FTS INTERNATIONAL

GAMMA RAY CCL
CEMENT BOND VDL
SECTOR MAP

Company	NIGHTHAWK PRODUCTION LLC	Company	NIGHTHAWK PRODUCTION LLC	
Well	SNOW KING 9-32	Well	SNOW KING 9-32	
Field	ARIKAREE CREEK	Field	ARIKAREE CREEK	
County	LINCOLN	County	LINCOLN	State COLORADO
State	COLORADO			

Location: API # : 05-073-06637-0000

SHL: 2540' FSL & 660' FEL
LAT. 39.483560 / LONG.103.456070
SEC 32 TWP 6S RGE 54W

Other Services

Permanent Datum	GL	Elevation	5324
Log Measured From	KB 15'		
Drilling Measured From	KB		

Elevation
K.B. 5339
D.F. 5338
G.L. 5324

Date	12-JANUARY-2015		
Run Number	ONE		
Depth Driller	8510		
Depth Logger	8356		
Bottom Logged Interval	8356		
Top Log Interval	SURFACE		
Open Hole Size	7.875		
Type Fluid	WATER		
Density / Viscosity	---		
Max. Recorded Temp.	244		
Estimated Cement Top	1146		
Time Well Ready	8:30 A.M.		
Time Logger on Bottom	10:30 A.M.		
Equipment Number	2829		
Location	STERLING, CO		
Recorded By	BRIAN HECHT		
Witnessed By	BILL McKNAB		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	5.5	17		
Liner				

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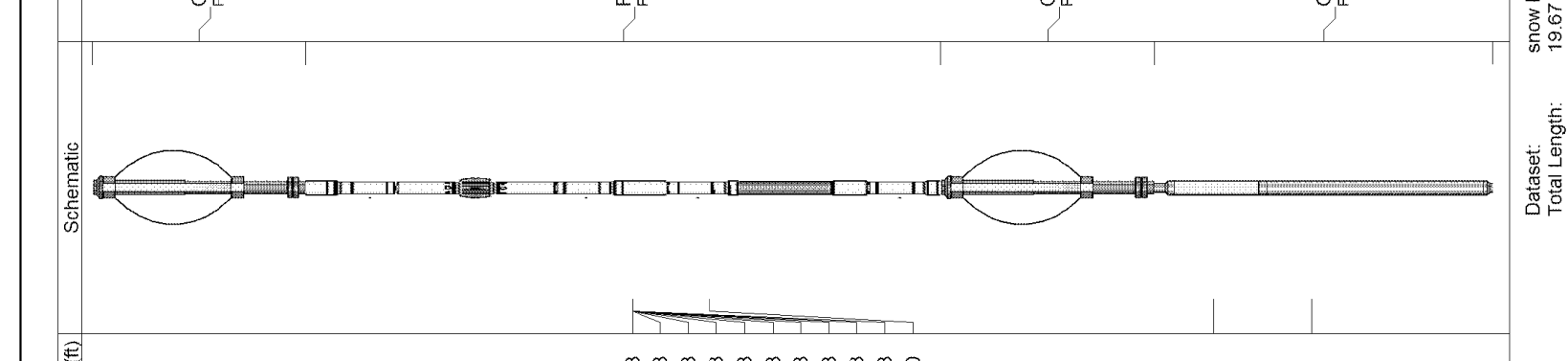
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 set out in our current Price Schedule.

Comments

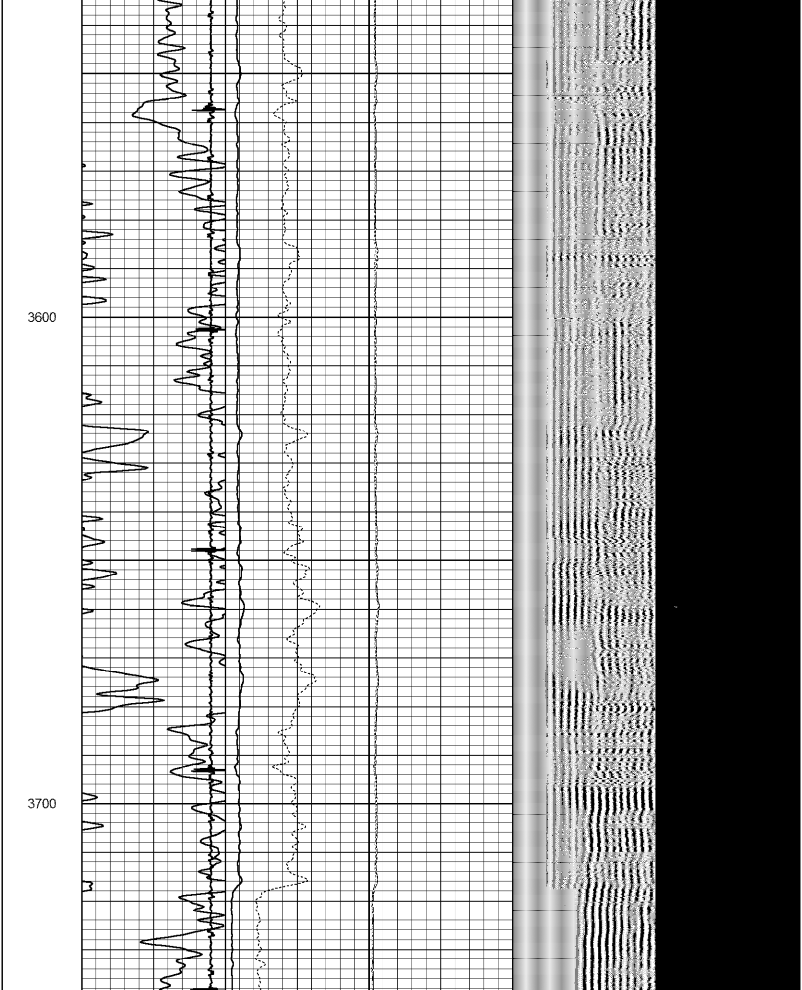
THANK YOU FOR USING FTSI WIRELINE
CORRELATED TO SCHLUMBERGER OPENHOLE LOG
DATED 08-JAN.-2015



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CENT-Probe (Probe1) PROBE 2.75 CENT	3.00	2.75	25.00
WVF3FT WVFCAL WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 WVF5FT	12.08 12.08 12.08 12.08 12.08 12.08 12.08 12.08 12.08 12.08 11.00		RBT-Probe (4.5040904) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
			CENT-Probe (Probe2) PROBE 2.75 CENT	3.00	2.75	25.00
CCL GR	3.92 2.54		GR-Probe275dig (pr051112) Probe Digital Gamma CCL	4.75	2.75	57.00

Dataset: snow king 9-32.db: field/well/run1/pass4
Total Length: 19.67 ft
Total Weight: 197.00 lb
O.D. 2.75 in

Database File:	snow king 9-32.db
Dataset Pathname:	pass4
Presentation Format:	scbl02
Dataset Creation:	Mon Jan 12 09:02:38 2015 by Log Std Casedhole 10121
Charted by:	Depth in Feet scaled 1:240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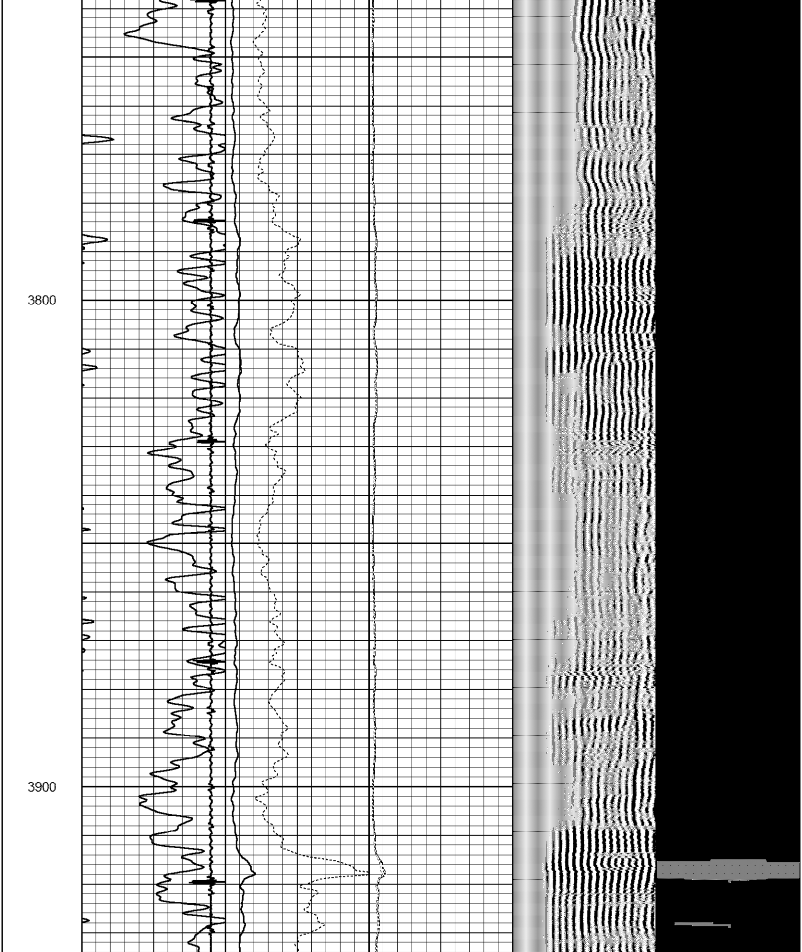
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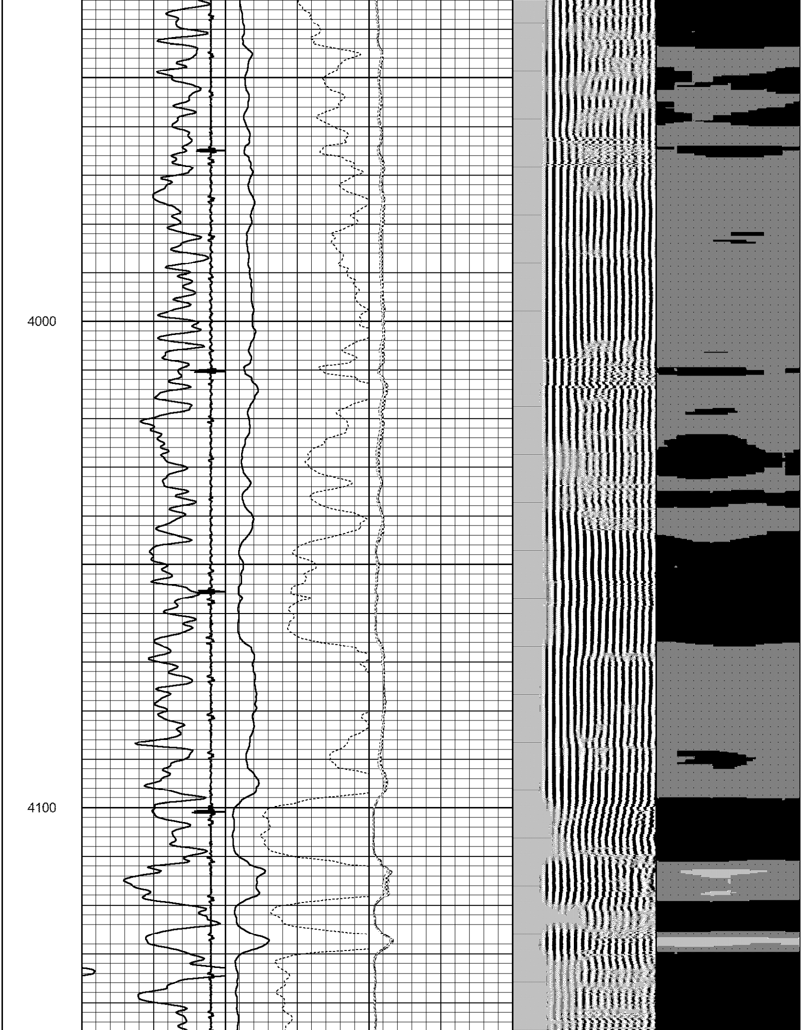
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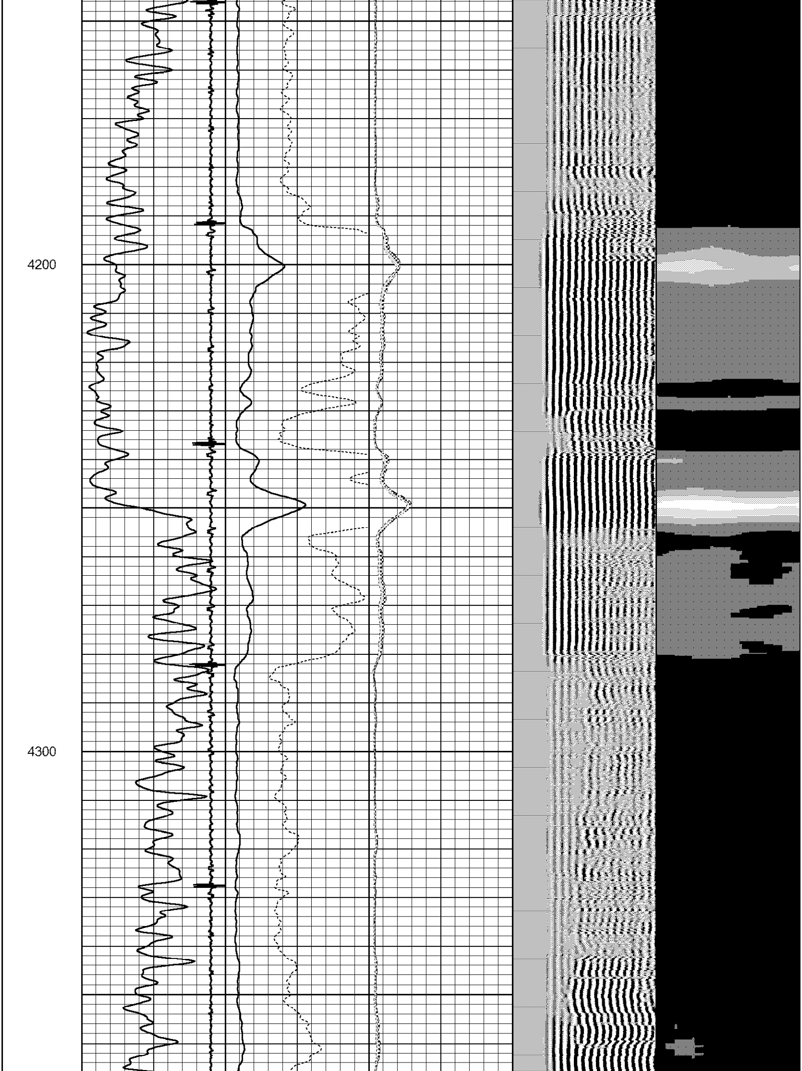
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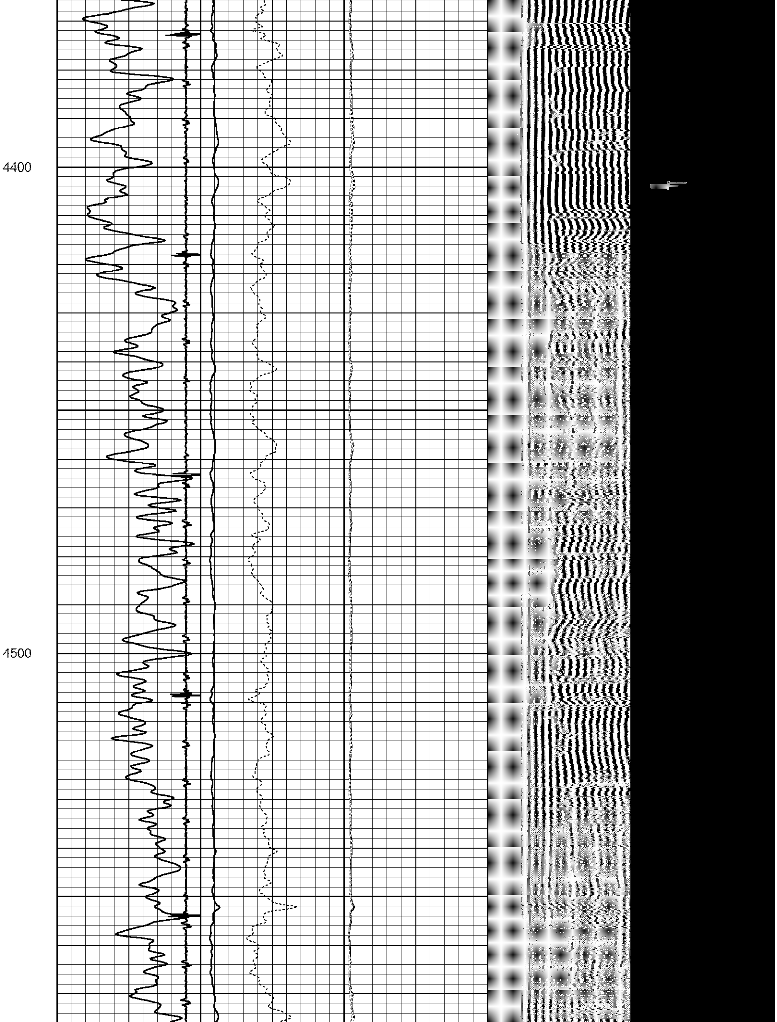
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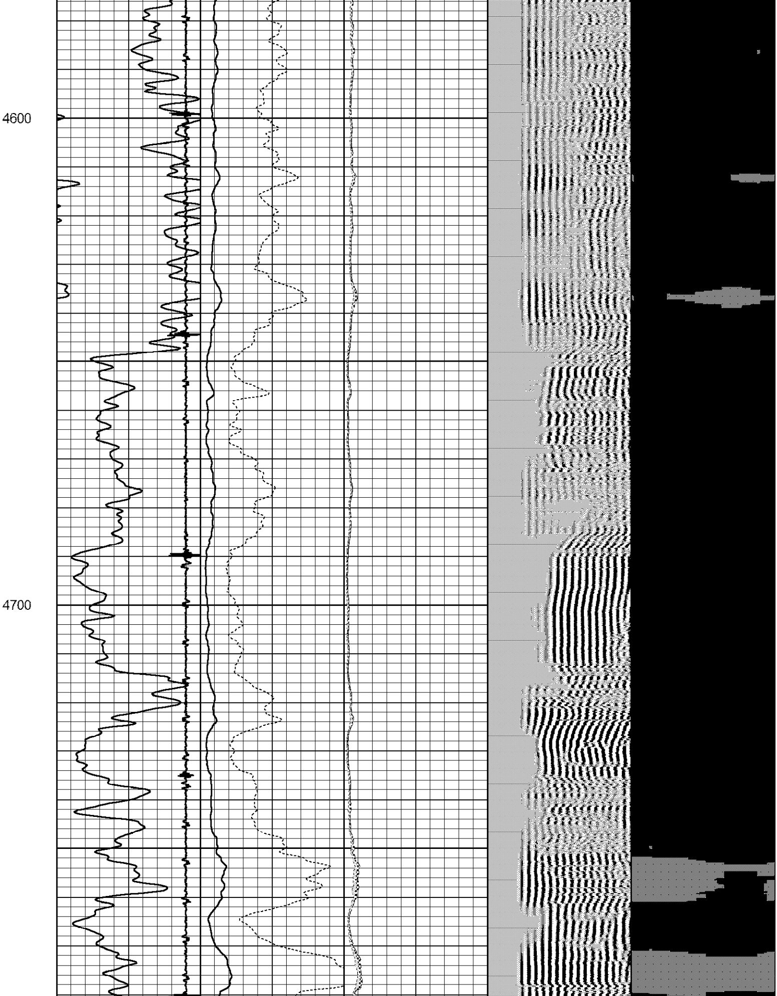
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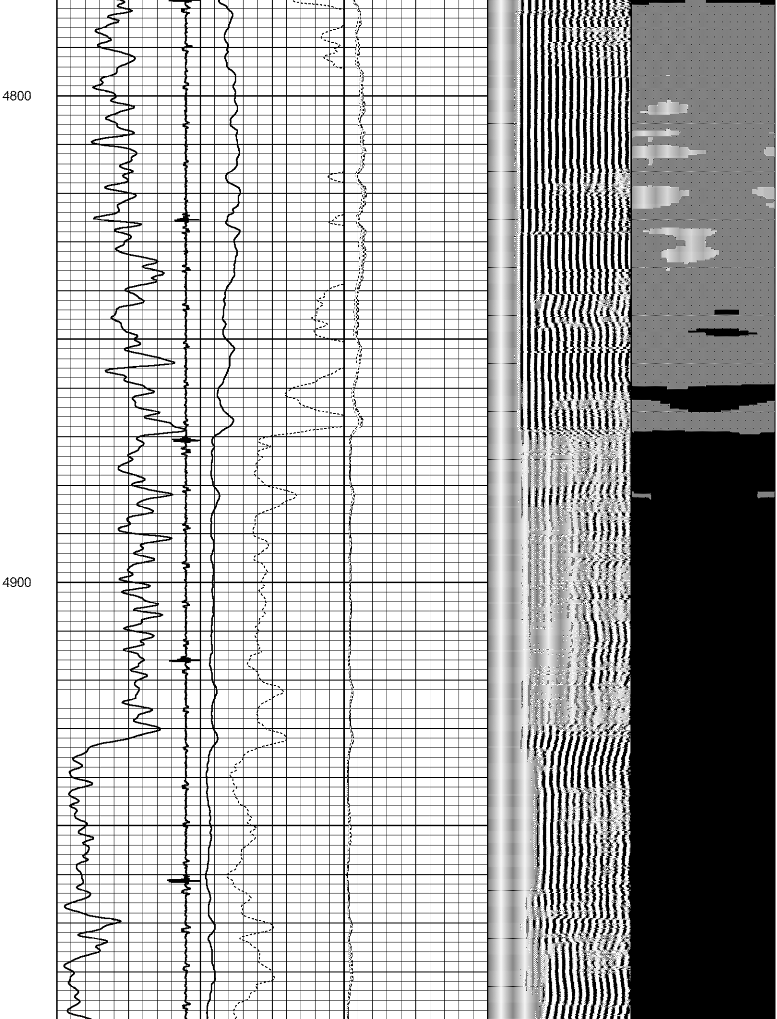
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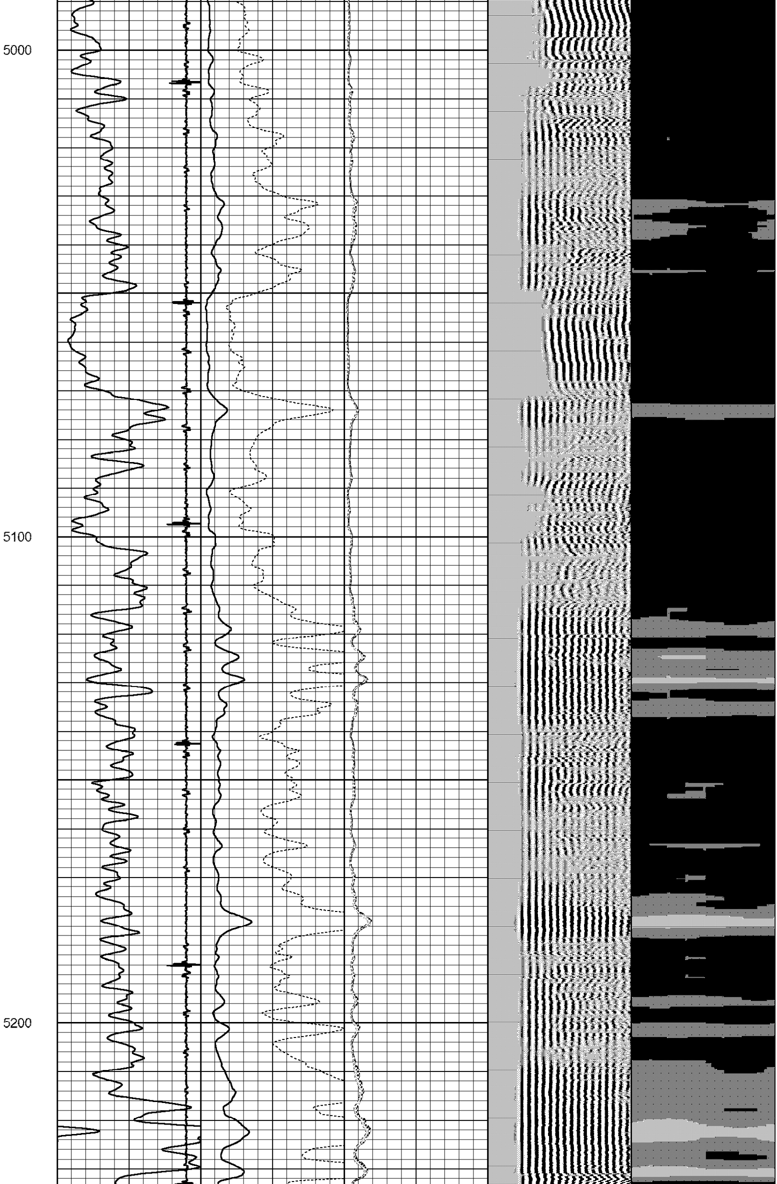
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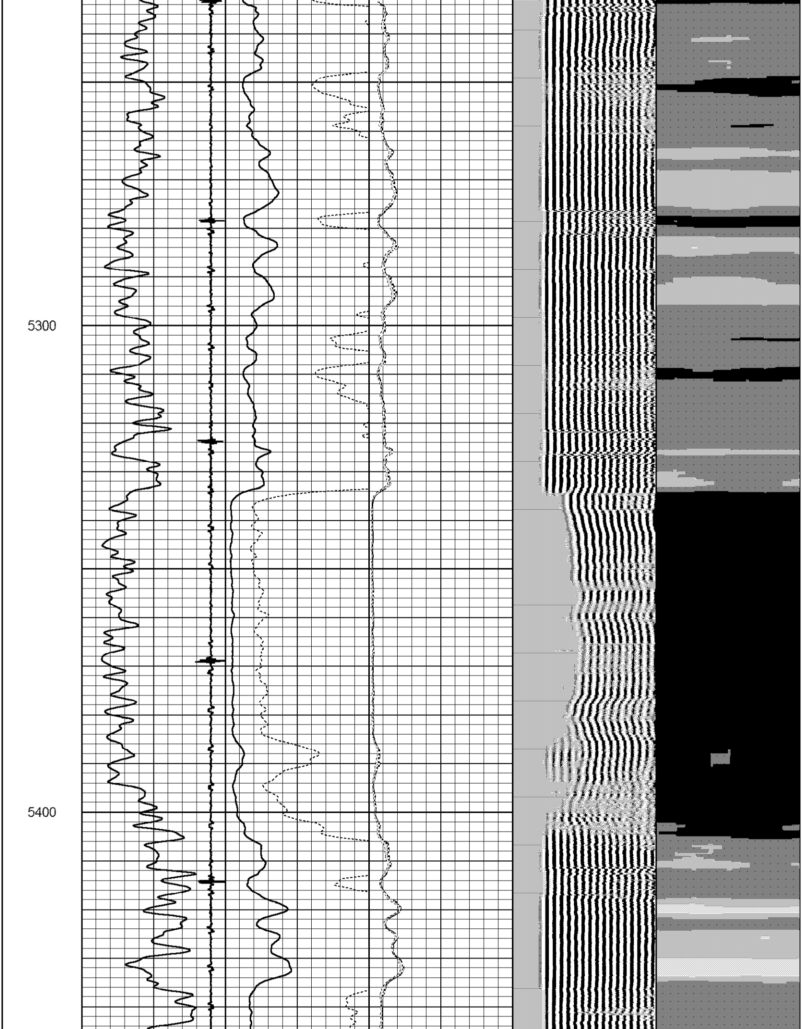
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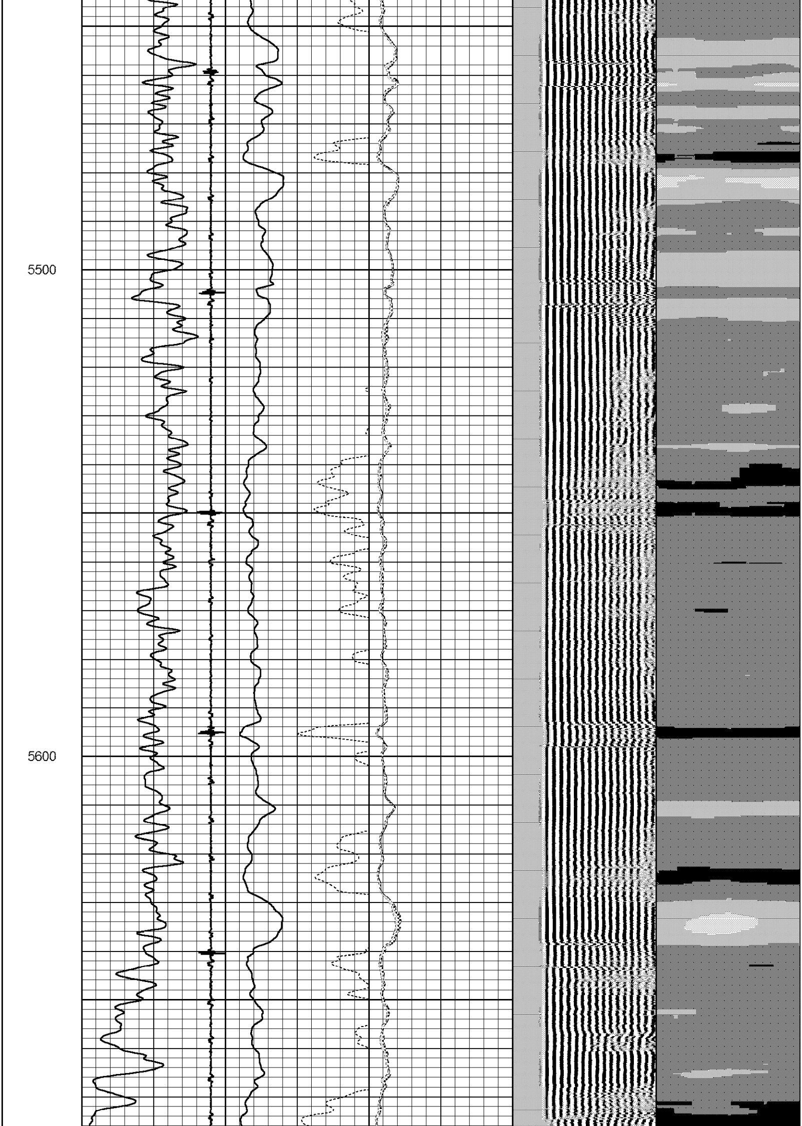
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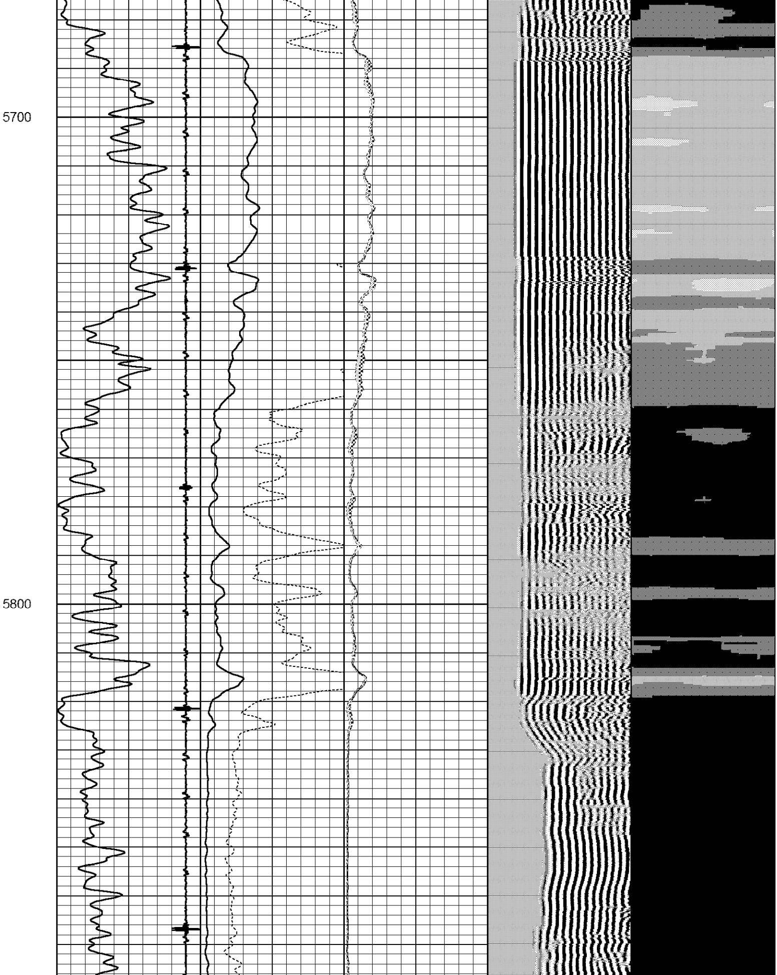
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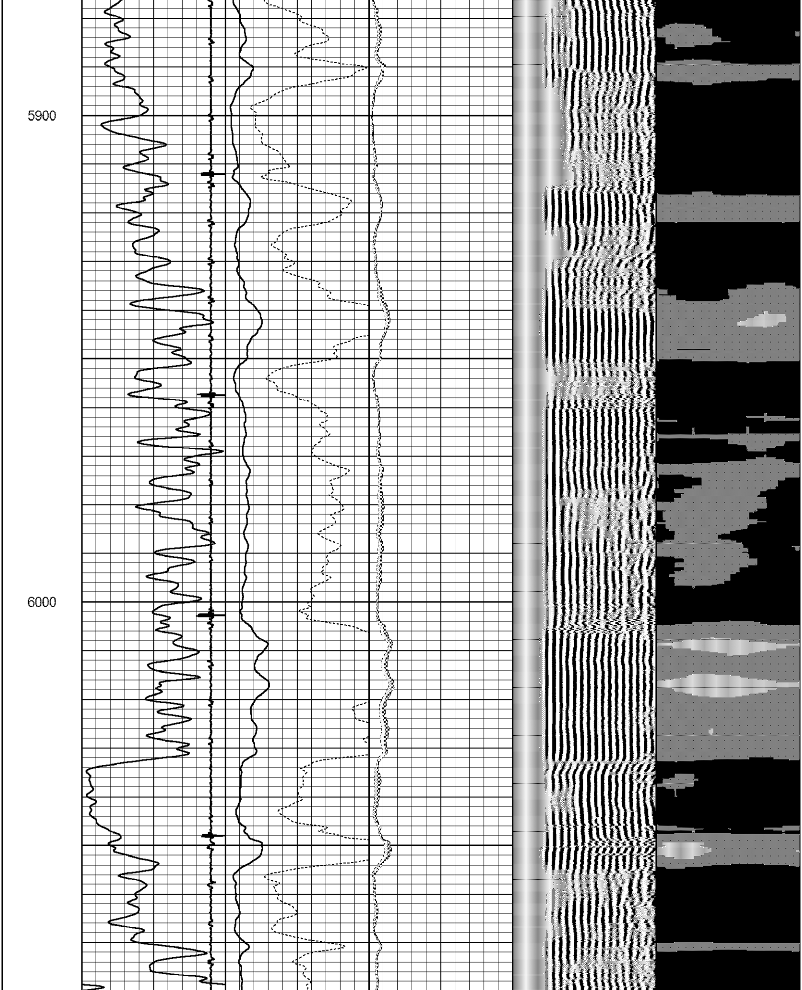
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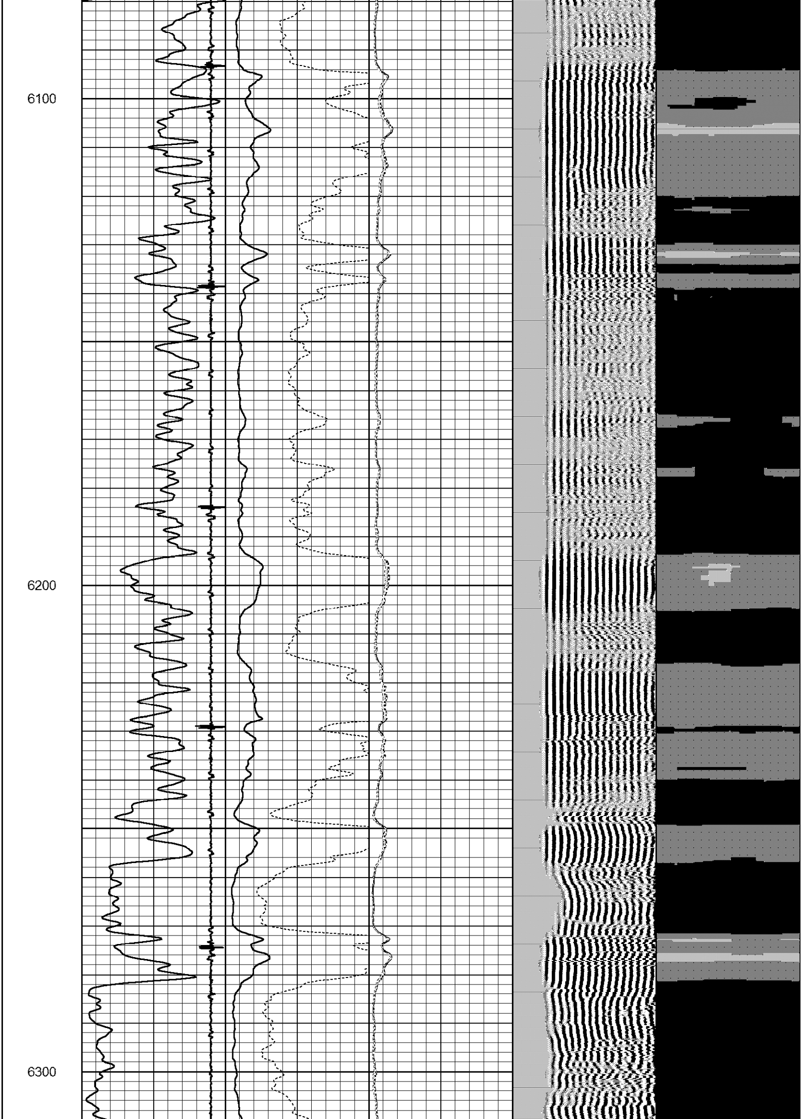
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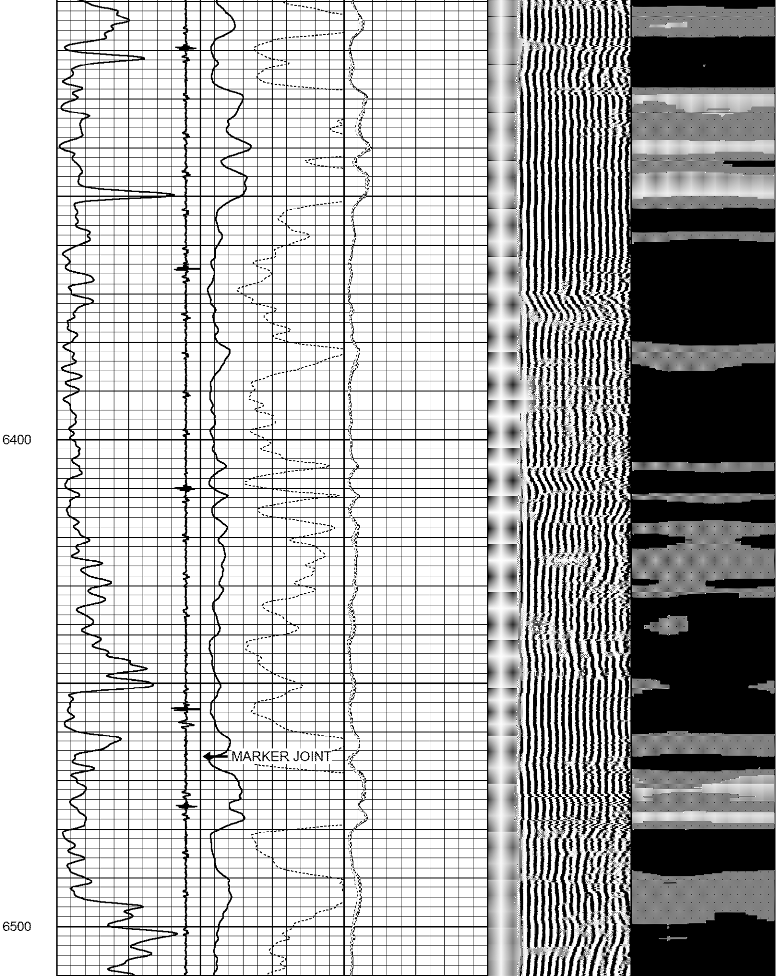
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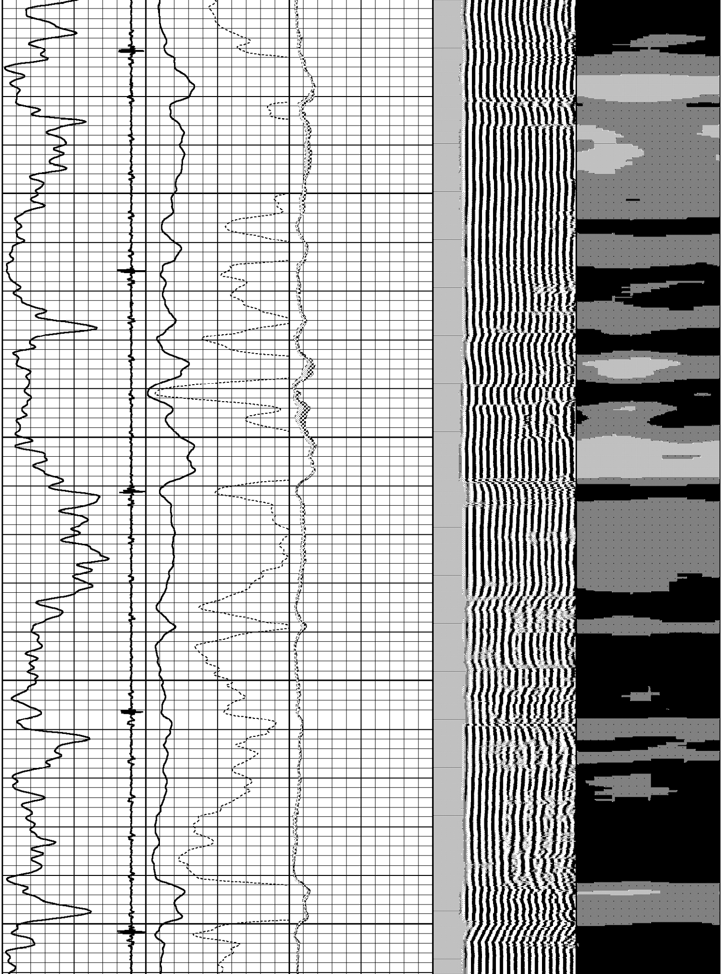
MARKER JOINT

6600



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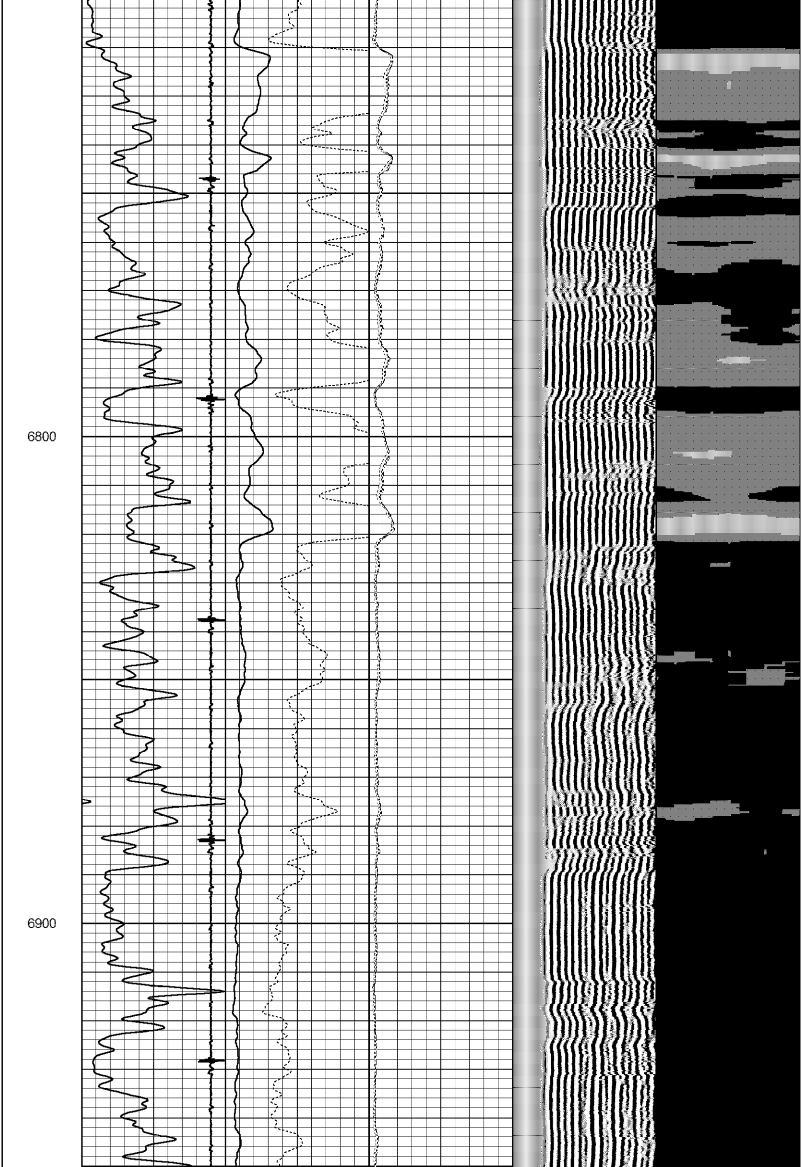
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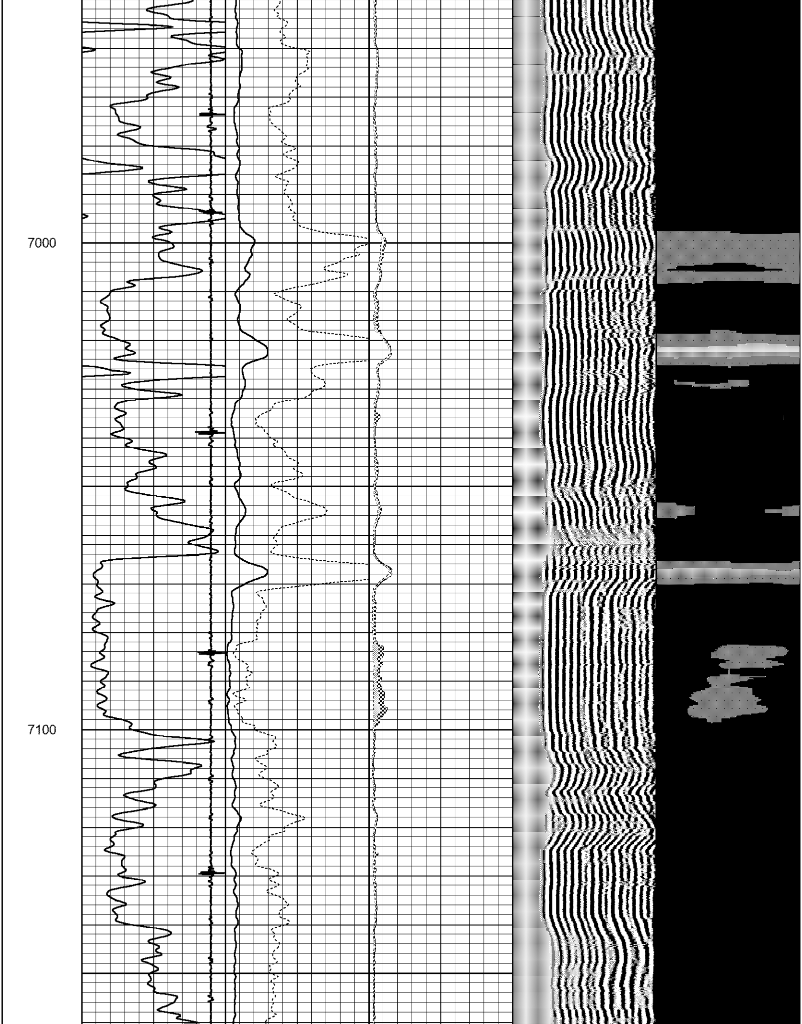
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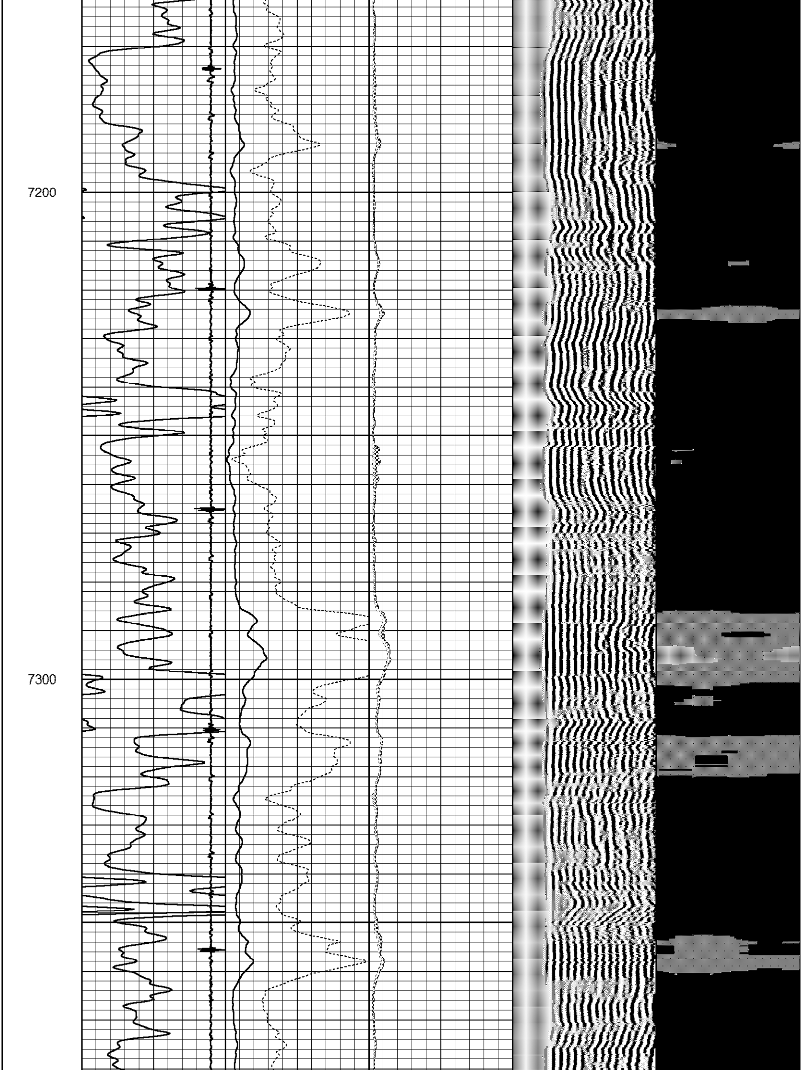
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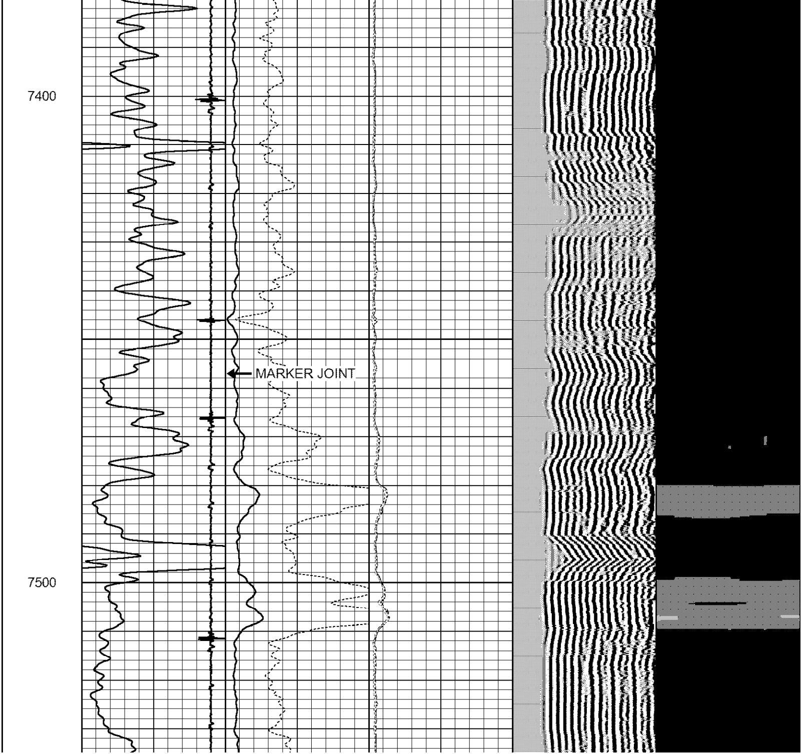
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MARKER JOINT
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Calibration Report

Database File:	snow king 9-32.db
Dataset Pathname:	pass4
Dataset Creation:	Mon Jan 12 09:02:38 2015 by Log Std Casedhole 10121

Gamma Ray Calibration Report

Type / Serial: Probe275dig / pr051112

SHOP CALIBRATION Sun Jun 13 14:33:21 1993

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		1.0000			GAPI/cps

PRIMARY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number:	4.5040904	
Tool Model:	Probe	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	118.567	ft

Master Calibration, performed Mon Jan 12 08:38:33 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.527	1.000	71.921	46.434	1.000
CAL	0.000	2.068				
5'	0.000	1.415	1.000	71.921	50.137	1.000
SUM						
S1	0.000	1.495	0.000	71.000	47.495	0.000
S2	0.000	1.459	0.000	71.000	48.677	0.000
S3	0.000	1.443	0.000	71.000	49.210	0.000
S4	0.000	1.459	0.000	71.000	48.677	0.000
S5	0.000	1.480	0.000	71.000	47.968	0.000
S6	0.000	1.523	0.000	71.000	46.615	0.000
S7	0.000	1.557	0.000	71.000	45.602	0.000
S8	0.000	1.553	0.000	71.000	45.716	0.000

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	2.068	1.000	0.000

Air Zero Calibration, performed Wed Apr 02 16:37:00 2014:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000