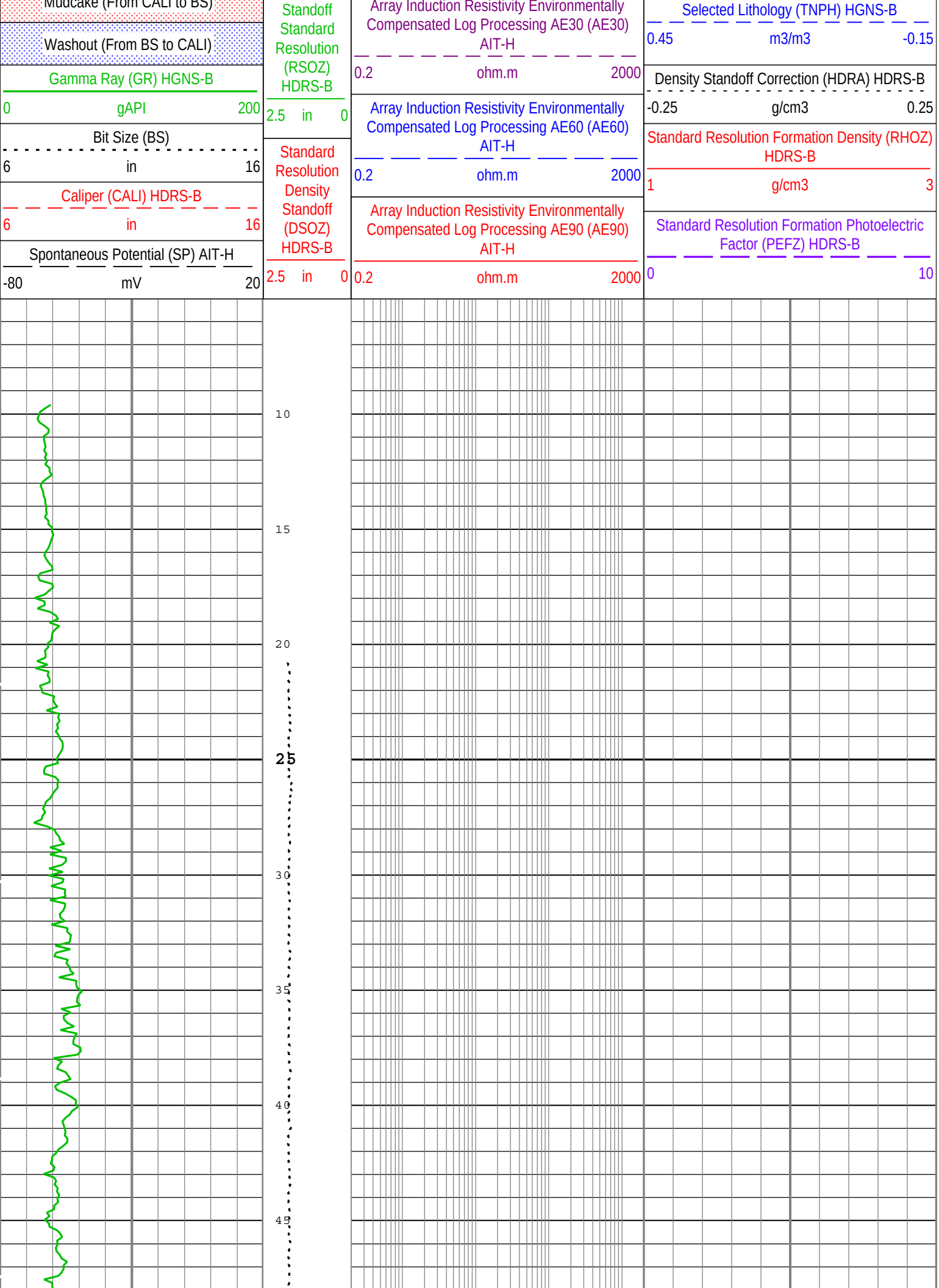
Log

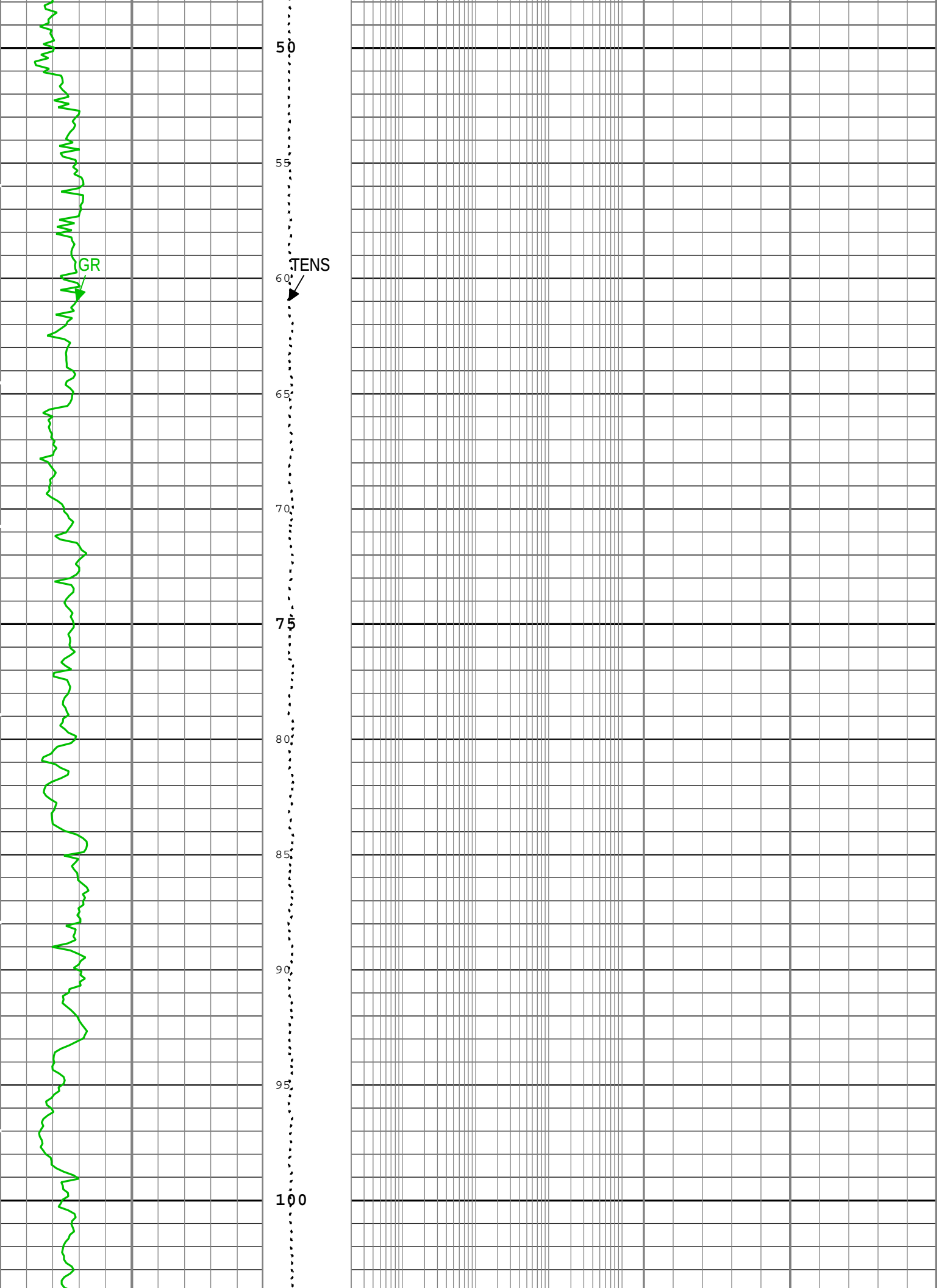
AIT-PEX-GPIT: Main[3]:Up

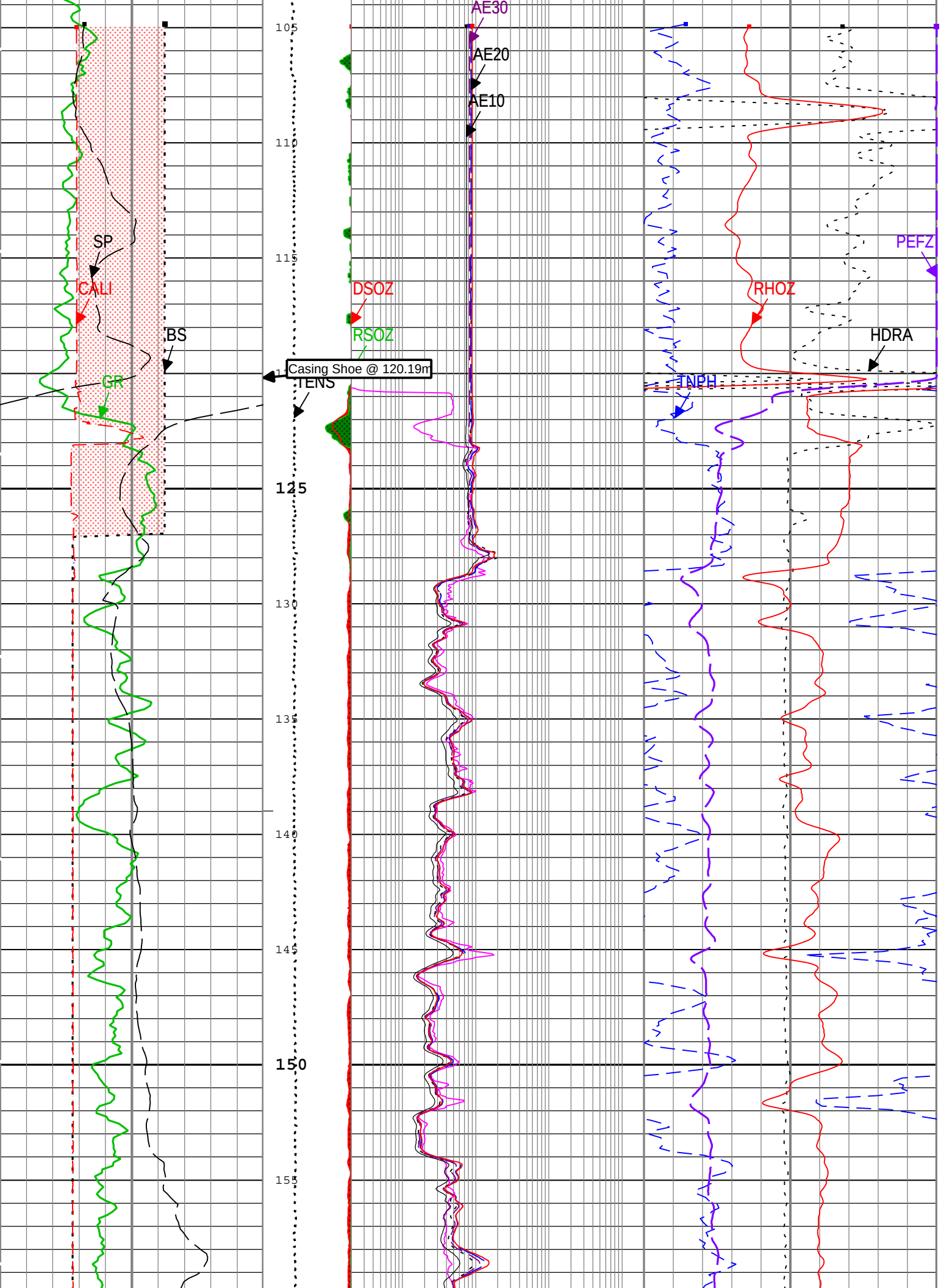
Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 200_StdRes) Index Scale: 1:200 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:40

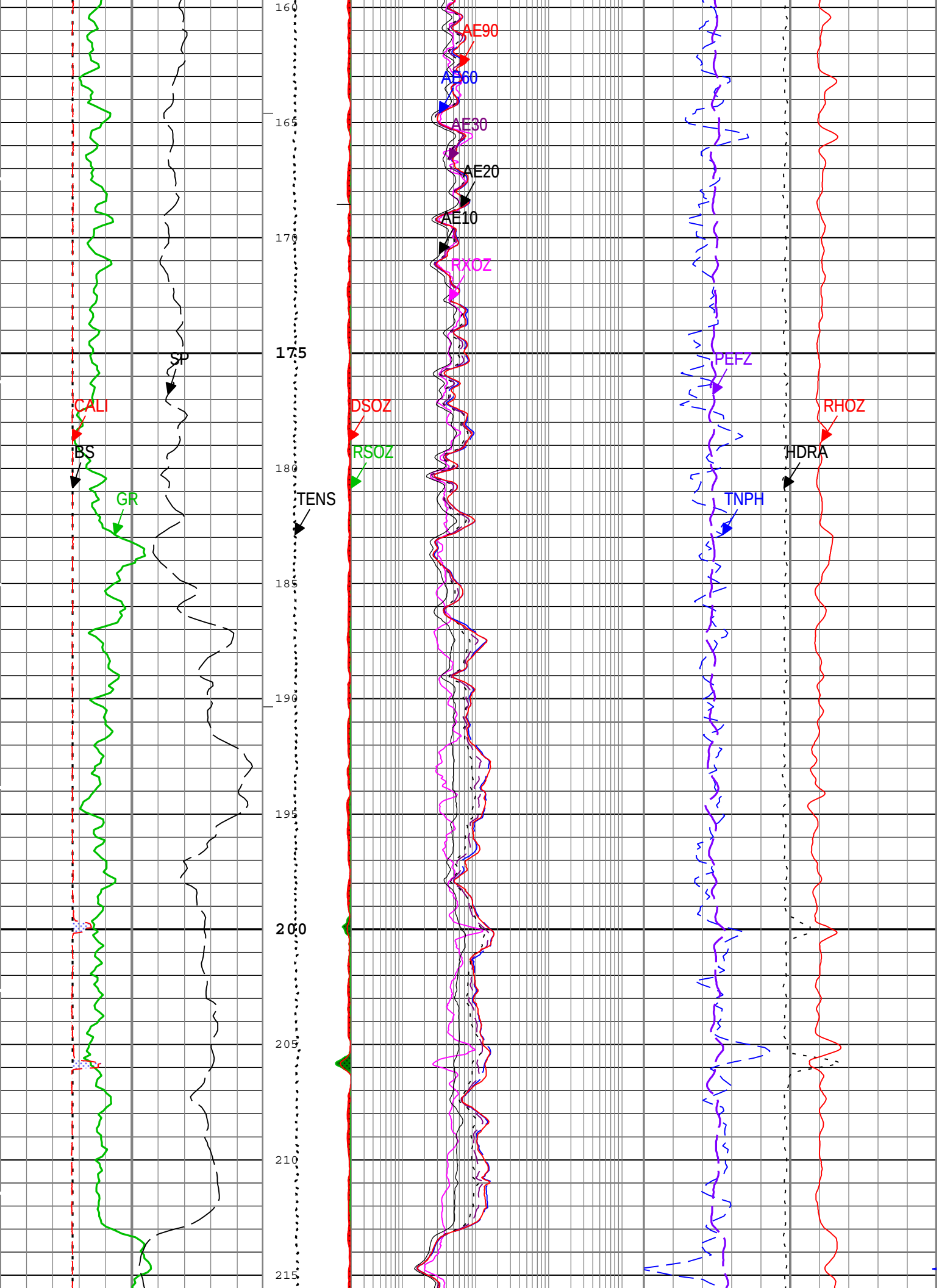
Channel	Source	Sampling
AE10	AIT-H:AHIS:AHIS	3in
AE20	AIT-H:AHIS:AHIS	3in
AE30	AIT-H:AHIS:AHIS	3in
AE60	AIT-H:AHIS:AHIS	3in
AE90	AIT-H:AHIS:AHIS	3in
BS	Borehole	6in
CALI	HDRS-B:HRCC-B:HRCC-B	1in
DSOZ	HDRS-B:HRMS-B:HRGD-H	2in
GR	HGNS-B:HGNS-B:HGNS-B	6in
HDRA	HDRS-B:HRMS-B:HRGD-H	2in
ICV	Borehole	6in
IHV	Borehole	6in
PEFZ	HDRS-B:HRMS-B:HRGD-H	2in
RHOZ	HDRS-B:HRMS-B:HRGD-H	2in
RSOZ	HDRS-B:HRMS-B:HRGD-H	2in
RXOZ	HDRS-B:HRMS-B:HRGD-H	2in
SP	AIT-H:AHIS:AHIS	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in
TNPH	HGNS-B:HGNS-B:HGNS-B	6in

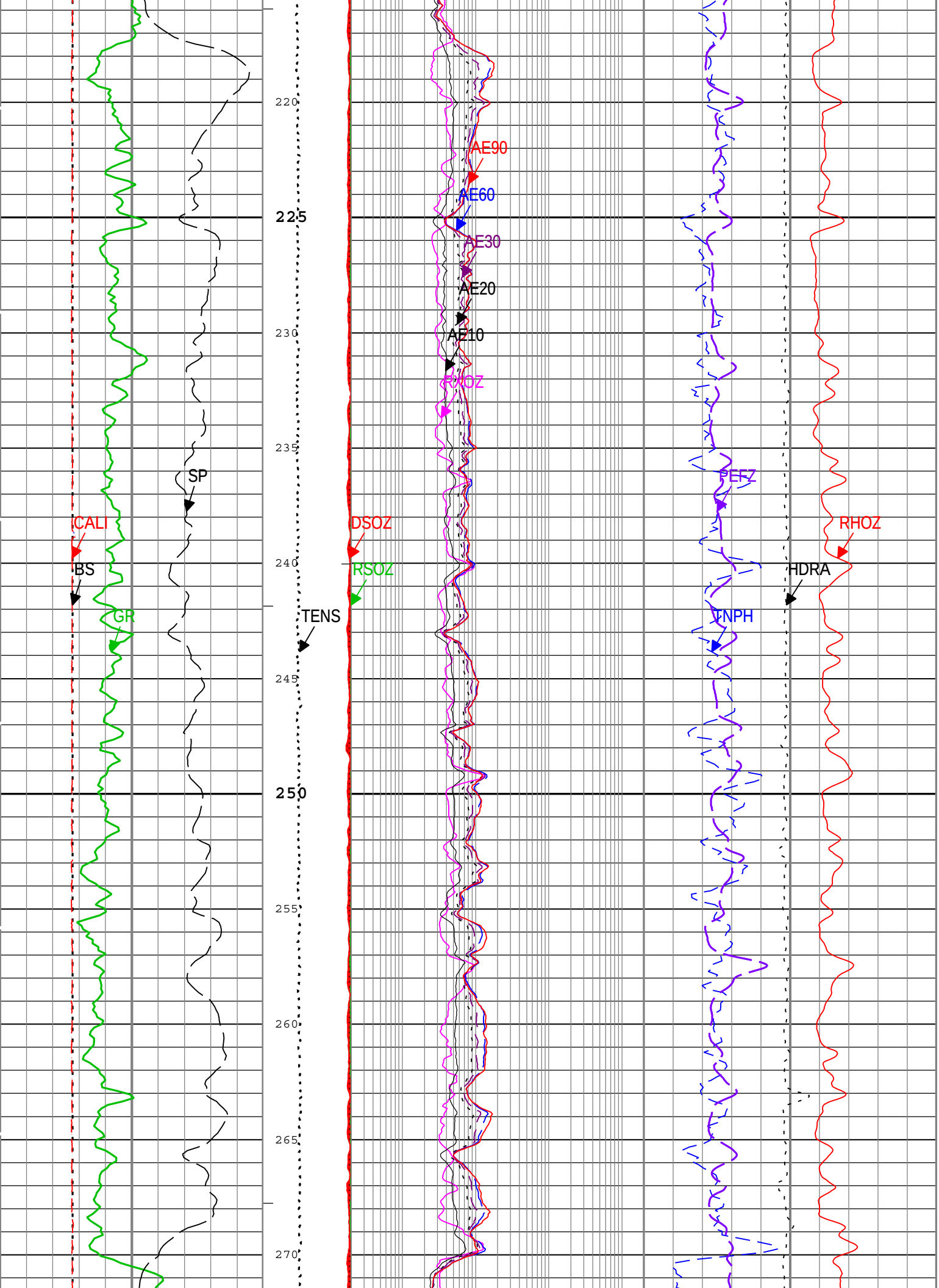


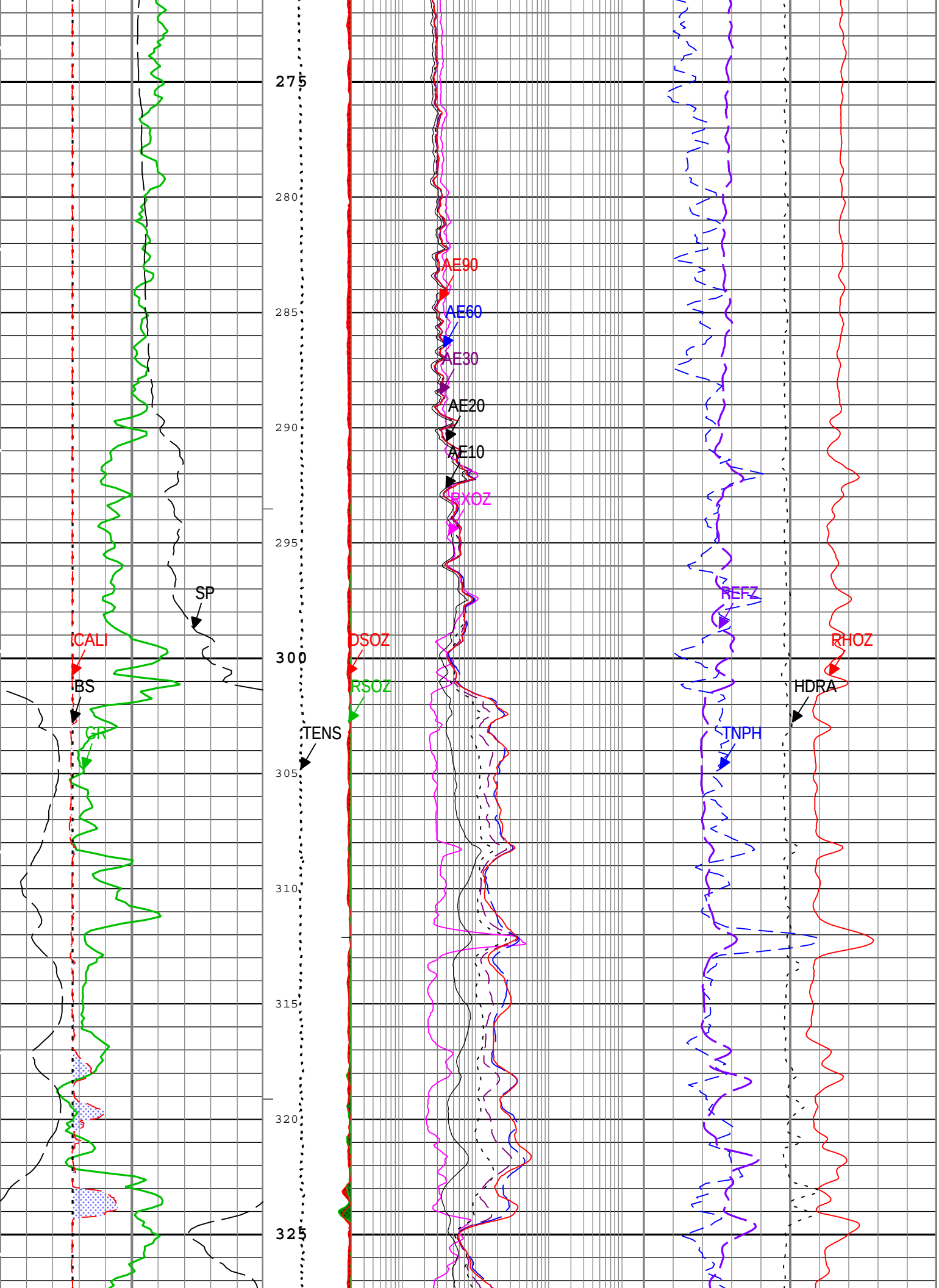

Mudcake (From CALI to BS)
Washout (From BS to CALI)
Gamma Ray (GR) HGNS-B
0
gAPI
200
Bit Size (BS)
6
in
16
Caliper (CALI) HDRS-B
6
in
16
Spontaneous Potential (SP) AIT-H
-80
mV
20
Standoff Standard Resolution (RSOZ) HDRS-B
2.5
in
0
Standard Resolution Density Standoff (DSOZ) HDRS-B
2.5
in
0
Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H
0.2
ohm.m
2000
Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H
0.2
ohm.m
2000
Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H
0.2
ohm.m
2000
Selected Lithology (TNPH) HGNS-B
0.45
m3/m3
-0.15
Density Standoff Correction (HDRA) HDRS-B
-0.25
g/cm3
0.25
Standard Resolution Formation Density (RHOZ) HDRS-B
1
g/cm3
3
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B
0
10
10
15
20
25
30
35
40
45

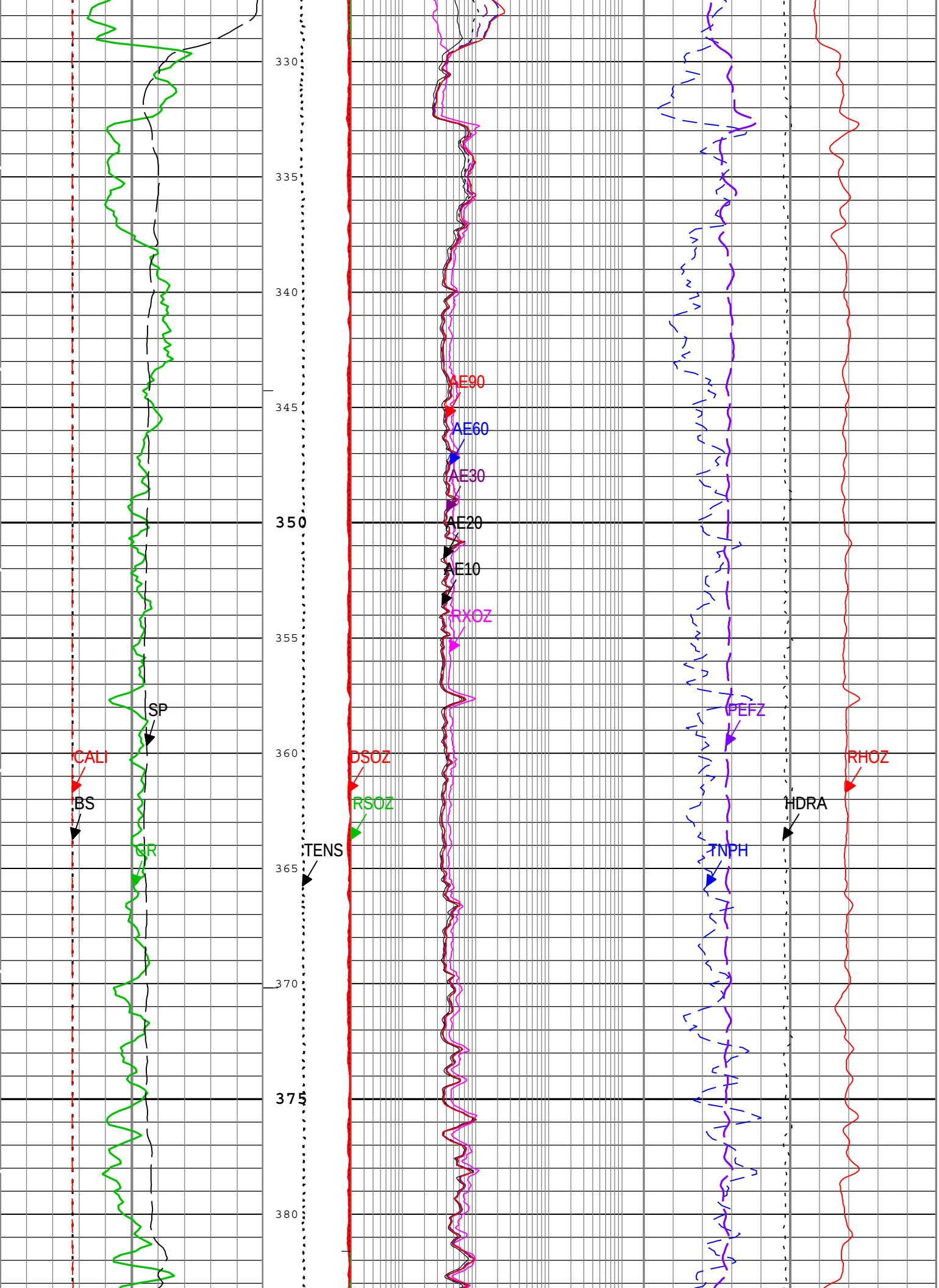

GR
TENS
50
55
60
65
70
75
80
85
90
95
100

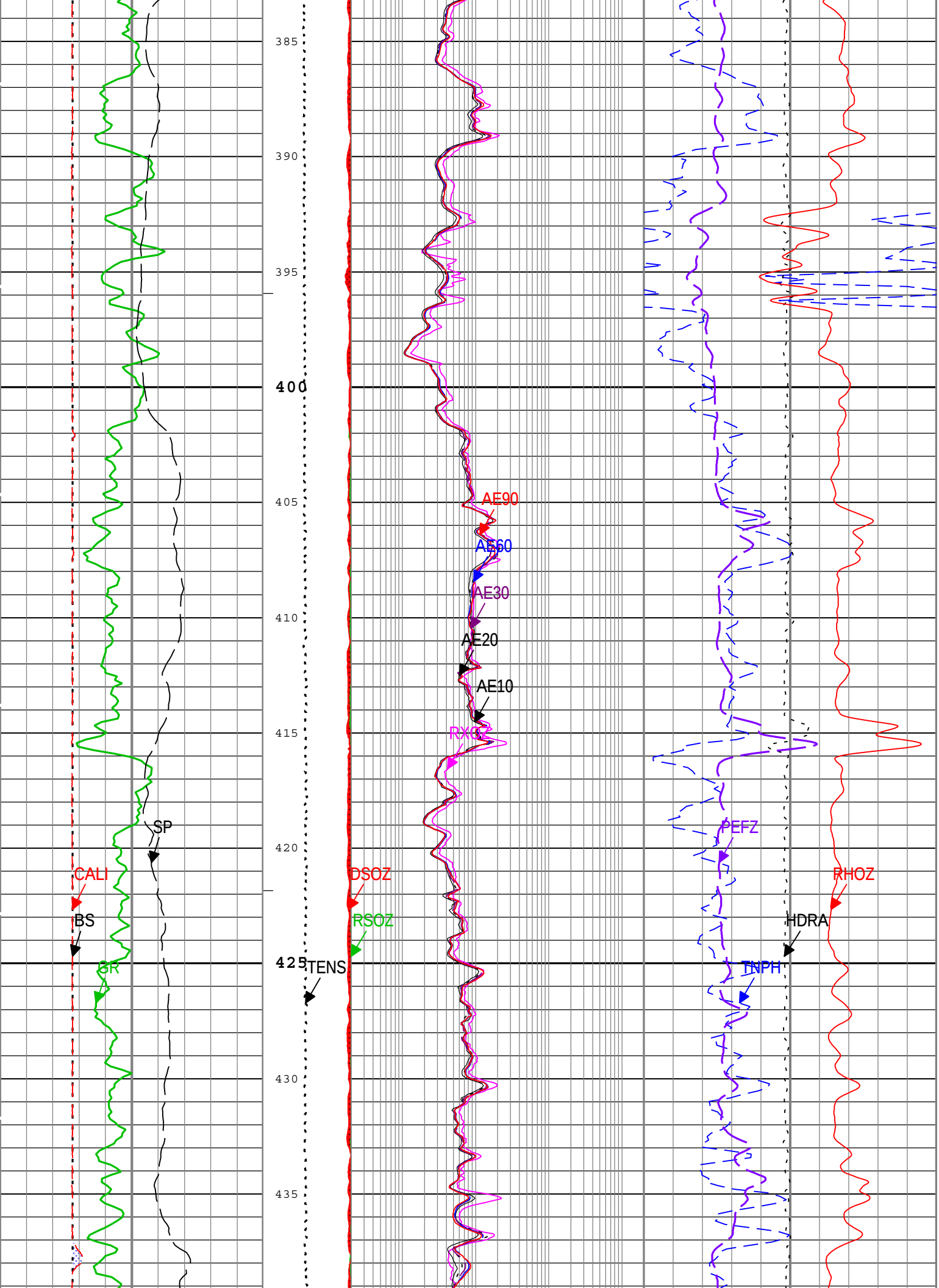

AE30
AE20
AE10
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
Casing Shoe @ 120.19m
PEFZ
RHOZ
HDRA
TNPH
105
110
115
120
125
130
135
140
145
150
155

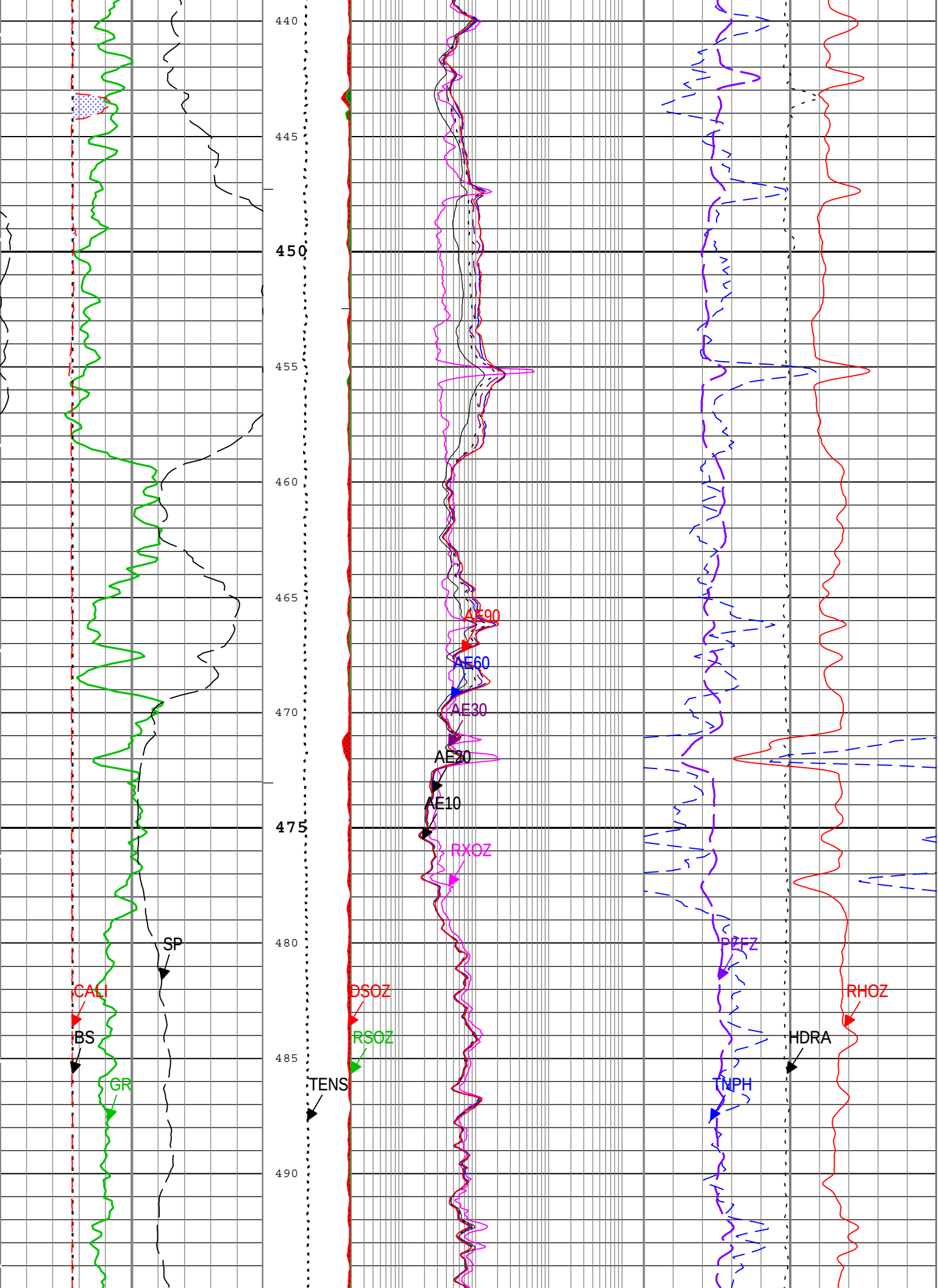

AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
TENS
DSOZ
RSOZ
PEFZ
TNPH
RHOZ
HDRA
160
165
170
175
180
185
190
195
200
205
210
215

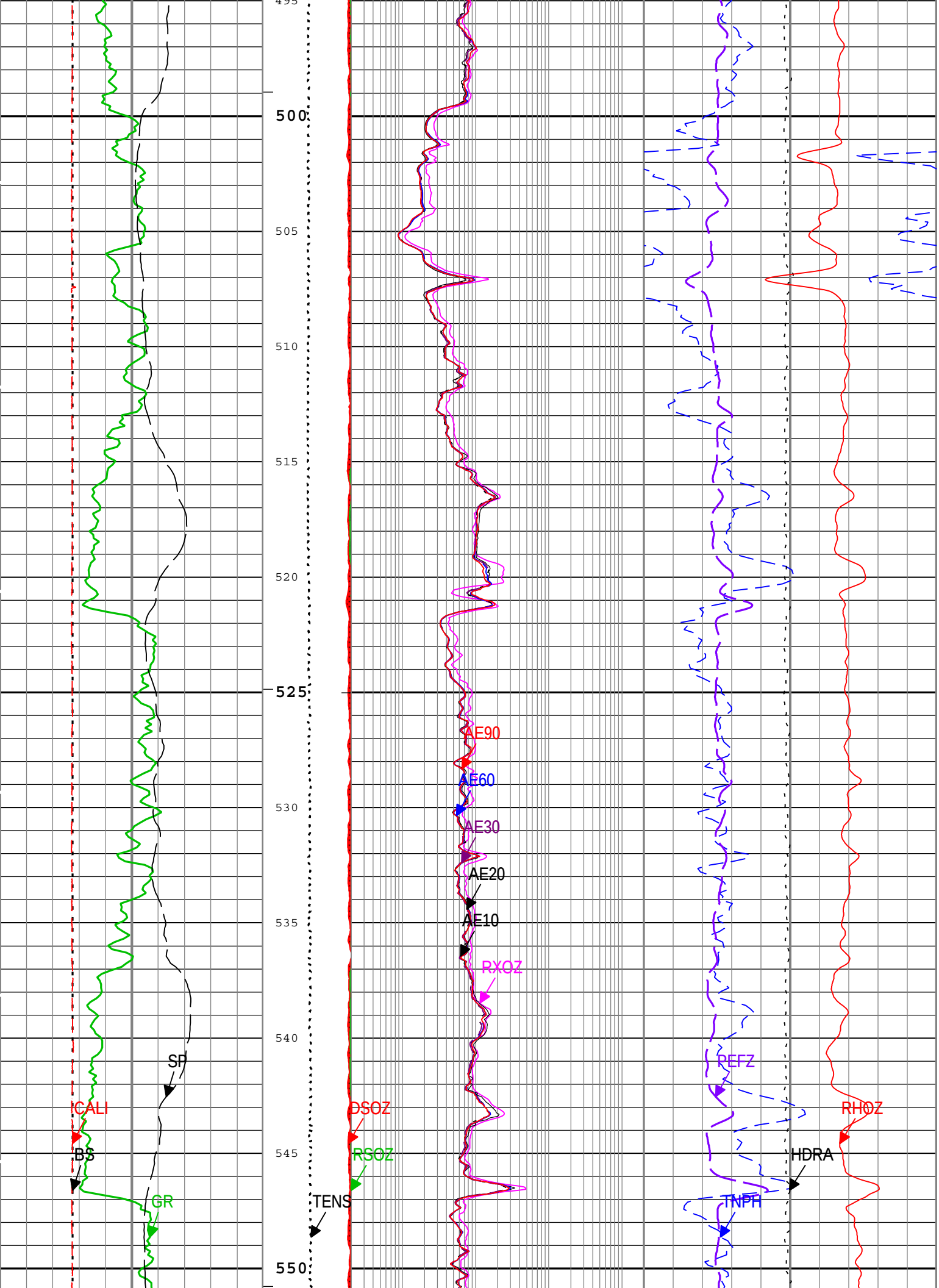

220
225
230
235
240
245
250
255
260
265
270
AE90
AE60
AE30
AE20
AE10
RHOZ
PEFZ
SP
CALI
DSOZ
RHOZ
BS
RSOZ
HDRA
GR
TENS
TNPH

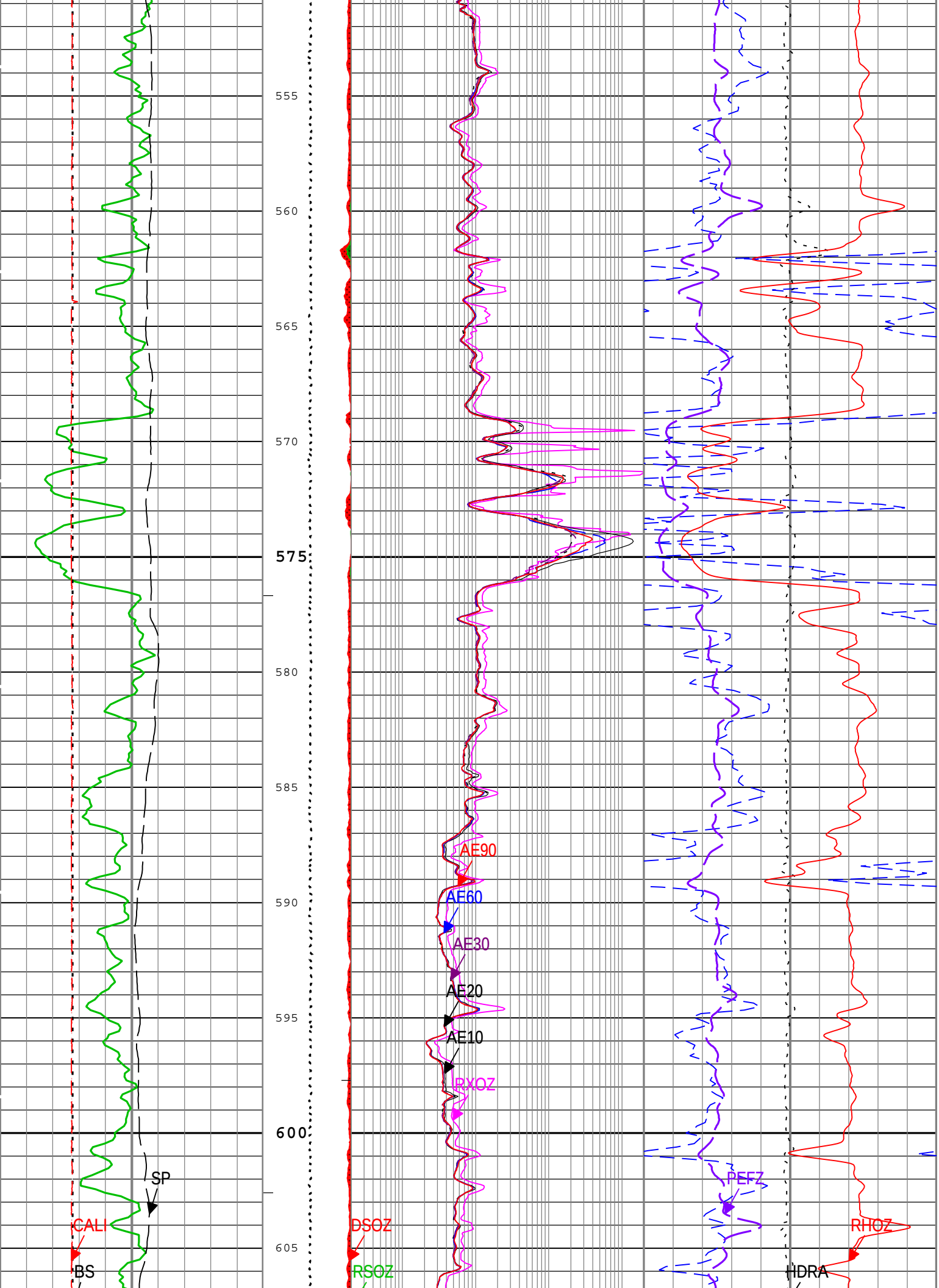

275
280
285
290
295
300
305
310
315
320
325
AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
TENS
DSOZ
RSOZ
REFZ
RHOZ
HDRA
TNPH

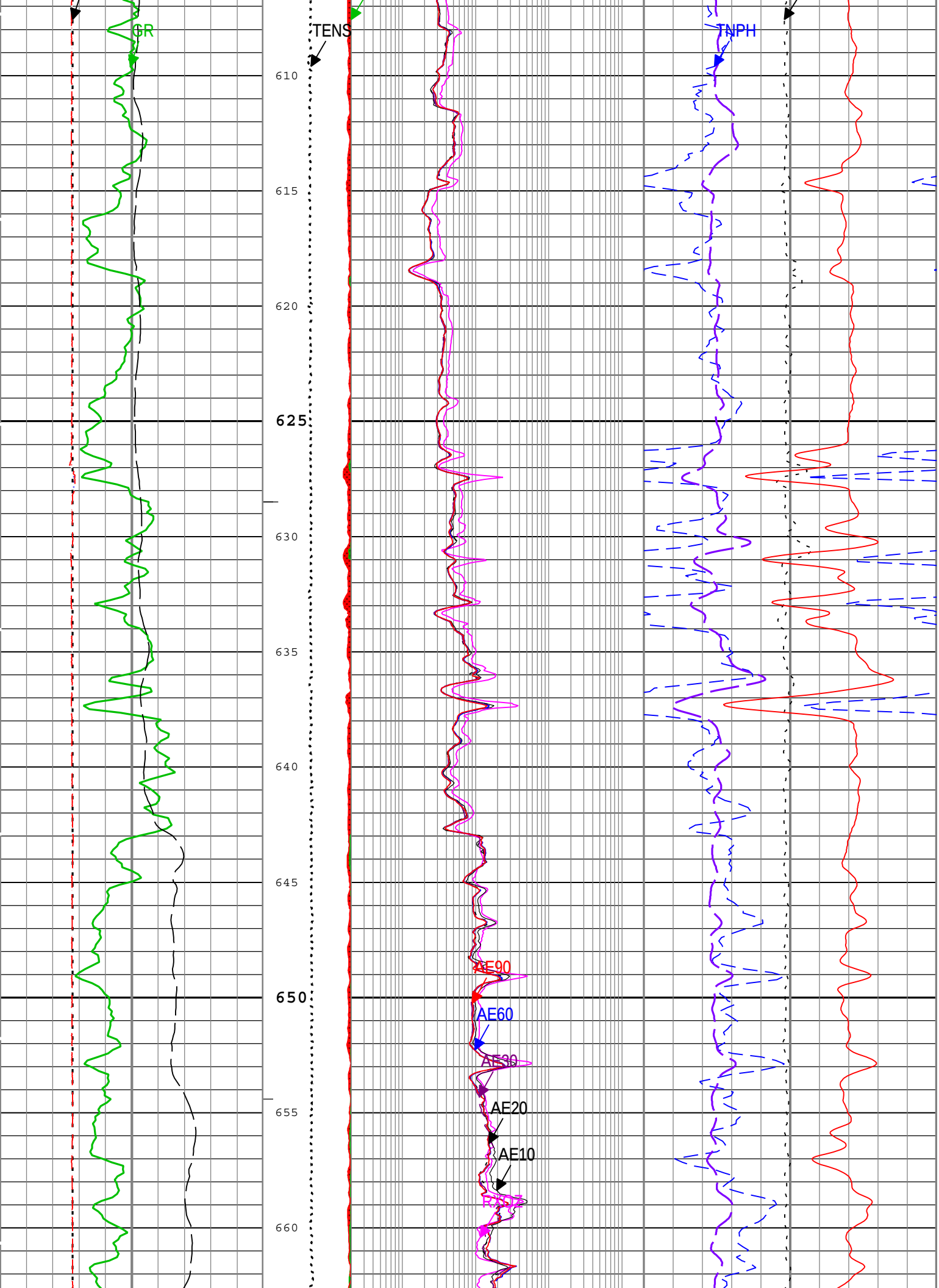

330
335
340
345
350
355
360
365
370
375
380
AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
TNPH
HDRA
RHOZ

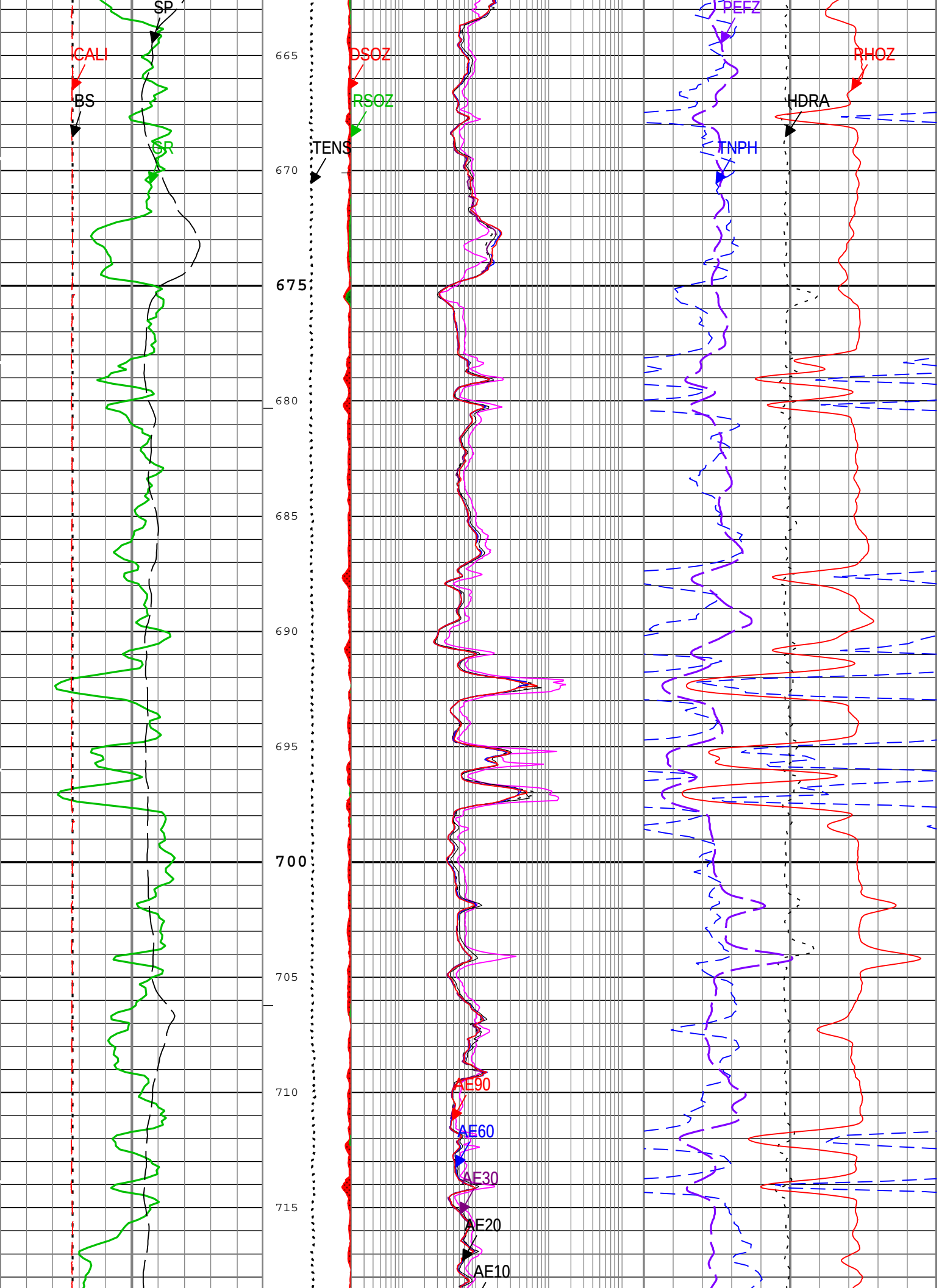

385
390
395
400
405
410
415
420
425
430
435
AE90
AE60
AE30
AE20
AE10
RXO
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
RHOZ
HDRA
TNPH

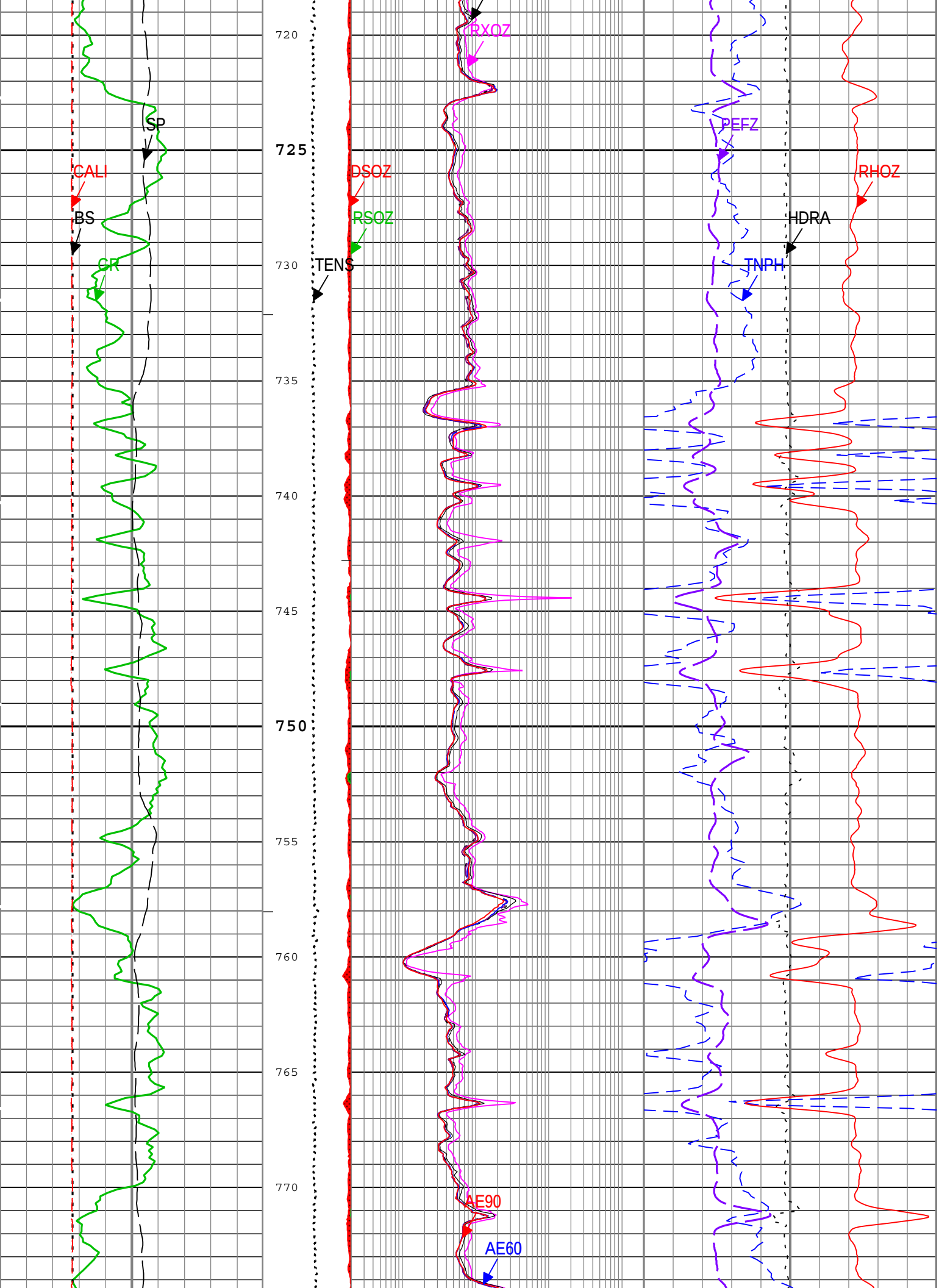

440
445
450
455
460
465
470
475
480
485
490
AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
RHOZ
HDRA
TNPH

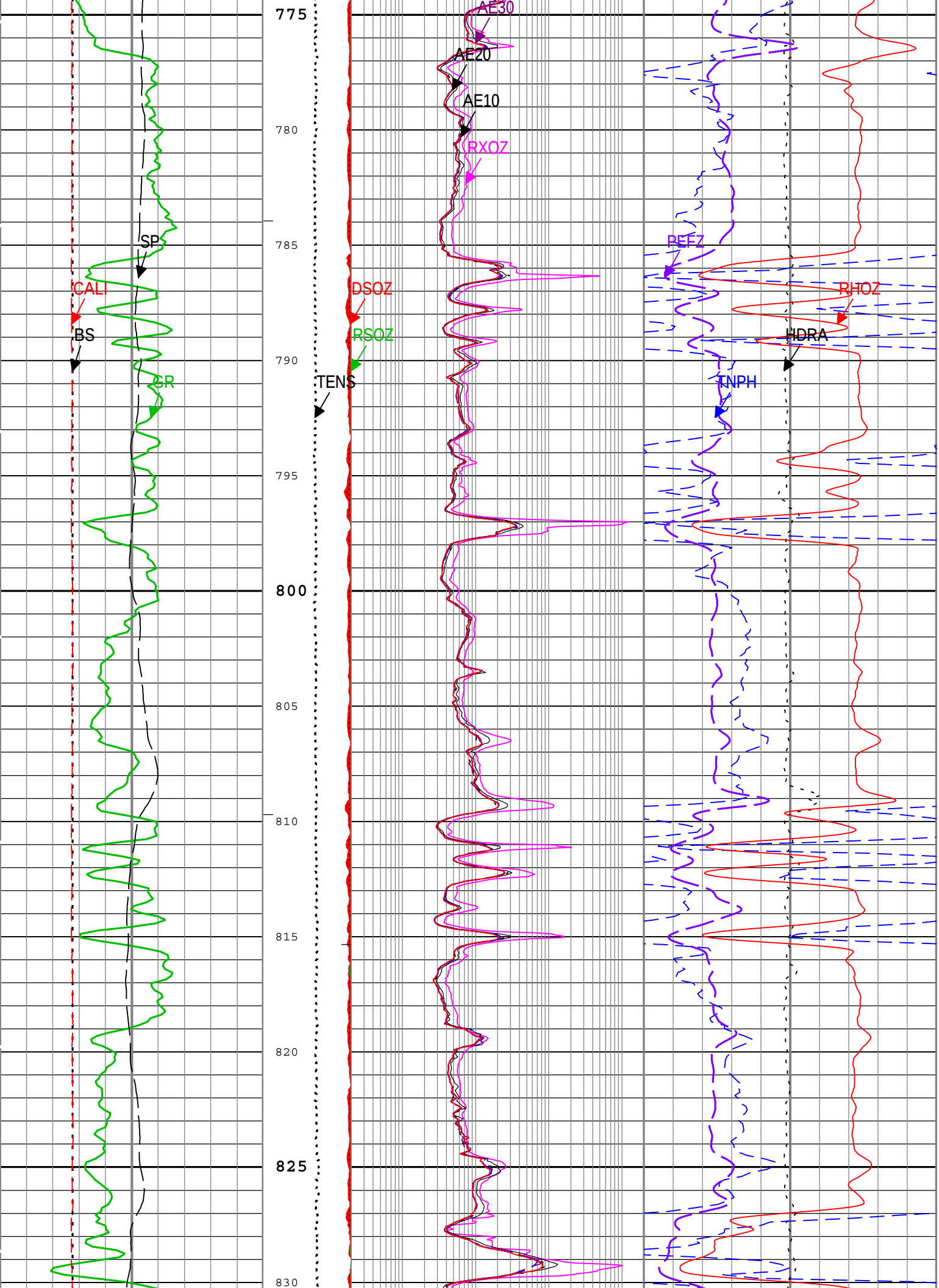

500
505
510
515
520
525
530
535
540
545
550
AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
RHOZ
HDRA
TNPH

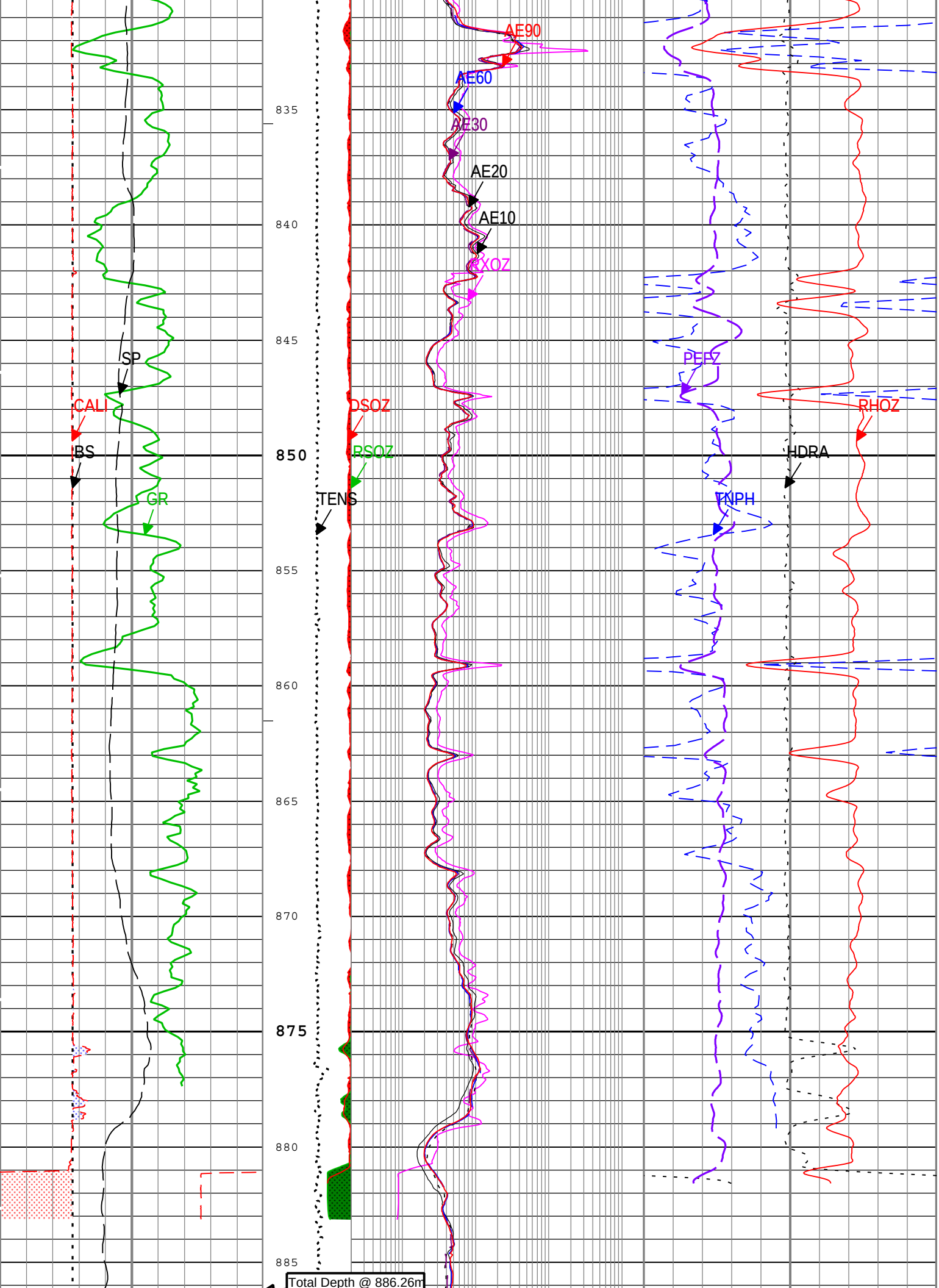

555
560
565
570
575
580
585
590
595
600
605
AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
DSOZ
RSOZ
PEFZ
RHOZ
HDRA

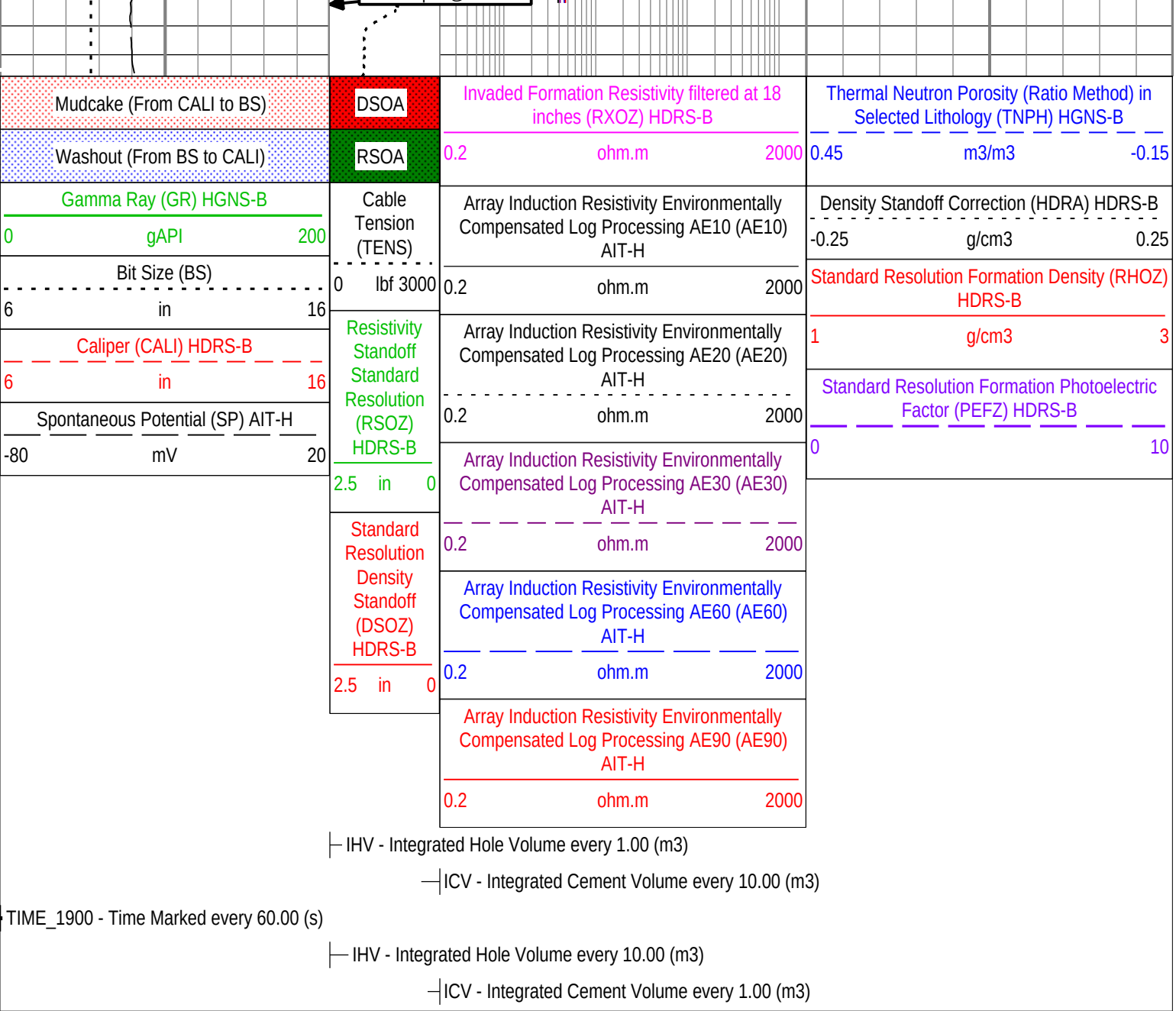

GR
TENS
TNPH
610
615
620
625
630
635
640
645
650
655
660
AE90
AE60
AE30
AE20
AE10


SP
CALI
BS
GR
TENS
DSOZ
RSOZ
PEFZ
RHOZ
HDRA
TNPH
AE90
AE60
AE30
AE20
AE10
665
670
675
680
685
690
695
700
705
710
715


720
725
730
735
740
745
750
755
760
765
770
SP
CALI
BS
GR
TENS
DSOZ
RSOZ
RXOZ
PEFZ
RHOZ
HDRA
TNPH
AE90
AE60


775
780
785
790
795
800
805
810
815
820
825
830
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
RHOZ
HDRA
TNPH


AE90
AE60
AE30
AE20
AE10
RXOZ
SP
CALI
BS
GR
DSOZ
RSOZ
TENS
PEFZ
RHOZ
HDRA
TNPH
835
840
845
850
855
860
865
870
875
880
885
Total Depth @ 886.26m



Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 200_StdRes) Index Scale: 1:200 Index Unit: m
Index Type: Measured Depth Creation Date: 20-May-2013 21:41:40

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.625	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	44.42	degC
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	23063.2	ppm
BSCO	Borehole Salinity Correction Option	HGNS-B	Yes	
CALI_SHIFT	CALI Supplementary Offset	HDRS-B	0.16	in
CBLO	Casing Bottom (Logger)	WLSESSION	120.19	m
CDEN	Cement Density	HGNS-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DFD	Drilling Fluid Density	Borehole	9	lbm/gal

DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	KCL Polymer	
DHC	Density Hole Correction	HDRS-B	Bit Size	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	3.8	m
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	313	m
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in
FSAL	Formation Salinity	Borehole	0	ppm
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	
GGRD	Geothermal Gradient	Borehole	18.23	degC/km
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HSCO	Hole Size Correction Option	HGNS-B	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MFST	Mud Filtrate Sample Temperature	Borehole	23.8	degC
MST	Mud Sample Temperature	Borehole	23.8	degC
MWCO	Mud Weight Correction Option	HGNS-B	Yes	
NPRM	HRDD Nuclear Processing Mode	HDRS-B	High Resolution	
PDAT	Permanent Datum	WLSESSION	GL	
PTCO	Pressure Temperature Correction Option	HGNS-B	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.2	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.27	ohm.m
SHT	Surface Hole Temperature	Borehole	23.8	degC
SOCN	Standoff Distance	HGNS-B	0	in
SOCO	Standoff Correction Option	HGNS-B	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/m
TD	Total Measured Depth	Borehole	886.26	m

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)
BS	12.25	5.03	127
BS	8.75	127	888.75

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BRD_TYPE	HRGD Board Type	HDRS-B	WITHOUT_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
STSO_HRDD	Temperature Source for the Density Algorithm	HDRS-B	Decaytime algorithm	

AIT-PEX-GPIT

Main StdRes

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
AIT-PEX-GPIT	Repeat[2]:Up	Up	781.27 m	888.77 m	20-May-2013 5:58:30 PM	20-May-2013 6:12:24 PM	0.20 m	true
AIT-PEX-GPIT	Main[3]:Up	Up	20.71 m	888.74 m	20-May-2013 6:16:31 PM	20-May-2013 7:57:09 PM	0.00 m	true

All depths are referenced to toolstring zero

Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 200_StdRes RA) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 20-May-2013 21:41:46

TIME_1900 - Time Marked every 60.00 (s)

Main To Repeat

Repeat To Main

Caliper (CALI) HDRS-B

6 in 16

Main To Repeat

Repeat To Main

Gamma Ray (GR) HGNS-B

0 gAPI 200

Main To Repeat

Repeat To Main

Bit Size (BS)

6 in 16

Main To Repeat

Repeat To Main

Spontaneous Potential (SP) AIT-H

-80 mV 20

Main To Repeat

Repeat To Main

Standard Resolution Density Standoff (DSOZ) HDRS-B

2.5 in 0

Main To Repeat

Repeat To Main

Cable Tension (TENS)

0 lbf 3000

Main To Repeat

Repeat To Main

Resistivity Standoff Standard Resolution (RSOZ) HDRS-B

2.5 in 0

Main To Repeat

Repeat To Main

Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-B

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE30 (AE30) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE20 (AE20) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE10 (AE10) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B

0.45 m3/m3 -0.15

Main To Repeat

Repeat To Main

Density Standoff Correction (HDRA) HDRS-B

-0.25 g/cm3 0.25

Main To Repeat

Repeat To Main

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B

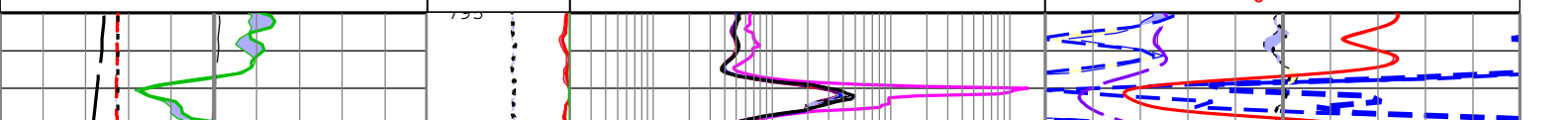
0 10

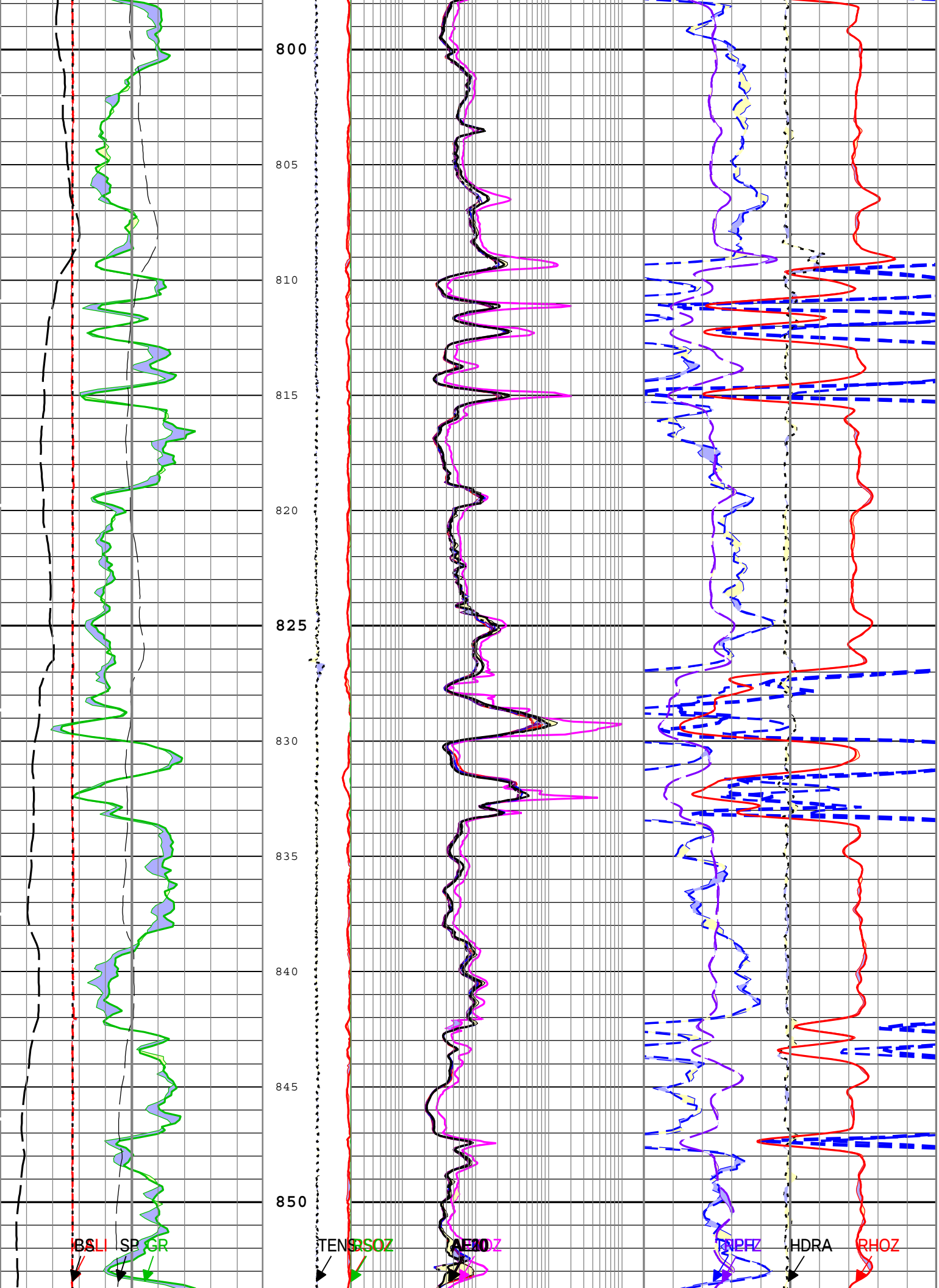
Main To Repeat

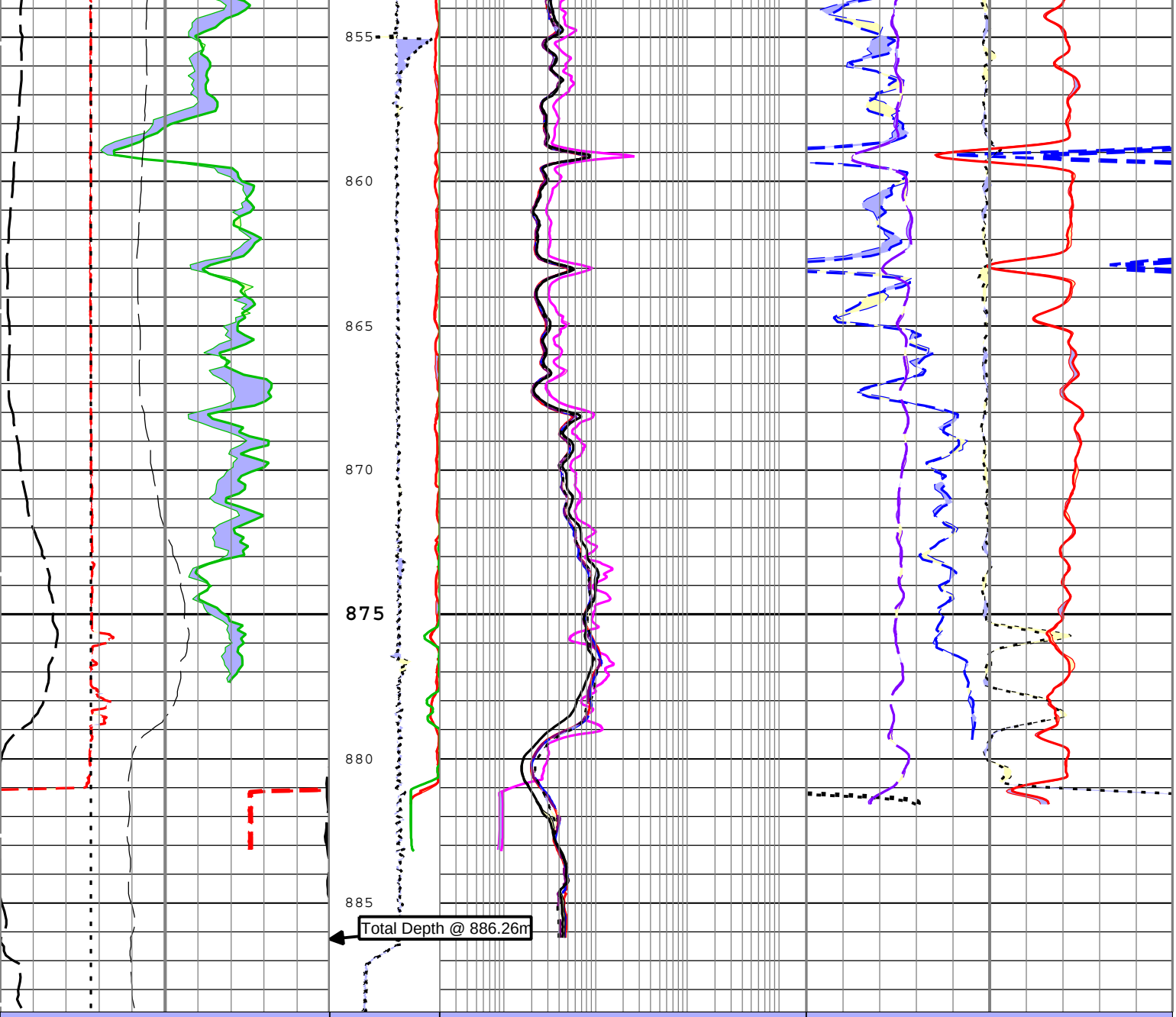
Repeat To Main

Standard Resolution Formation Density (RHOZ) HDRS-B

1 g/cm3 3




800
805
810
815
820
825
830
835
840
845
850
BS
LI
SP
GR
TENS
RSOZ
AE20
AE90
TNPHZ
HDRA
RHOZ



Main To Repeat

Repeat To Main

Caliper (CALI) HDRS-B

6 in 16

Main To Repeat

Repeat To Main

Gamma Ray (GR) HGNS-B

0 gAPI 200

Main To Repeat

Repeat To Main

Bit Size (BS)

6 in 16

Main To Repeat

Main To Repeat

Repeat To Main

Standard Resolution Density Standoff (DSOZ) HDRS-B

2.5 in 0

Main To Repeat

Repeat To Main

Cable Tension (TENS)

Main To Repeat

Repeat To Main

Invaded Formation Resistivity filtered at 18 inches (RXOZ) HDRS-B

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE90 (AE90) AIT-H

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Array Induction Resistivity Environmentally Compensated Log Processing AE60 (AE60)

Main To Repeat

Repeat To Main

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-B

0.45 m3/m3 -0.15

Main To Repeat

Repeat To Main

Density Standoff Correction (HDRA) HDRS-B

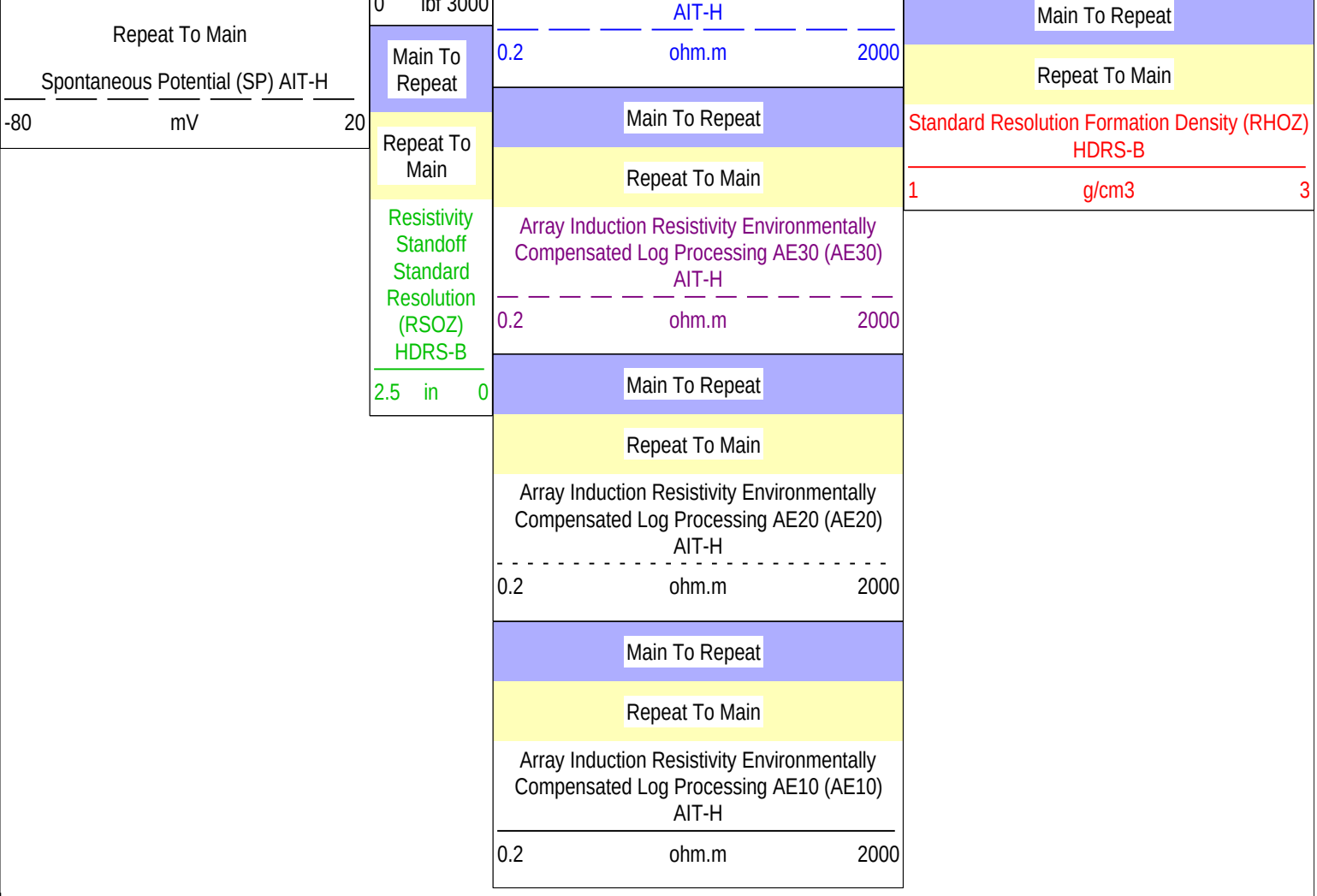
-0.25 g/cm3 0.25

Main To Repeat

Repeat To Main

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-B

0 10



TIME_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express Format: Log (Origin PEX 200_StdRes RA) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 20-May-2013 21:41:46

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

Array Induction Sonde - H	AHIS	105

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM	105

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.018	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.307	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.018	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.987	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.021	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	0.150	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.014	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.243	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.997	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.073	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.991	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.371	3.000
Test Loop Gain - 6		Master	1.000	0.950	1.001	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	-0.048	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.002	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.475	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-120.173	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-115.006	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	145.987	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-288.389	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.834	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-3.452	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	68.147	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-4.696	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.880	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	1.669	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	12.346	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-16.978	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.425	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	5.402	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.039	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	0.870	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 16:38:03 11-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	1.096	1.200
Fine Gain		Master	1.000	0.800	1.095	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 16:38:03 11-Mar-2013 Before (Measured): 17:09:04 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.622	0.847
		Before	-----	0.363	0.629	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.007	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	65.360	131.000
		Before	-----	11.000	66.192	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.832	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.275	1.778
		Before	-----	0.762	1.289	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.014	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	64.212	130.000
		Before	-----	10.000	65.054	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.842	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.631	0.872
		Before	-----	0.374	0.638	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.007	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	60.406	126.000
		Before	-----	6.000	61.276	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.870	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.714	0.986
		Before	-----	0.422	0.723	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.009	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	59.608	125.000
		Before	-----	5.000	60.478	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.870	-----
		After-Before	-----	-----	-----	-----

Thru Cal Mag - 4	V	Master	-----	0.802	1.332	1.872
		Before	-----	0.802	1.348	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.016	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	53.180	119.000
		Before	-----	-1.000	54.090	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.910	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.945	2.737
		Before	-----	1.173	1.967	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.022	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	51.172	117.000
		Before	-----	-3.000	52.130	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.958	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.942	2.737
		Before	-----	1.173	1.964	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.022	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	51.191	117.000
		Before	-----	-3.000	52.148	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.957	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.378	1.981
		Before	-----	0.849	1.397	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.019	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	47.085	113.000
		Before	-----	-7.000	48.348	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.263	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	-0.026	50.000
		Before		-50.000	-0.052	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.026	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	991.902	1040.000
		Before		941.000	992.943	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.041	-----
		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	0.919	0.960
		Before		0.870	0.920	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----

HDRS-B (HILT Density and Rxo Sonde, 125 degC) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	1801
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	754

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter	48944
HRDD Long Spacing Detector	Long Spacing	28074
HRDD Short Spacing Detector	Short Spacing	50796
Cesium 137 Gamma-Ray Logging Source	GSR-J	3739
HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	1801
HILT High-Resolution Mechanical Sonde, 125 degC	HRMS-B	748

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): 16:49:59 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	8.08	10.00
Large Ring	in	Before	12.00	9.00	12.27	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 19:03:32 15-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.598	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.691	1.696
Pe Aluminum		Master	2.570	2.470	2.585	2.670
Pe Magnesium		Master	2.650	2.550	2.597	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 19:03:32 15-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.1572	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.3685	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.3920	1.0000
SS Max Deviation	%	Master	0	-2.5000	1.7452	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.8261	1.5000
LS Max Deviation	%	Master	0	-3.5000	1.6226	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7281	
		Before	0.7281	0.6917	0.7258	0.7646
		Before-Master	-----	-----	-0.0023	-----
BS Window Sum	1/s	Master	1		14020	
		Before	14020	13319	14002	14721
		Before-Master	-----	-----	-18	-----
SS Window Ratio		Master	1.0000		0.5113	
		Before	0.5113	0.4857	0.5134	0.5369
		Before-Master	-----	-----	0.0021	-----
SS Window Sum	1/s	Master	1		9425	
		Before	9425	8954	9435	9896
		Before-Master	-----	-----	10	-----
LS Window Ratio		Master	1.0000		0.2939	
		Before	0.2939	0.2792	0.2948	0.3086
		Before-Master	-----	-----	0.0009	-----
LS Window Sum	1/s	Master	1		1464	
		Before	1464	1391	1468	1537
		Before-Master	-----	-----	4	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1495	2400
		Before		1000	1498	2400
		Before-Master	-----	-100	3	100
SS PM High Voltage	V	Master		1000	1475	2400
		Before		1000	1500	2400

		Before-Master	-----	-100	25	100
LS PM High Voltage	V	Master		1000	1713	2400
		Before		1000	1704	2400
		Before-Master	-----	-100	-9	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 19:03:32 15-May-2013 Before (Measured): 16:54:31 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.29	25.00
		Before		5.00	11.37	25.00
		Before-Master	-----	-1.00	0.08	1.00
SS Crystal Resolution	%	Master		5.00	9.53	20.00
		Before		5.00	9.48	20.00
		Before-Master	-----	-1.00	-0.05	1.00
LS Crystal Resolution	%	Master		5.00	9.89	20.00
		Before		5.00	9.86	20.00
		Before-Master	-----	-1.00	-0.03	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 17:06:57 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3864	4185
Deep Resistivity	ohm.m	Before	3830	3524	3812	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3821	4136

HGNS-B (HILT Gamma-Ray and Neutron Sonde, 125 degC) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 125 degC	HGNS-B	956

Auxiliary Equipment :

HGNS Accelerometer, 125 degC	HACCZ-B	460
AmBe Neutron Logging Source	NSR-F	659

Calibration Parameter :

Water Temperature	
Housing Size	
JIG-BKG (Jig minus background reference)	162

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 16:51:50 20-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	m/s2	Before	9.81	9.61	9.77	10.01

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-Jan-1997

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Accelerometer Manufacturer		Master			Sunstrand	
Accelerometer Reference Temperature	degC	Master		-1.0	20.0	50.0
Accelerometer Coefficients - 0		Master	-----	-----	-203.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	14.850	-----
Accelerometer Coefficients - 2		Master	-----	-----	0.026	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.181	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	293.600	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.999	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 16:17:08 01-Apr-2013 Before (Measured): 16:55:03 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	28.8	40.0
		Before	0	5.0	28.7	40.0
		After	-----	-----	-----	-----

		Before-Master	-----	-4.3	-0.1	4.3	
		After-Before	-----	-----	-----	-----	
Far Zero Measurement	1/s	Master	0	5.0	29.2	40.0	
		Before	0	5.0	29.2	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-4.4	0.0	4.4	
		After-Before	-----	-----	-----	-----	
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5451.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2351.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5422.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2321.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 17:05:46 20-May-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	104.1	120.0	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
RGR Plus Measurement	gAPI	Before	182.0	154.3	158.5	202.5	
		After			NOT DONE		
		After-Before	-----	-----	-----	-----	
GR Calibration Gain		Before	0.89	0.80	1.02	1.05	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

GPIT-F (General-Purpose Inclinometer Tool) Calibration - Run AIT-PEX-GPIT

Primary Equipment :

GPIT DHRU Sensor Block - F DHRU-F 1895

GPIT-F Accelerometers Master Calibration - Signals and Temperature Correction for Accelerometers

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Accelero X Model[0,0]		Master	-----	-----	0.004207087	-----	
GPIT-F Accelero X Model[0,1]		Master	-----	-----	0.0006864038	-----	
GPIT-F Accelero X Model[1,0]		Master	-----	-----	-1.040337E-05	-----	
GPIT-F Accelero X Model[1,1]		Master	-----	-----	-1.043902E-07	-----	
GPIT-F Accelero X Model[2,0]		Master	-----	-----	4.059539E-06	-----	
GPIT-F Accelero X Model[2,1]		Master	-----	-----	8.144008E-10	-----	
GPIT-F Accelero X Model[3,0]		Master	-----	-----	-1.812993E-08	-----	
GPIT-F Accelero X Model[3,1]		Master	-----	-----	-4.019786E-12	-----	
GPIT-F Accelero Y Model[0,0]		Master	-----	-----	0.05549311	-----	
GPIT-F Accelero Y Model[0,1]		Master	-----	-----	-0.0006798638	-----	
GPIT-F Accelero Y Model[1,0]		Master	-----	-----	-0.0001430089	-----	
GPIT-F Accelero Y Model[1,1]		Master	-----	-----	7.932753E-08	-----	
GPIT-F Accelero Y Model[2,0]		Master	-----	-----	-2.232648E-06	-----	
GPIT-F Accelero Y Model[2,1]		Master	-----	-----	-5.317669E-10	-----	
GPIT-F Accelero Y Model[3,0]		Master	-----	-----	3.209307E-09	-----	
GPIT-F Accelero Y Model[3,1]		Master	-----	-----	2.926397E-12	-----	
GPIT-F Accelero Z Model[0,0]		Master	-----	-----	0.00906635	-----	
GPIT-F Accelero Z Model[0,1]		Master	-----	-----	0.0006716743	-----	

GPIT-F Accelero Z Model[1,0]		Master	-----	-----	0.0001165258	-----	
GPIT-F Accelero Z Model[1,1]		Master	-----	-----	-8.532588E-08	-----	
GPIT-F Accelero Z Model[2,0]		Master	-----	-----	2.9434E-06	-----	
GPIT-F Accelero Z Model[2,1]		Master	-----	-----	5.723157E-10	-----	
GPIT-F Accelero Z Model[3,0]		Master	-----	-----	-1.974962E-08	-----	
GPIT-F Accelero Z Model[3,1]		Master	-----	-----	-3.11312E-12	-----	

GPIT-F Accelerometers Master Calibration - Perpendicular Correction for Accelerometers

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Accelero Axis Model[0,0]		Master	-----	-----	0.000406909	-----	
GPIT-F Accelero Axis Model[0,1]		Master	-----	-----	-0.0004816548	-----	
GPIT-F Accelero Axis Model[0,2]		Master	-----	-----	0.0005256807	-----	
GPIT-F Accelero Axis Model[0,3]		Master	-----	-----	-0.0001735548	-----	
GPIT-F Accelero Axis Model[0,4]		Master	-----	-----	-0.0001155044	-----	
GPIT-F Accelero Axis Model[0,5]		Master	-----	-----	-0.000620488	-----	
GPIT-F Accelero Axis Model[0,6]		Master	-----	-----	0	-----	
GPIT-F Accelero Axis Model[1,0]		Master	-----	-----	2.233345E-06	-----	
GPIT-F Accelero Axis Model[1,1]		Master	-----	-----	-6.180741E-06	-----	
GPIT-F Accelero Axis Model[1,2]		Master	-----	-----	-1.888997E-06	-----	
GPIT-F Accelero Axis Model[1,3]		Master	-----	-----	-1.86296E-06	-----	
GPIT-F Accelero Axis Model[1,4]		Master	-----	-----	1.184506E-06	-----	
GPIT-F Accelero Axis Model[1,5]		Master	-----	-----	9.365464E-07	-----	
GPIT-F Accelero Axis Model[1,6]		Master	-----	-----	0	-----	

GPIT-F Magnetometers Master Calibration - Signals and Temperature Correction for Magnetometer

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Magneto X Model[0,0]		Master	-----	-----	44.21159	-----	
GPIT-F Magneto X Model[0,1]		Master	-----	-----	4.902673	-----	
GPIT-F Magneto X Model[1,0]		Master	-----	-----	-0.8434622	-----	
GPIT-F Magneto X Model[1,1]		Master	-----	-----	-0.0001855705	-----	
GPIT-F Magneto X Model[2,0]		Master	-----	-----	0.01488871	-----	
GPIT-F Magneto X Model[2,1]		Master	-----	-----	2.669429E-06	-----	
GPIT-F Magneto X Model[3,0]		Master	-----	-----	-0.0001037317	-----	
GPIT-F Magneto X Model[3,1]		Master	-----	-----	-1.065781E-08	-----	
GPIT-F Magneto Y Model[0,0]		Master	-----	-----	-113.494	-----	
GPIT-F Magneto Y Model[0,1]		Master	-----	-----	-4.948484	-----	
GPIT-F Magneto Y Model[1,0]		Master	-----	-----	3.985998	-----	
GPIT-F Magneto Y Model[1,1]		Master	-----	-----	0.0002682161	-----	
GPIT-F Magneto Y Model[2,0]		Master	-----	-----	-0.05203726	-----	
GPIT-F Magneto Y Model[2,1]		Master	-----	-----	-3.585374E-06	-----	
GPIT-F Magneto Y Model[3,0]		Master	-----	-----	0.0002362945	-----	
GPIT-F Magneto Y Model[3,1]		Master	-----	-----	1.432678E-08	-----	
GPIT-F Magneto Z Model[0,0]		Master	-----	-----	-211.3135	-----	
GPIT-F Magneto Z Model[0,1]		Master	-----	-----	4.885637	-----	
GPIT-F Magneto Z Model[1,0]		Master	-----	-----	5.51648	-----	
GPIT-F Magneto Z Model[1,1]		Master	-----	-----	-0.0002786048	-----	
GPIT-F Magneto Z Model[2,0]		Master	-----	-----	-0.06822682	-----	
GPIT-F Magneto Z Model[2,1]		Master	-----	-----	4.267224E-06	-----	
GPIT-F Magneto Z Model[3,0]		Master	-----	-----	0.0002360608	-----	
GPIT-F Magneto Z Model[3,1]		Master	-----	-----	-1.684153E-08	-----	

GPIT-F Magnetometers Master Calibration - Perpendicular Correction for Magnetometer

Master (EEPROM): 00:00:00 09-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Magneto Axis Model[0,0]		Master	-----	-----	-0.0004862078	-----	
GPIT-F Magneto Axis Model[0,1]		Master	-----	-----	0.001974765	-----	
GPIT-F Magneto Axis Model[0,2]		Master	-----	-----	-0.002917855	-----	
GPIT-F Magneto Axis Model[0,3]		Master	-----	-----	0.005825281	-----	
GPIT-F Magneto Axis Model[0,4]		Master	-----	-----	-0.0004863334	-----	
GPIT-F Magneto Axis Model[0,5]		Master	-----	-----	-0.006558565	-----	
GPIT-F Magneto Axis Model[0,6]		Master	-----	-----	0	-----	
GPIT-F Magneto Axis Model[1,0]		Master	-----	-----	-1.08951E-06	-----	
GPIT-F Magneto Axis Model[1,1]		Master	-----	-----	-4.978413E-06	-----	
GPIT-F Magneto Axis Model[1,2]		Master	-----	-----	-7.040077E-06	-----	

GPIT-F Magneto Axis Model[1,3]		Master	-----	-----	8.901991E-07	-----	
GPIT-F Magneto Axis Model[1,4]		Master	-----	-----	-4.99458E-07	-----	
GPIT-F Magneto Axis Model[1,5]		Master	-----	-----	3.313773E-06	-----	
GPIT-F Magneto Axis Model[1,6]		Master	-----	-----	0	-----	

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 05-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Electronic Coeff 1[0,0]		Master	-----	-----	0.04599224	-----	
GPIT-F Electronic Coeff 1[0,1]		Master	-----	-----	249.7076	-----	
GPIT-F Electronic Coeff 1[1,0]		Master	-----	-----	-0.0429299	-----	
GPIT-F Electronic Coeff 1[1,1]		Master	-----	-----	0.01529558	-----	
GPIT-F Electronic Coeff 1[2,0]		Master	-----	-----	0.0009150628	-----	
GPIT-F Electronic Coeff 1[2,1]		Master	-----	-----	-0.000364481	-----	
GPIT-F Electronic Coeff 1[3,0]		Master	-----	-----	-7.116594E-06	-----	
GPIT-F Electronic Coeff 1[3,1]		Master	-----	-----	3.271396E-06	-----	
GPIT-F Electronic Coeff 1[4,0]		Master	-----	-----	1.864788E-08	-----	
GPIT-F Electronic Coeff 1[4,1]		Master	-----	-----	-1.056121E-08	-----	
GPIT-F Electronic Coeff 2[0,0]		Master	-----	-----	0.2423331	-----	
GPIT-F Electronic Coeff 2[0,1]		Master	-----	-----	249.6413	-----	
GPIT-F Electronic Coeff 2[1,0]		Master	-----	-----	-0.02066159	-----	
GPIT-F Electronic Coeff 2[1,1]		Master	-----	-----	0.01931706	-----	
GPIT-F Electronic Coeff 2[2,0]		Master	-----	-----	0.0004525476	-----	
GPIT-F Electronic Coeff 2[2,1]		Master	-----	-----	-0.0004382987	-----	
GPIT-F Electronic Coeff 2[3,0]		Master	-----	-----	-2.692639E-06	-----	
GPIT-F Electronic Coeff 2[3,1]		Master	-----	-----	3.846471E-06	-----	
GPIT-F Electronic Coeff 2[4,0]		Master	-----	-----	3.46192E-09	-----	
GPIT-F Electronic Coeff 2[4,1]		Master	-----	-----	-1.218894E-08	-----	
GPIT-F Electronic Coeff 3[0,0]		Master	-----	-----	-1.549737	-----	
GPIT-F Electronic Coeff 3[0,1]		Master	-----	-----	249.8072	-----	
GPIT-F Electronic Coeff 3[1,0]		Master	-----	-----	-0.0464365	-----	
GPIT-F Electronic Coeff 3[1,1]		Master	-----	-----	0.01576184	-----	
GPIT-F Electronic Coeff 3[2,0]		Master	-----	-----	0.001230107	-----	
GPIT-F Electronic Coeff 3[2,1]		Master	-----	-----	-0.0003938072	-----	
GPIT-F Electronic Coeff 3[3,0]		Master	-----	-----	-9.653277E-06	-----	
GPIT-F Electronic Coeff 3[3,1]		Master	-----	-----	3.519131E-06	-----	
GPIT-F Electronic Coeff 3[4,0]		Master	-----	-----	2.622631E-08	-----	
GPIT-F Electronic Coeff 3[4,1]		Master	-----	-----	-1.123186E-08	-----	

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 05-Apr-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GPIT-F Electronic Coeff 4[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 4[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 4[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 4[1,1]		Master	-----	-----	1.996457E-06	-----	
GPIT-F Electronic Coeff 4[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 4[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 4[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 4[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 4[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 4[4,1]		Master	-----	-----	-2.588633E-12	-----	
GPIT-F Electronic Coeff 5[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 5[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 5[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 5[1,1]		Master	-----	-----	1.996457E-06	-----	
GPIT-F Electronic Coeff 5[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 5[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 5[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 5[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 5[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 5[4,1]		Master	-----	-----	-2.588633E-12	-----	
GPIT-F Electronic Coeff 6[0,0]		Master	-----	-----	0.1212909	-----	
GPIT-F Electronic Coeff 6[0,1]		Master	-----	-----	0.1279792	-----	
GPIT-F Electronic Coeff 6[1,0]		Master	-----	-----	-0.01018539	-----	
GPIT-F Electronic Coeff 6[1,1]		Master	-----	-----	1.996457E-06	-----	

GPIT-F Electronic Coeff 6[2,0]		Master	-----	-----	0.0001691098	-----	
GPIT-F Electronic Coeff 6[2,1]		Master	-----	-----	-6.499808E-08	-----	
GPIT-F Electronic Coeff 6[3,0]		Master	-----	-----	-7.843757E-07	-----	
GPIT-F Electronic Coeff 6[3,1]		Master	-----	-----	6.629897E-10	-----	
GPIT-F Electronic Coeff 6[4,0]		Master	-----	-----	1.848235E-09	-----	
GPIT-F Electronic Coeff 6[4,1]		Master	-----	-----	-2.588633E-12	-----	

Company: Origin Energy Ltd

Well: Condabri 156

Field: Condabri

Rig: Savanna 406

State: Queensland

Country: Australia

Schlumberger

Resistivity, Density, Neutron, GR Log

AIT-PEX-GPIT

1:100, 1:200 Scale