Schlumberger

Company: HUSKY OIL OPERATIONS LIMITED

Well: HUSKY et al KEELE RIVER L-52
Field: NORTH CLOVERLEAF
Province: NORTHWEST TERRITORIES *** MD ***

DIPOLE SHEAR
SONIC IMAGER LOG

N E B COPY

Province: NORTHWEST TERRITORIES
Field: NORTH CLOVERLEAF
Location: LSD: L-52
Well: HUSKY et al KEELE RIVER L-52
Company: HUSKY OIL OPERATIONS LIMITED

LSD: L-52
UWID: 300L526410124450

Elev.: K.B. 314.42 m
G.L. 310.17 m
D.F. 314.12 m

LOCATION

		Elev.:
Permanent Datum:	GROUND LEVEL	310.17 m
Log Measured From:	KELLY BUSHING	4.2 m above Perm. Datum
Drilling Measured From:	KELLY BUSHING	

API Serial No.
2052

	Run 1	Run 2	Run 3	Run 4
Logging Date	16-Mar-2008			
Run Number	ONE			
Depth Driller	895 m			
Schlumberger Depth	887 m			
Bottom Log Interval	871 m			
Top Log Interval	252 m			
Casing Driller Size @ Depth	244.500 mm @ 252 m			
Casing Schlumberger	252 m			
Bit Size	216.000 mm			
Type Fluid In Hole	GEL POLYMER			
MUD Density / Viscosity	1050 kg/m3 / 78 s			
MUD Fluid Loss / PH	6 cm3 / 9			
MUD Source Of Sample	FLOWLINE			
RM @ Measured Temperature	1.320 ohm.m @ 19 degC			
RMF @ Measured Temperature	2.092 ohm.m @ 18 degC			
RMC @ Measured Temperature	1.204 ohm.m @ 18 degC			
Source RMF / RMC	PRESSED / PRESSED			
RM @ MRT / RMF @ MRT	1.099 @ 27 / 1.721 @ 27			
Maximum Recorded Temperatures	27 degC			
Circulation Stopped Time	16-Mar-2008 14:45			
Logger On Bottom Time	16-Mar-2008 21:35			
Unit Number / Location	4301 NORMAN WELLS			
Recorded By	JENNIFER ROLLINGS			
Witnessed By	BARRY JOHNSON			

DEPTH SUMMARY LISTING

Date Created: 16-MAR-2008 22:53:19

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46A XXS
Serial Number:	6423	Serial Number:	2565	Serial Number:	6199
Calibration Date:	15-FEB-2008	Calibration Date:	15-FEB-2008	Length:	7800.14 M
Calibrator Serial Number:	4	Calibrator Serial Number:	-999	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P	Calibration Gain:	0.88	Rig Type:	LAND
Wheel Correction 1:	-4	Calibration Offset:	336.00		
Wheel Correction 2:	-5				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	51.60 M
Rig Up Length At Bottom:	51.60 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	0.50 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1. IDW IS PRIMARY DEPTH MEASUREMENT
2. Z-CHART USED AS SECONDARY DEPTH MEASUREMENT
3. MAIN PASS TIED INTO DOWN LOG AT BOTTOM AS PER SLB DEPTH PROCEDURE
4. CMTD HAS DONE 3 JOBS PRIOR TO THIS RIH
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: FMI-DSI-PPC-HNGS	OS1:
OS2: AIT-PEX-CMR-ECS-TLD2	OS2:
OS3: MDT POSSIBLE	OS3:
OS4: MSCT POSSIBLE	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
ALL INTERVALS CONFIRMED ON LOCATION	
OPERATOR LICENSE NO. IS 1171, WID IS 2052	
PPC RAN CENTRALIZED FOR CEMENT & HOLE VOLUME, ALL ARMS SET TO POWERED	
PRESSURE APPLIED TO PPC AS REQUIRED	
DSI RAN CENTRALIZED WITH CMEZS AND PPC	
DSI RAN IN P&S MODE AND UPPER & LOWER DIPOLE MODES	
REPEAT PASS: TD -100M ABOVE TD	
ALL INTERVALS: TD-SURFACE CASING	
CALIPER NOT REPEATING DUE TO TOOL IN DIFFERENT AXIS ON MAIN PASS	
LOGGER'S DEPTH IS SHALLOW THAN DRILLER'S DUE TO FILL IN HOLE	
DSI RELABELLED IN FIELD FOR FINAL PRINTS	
MAXIMUM TEMPERATURE TAKEN FROM HEAD THEROMETERS	
LRAT: READY ON ARRIVAL	
LAT: SUNDAY MARCH 16 11:30	
RIG UP STARTED: MARCH 16 @ 20:00	
RIG: AKITA 14	
CREW: LARRY DUDUS, BILLY LIM, GRANT PROPERZI, RICK JACOBS	

RUN 1		RUN 2	
SERVICE ORDER #:	11958997	SERVICE ORDER #:	
PROGRAM VERSION:	15C0-309	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

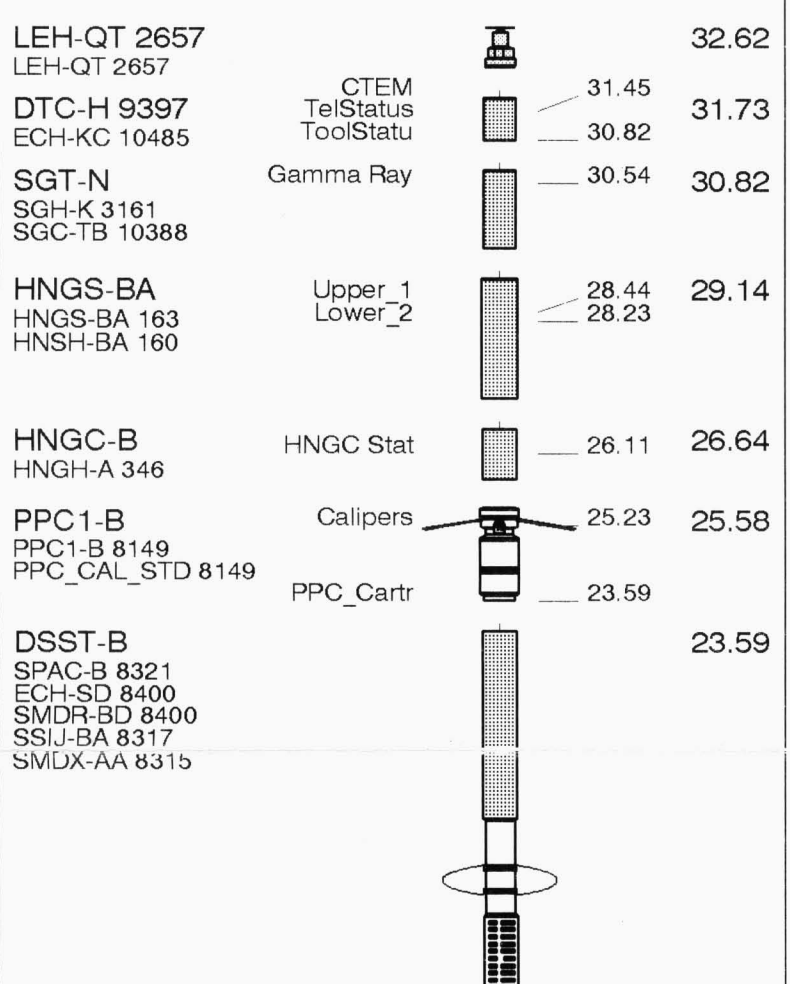
EQUIPMENT DESCRIPTION

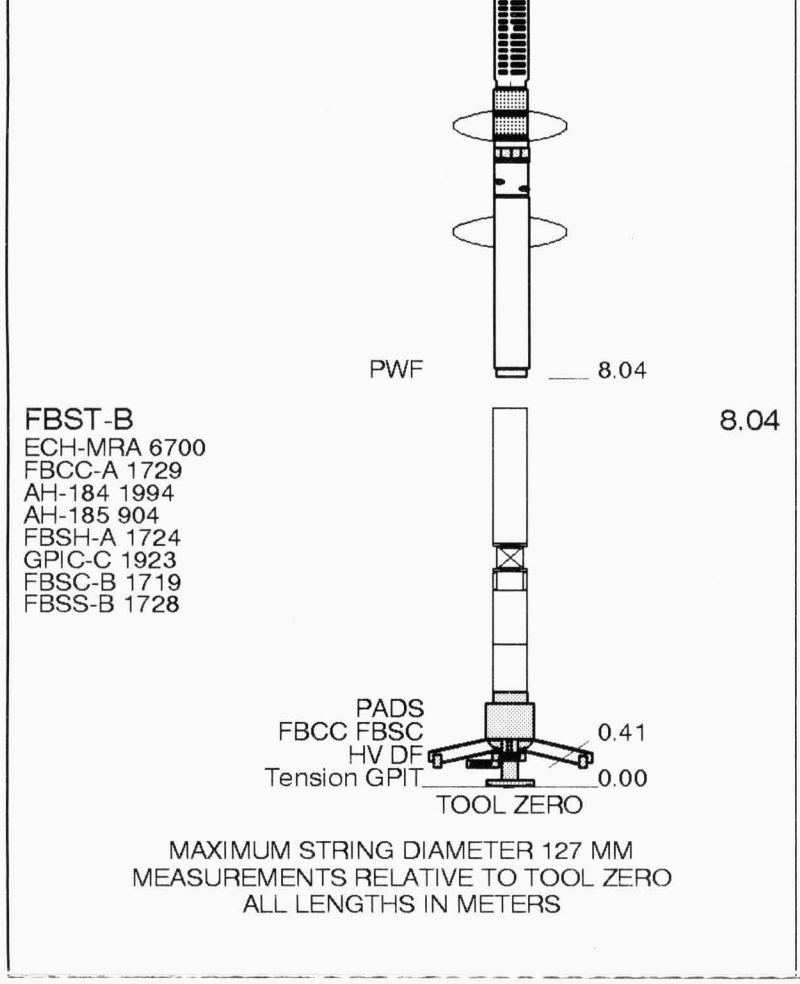
RUN 1 | RUN 2

SURFACE EQUIPMENT

GSR-U 1237
GSR-U/Y
WITM (DTS)-A

DOWNHOLE EQUIPMENT





Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 26.75 M3

Cement Volume = 10.98 M3 (assuming 177.80 MM casing O.D.)

Computed from 887.0 M to 252.1 M using data channel(s) CRD1_PPC1 CRD2_PPC1 CRD3_PPC1 CRD4_PPC1

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

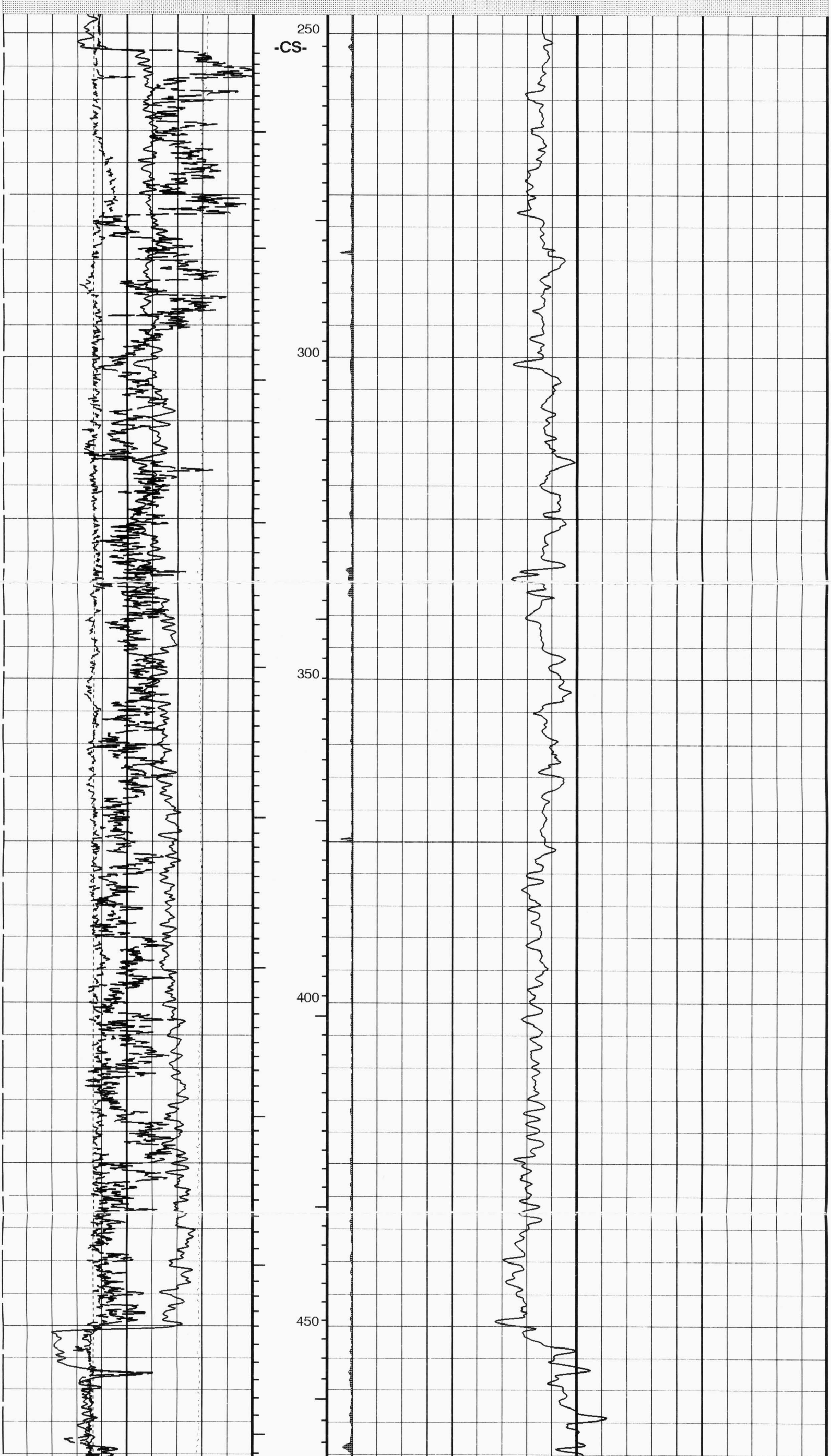
Time Mark Every 60 S

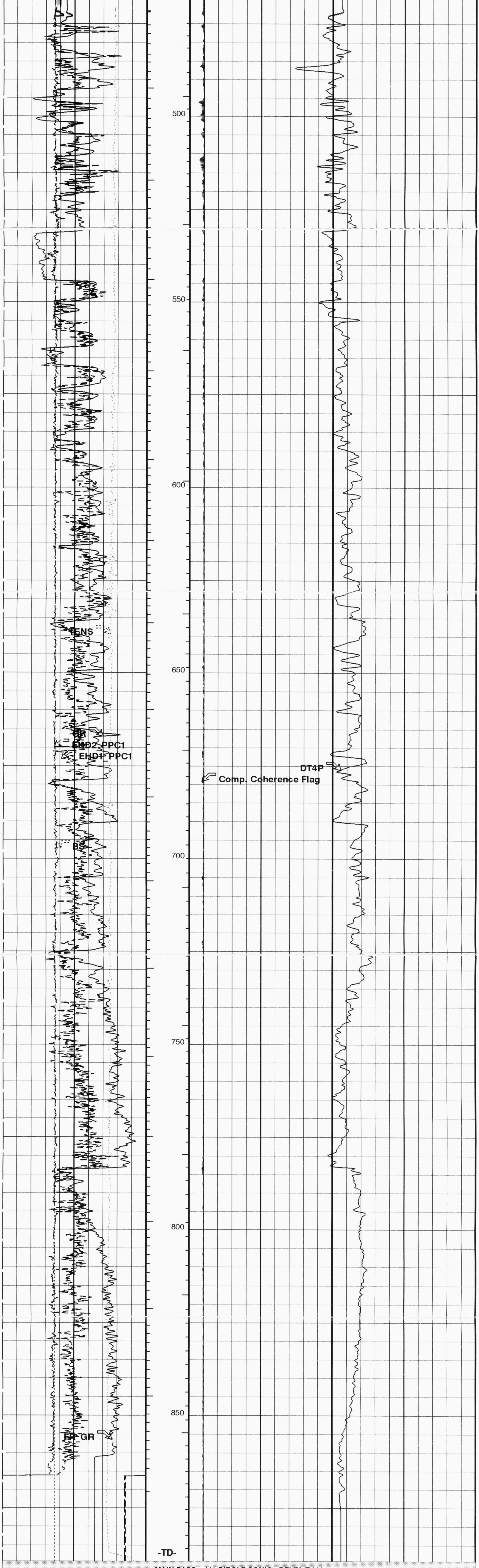
Tension (TENS)	25000 (N)	0
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)	125 (MM)	375
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)	125 (MM)	375
Gamma Ray (GR)	0 (GAPI)	150
Bit Size (BS)	125 (MM)	375

Low Comp Coherence Flag

Delta-T Comp - P & S (DT4P) 500 (US/M) 100

MAIN PASS: *** DIPOLE SONIC - DELTA-T ***





MAIN PASS: *** DIPOLE SONIC - DELTA-T ***

Bit Size (BS)	125 (MM) 375	
Gamma Ray (GR)	0 (GAPI) 150	
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)	125 (MM) 375	
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)	125 (MM) 375	
Tension (TENS)	25000 (N) 0	
Delta-T Comp - P & S (DT4P)	500 (US/M) 100	
Low Comp Coherence Flag		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	131.234	US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	590.551	US/M
DTF	Delta-T Fluid	620.079	US/M
FILG	Label Fill Gap Control - Monopole P&S	COMP_SHEAR	
ITTS	Integrated Transit Time Source	DTCO	

LFC	Label Formation Character - Monopole P&S	COMP_FIRST	
MCS	Mean Casing Slowness	187.008	US/M
MTXG	Monopole Transmitter Geometry	4724	MM
NWI4	Number Waveform Items 4	8	
RSMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	8534	MM
SAS4	STC Sonic Array Status - Monopole P&S	255	
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	246.063	US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	590.551	US/M
SSW4	STC Source Waveform - Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit - Monopole Stoneley	590.551	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	2559.06	US/M
TWI4	STC Integration Time Window - Monopole P&S	500	US
	PPC1-B: Powered Positioning Deveice/Caliper 1		
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
	SGT-N: Scintillation Gamma Ray Tool - N		
BHS	Borehole Status	OPEN	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	260	M
TIVD	TVD of Tie-in Point	260	M
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	177.8	MM
HVCS	Integrated Hole Volume Caliper Selection	PPC1_Calipers	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	895.00	M
TDL	Total Depth - Logger	887.00	M
	System and Miscellaneous		
BS	Bit Size	216.000	MM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	887	M

Format: DSI_S2 Vertical Scale: 1:600 Graphics File Created: 17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24		
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 26.75 M3

Cement Volume = 10.98 M3 (assuming 177.80 MM casing O.D.)

Computed from 887.0 M to 252.1 M using data channel(s) CRD1_PPC1 CRD2_PPC1 CRD3_PPC1 CRD4_PPC1

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

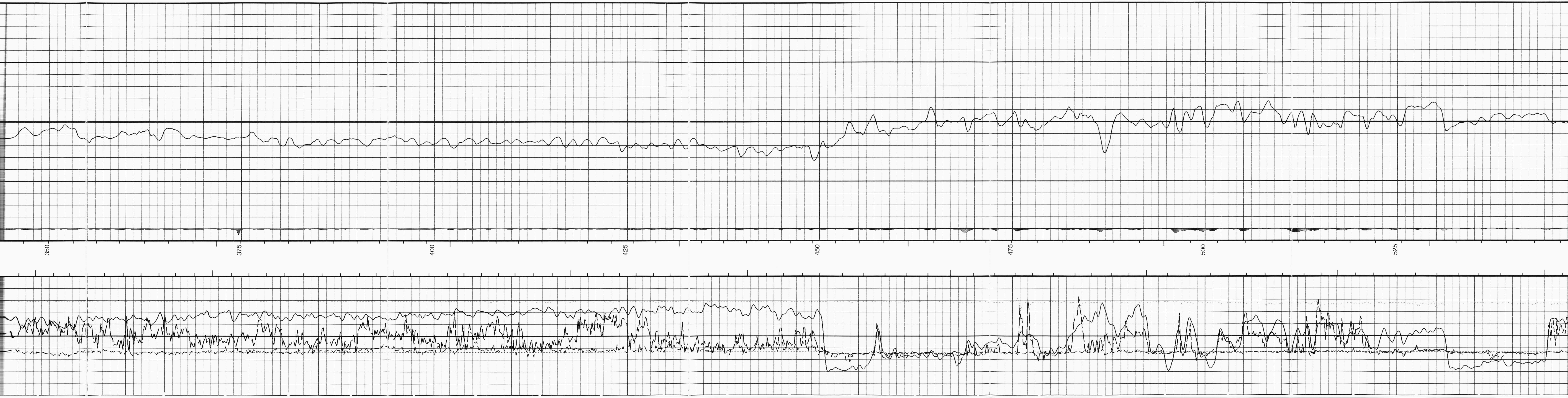
Time Mark Every 60 S

Tension (TENS)	25000 (N)	0
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)	125 (MM)	375
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)	125 (MM)	375
Gamma Ray (GR)	0 (GAPI)	150
Bit Size (BS)	125 (MM)	375

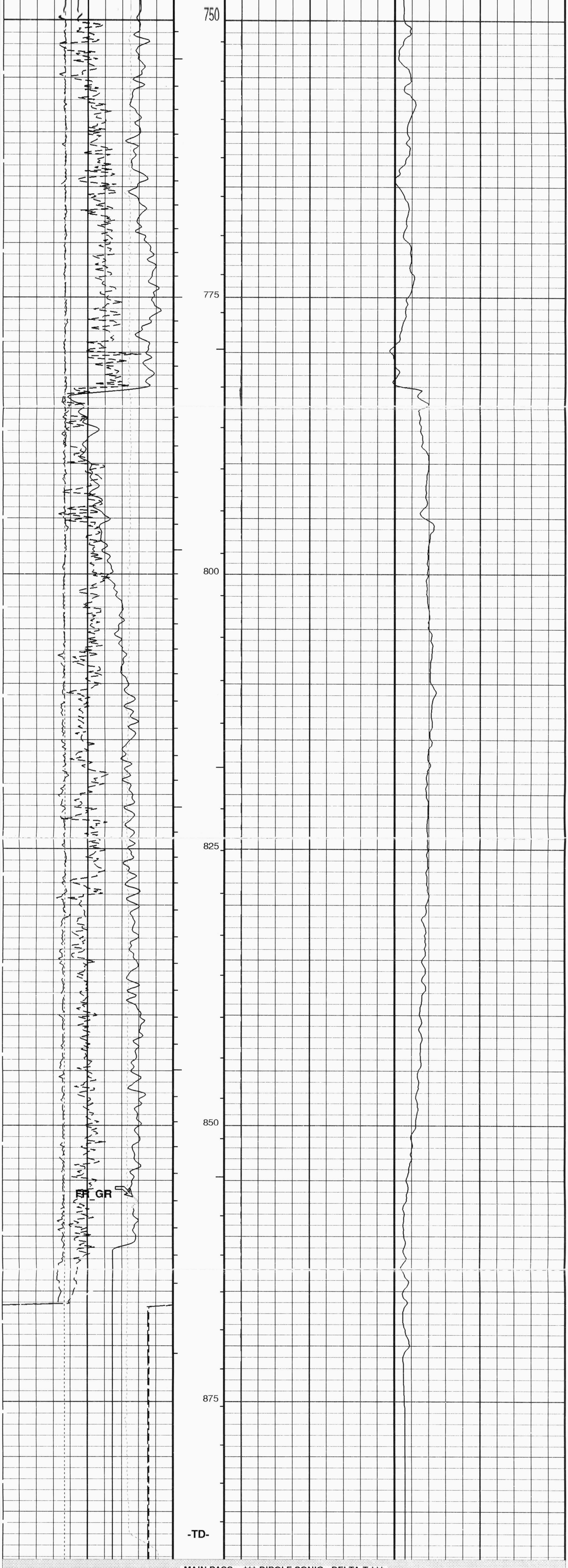
Low Comp Coherence Flag

Delta-T Comp - P & S (DT4P) 500 (US/M) 100

MAIN PASS: *** DIPOLE SONIC - DELTA-T ***


350
375
400
425
450
475
500
525

550
575
600
625
650
675
700
725
TENS
GR
EHD2_PPC1
EHD1_PPC1
BS
Comp. Coherence Flag
DT4P



MAIN PASS: *** DIPOLE SONIC - DELTA-T ***

Bit Size (BS)		
125	(MM)	375
Gamma Ray (GR)		
0	(GAPI)	150
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)		
125	(MM)	375
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)		
125	(MM)	375
Tension (TENS)		
25000	(N)	0

Delta-T Comp - P & S (DT4P)		
500	(US/M)	100

Low Comp Coherence Flag

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	131.234	US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	590.551	US/M
DTF	Delta-T Fluid	620.079	US/M
FILG	Label Fill Gap Control - Monopole P&S	COMP_SHEAR	
ITTS	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character - Monopole P&S	COMP_FIRST	
MCS	Mean Casing Slowness	187.008	US/M
MTXG	Monopole Transmitter Geometry	4724	MM
NWI4	Number Waveform Items 4	8	
RSMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	8534	MM
SAS4	STC Sonic Array Status - Monopole P&S	255	
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	246.063	US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	590.551	US/M
SSW4	STC Source Waveform - Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit - Monopole Stoneley	590.551	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	2559.06	US/M
TWI4	STC Integration Time Window - Monopole P&S	500	US
	PPC1-B: Powered Positioning Deveice/Caliper 1		
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
	SGT-N: Scintillation Gamma Ray Tool - N		
BHS	Borehole Status	OPEN	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	260	M
TIVD	TVD of Tie-in Point	260	M
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	

FCD	Future Casing (Outer) Diameter	177.8	MM
HVCS	Integrated Hole Volume Caliper Selection	PPC1_Calipers	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	895.00	M
TDL	Total Depth - Logger	887.00	M
System and Miscellaneous			
BS	Bit Size	216.000	MM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	887	M

Format: DSI_S5 Vertical Scale: 1:240 Graphics File Created: 17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M
DEFAULT	FMI_DSI_CAL_NGS_012PUP	FN:19	PRODUCER	16-Mar-2008 21:55	887.4 M	700.6 M

Output DLIS Files

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REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

TENS_REP Curve (TENS_REP)
25000 (N) 0

EHD2_PPC1_REP Curve (EHD2_PPC1_REP)
125 (MM) 375

EHD1_PPC1_REP Curve (EHD1_PPC1_REP)
125 (MM) 375

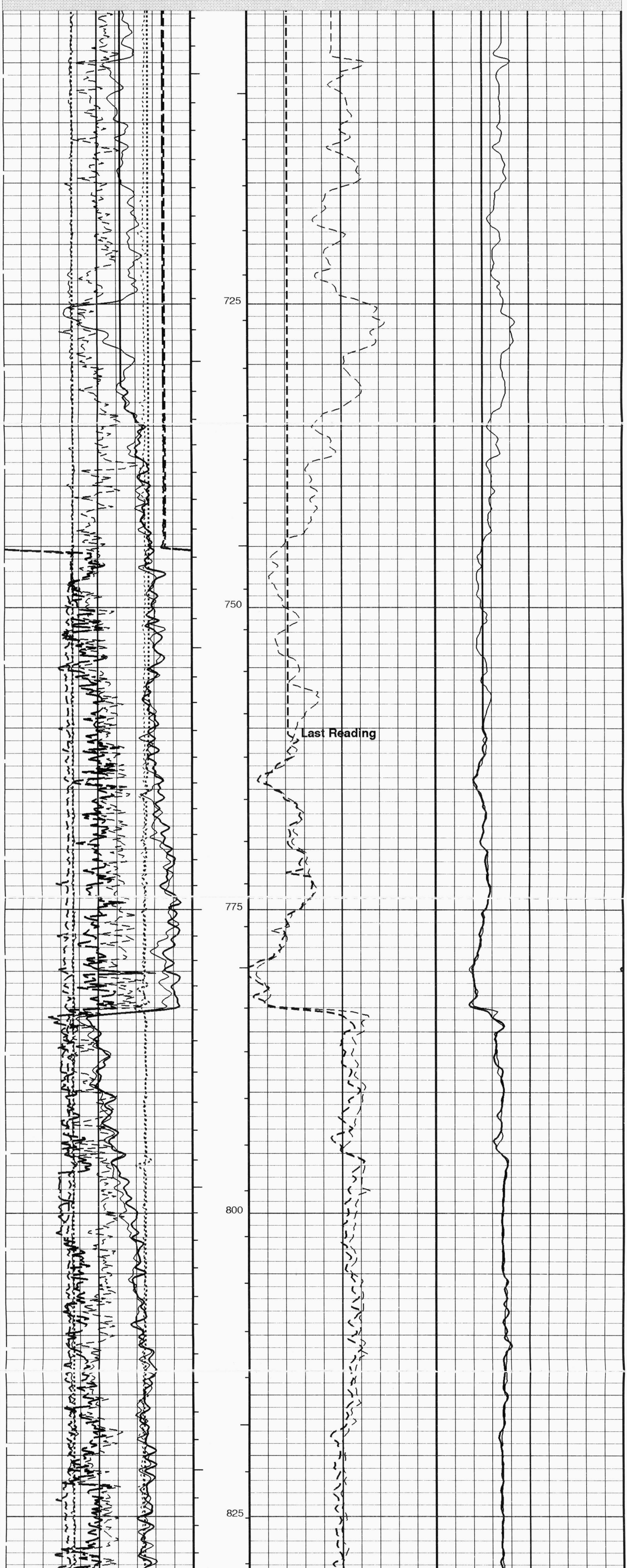
GR_REP Curve (GR_REP)
0 (GAPI) 150

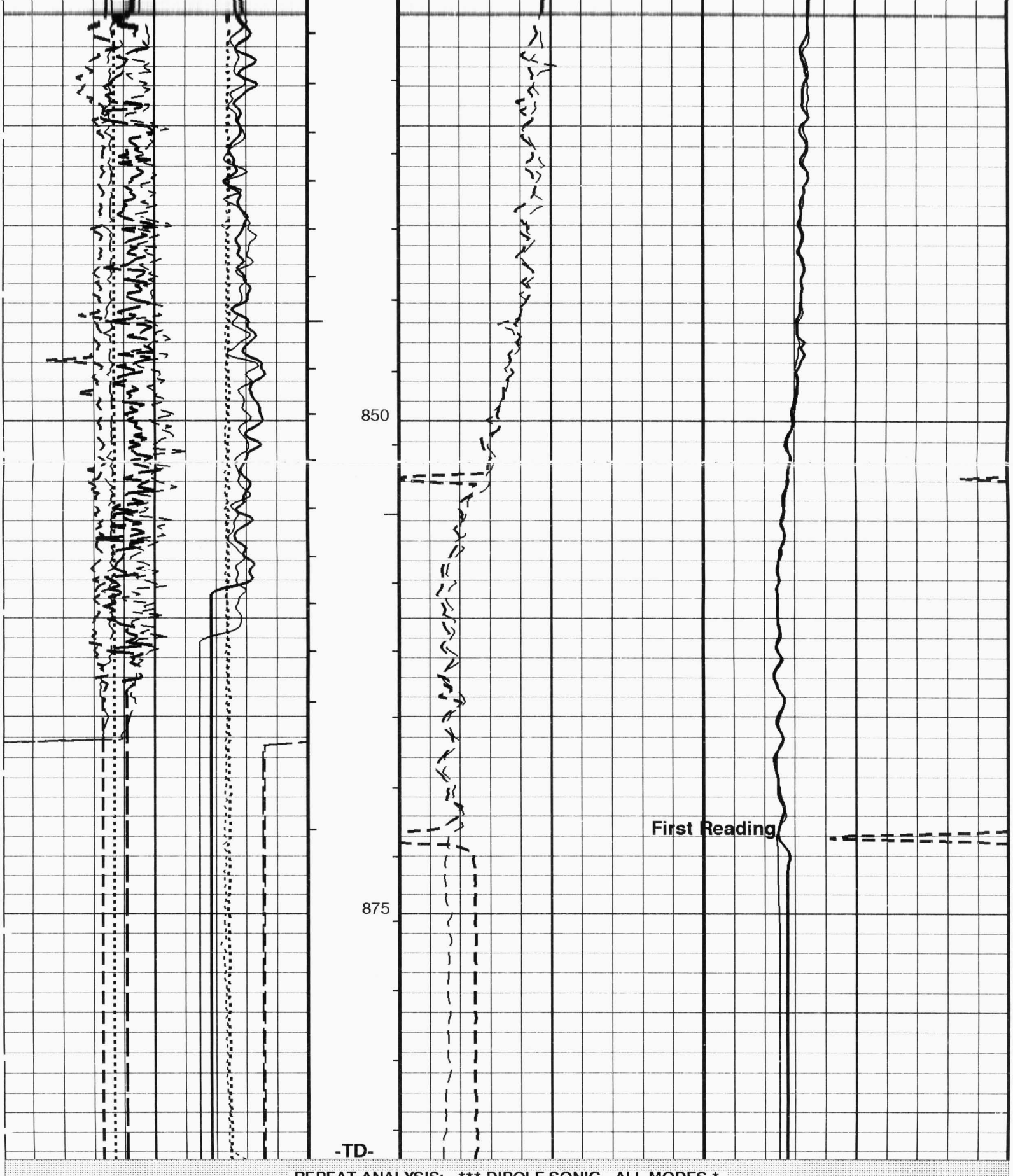
DSST_STC_DT1_REP Curve (DT1_REP)
600 (US/M) 100

BS_REP Curve (BS_REP)
125 (MM) 375

DSST_STC_DT4P_REP Curve (DT4P_REP)
600 (US/M) 100

REPEAT ANALYSIS: *** DIPOLE SONIC - ALL MODES *





REPEAT ANALYSIS: *** DIPOLE SONIC - ALL MODES *

BS_REP Curve (BS_REP) 125 (MM) 375	DSST_STC_DT4P_REP Curve (DT4P_REP) 600 (US/M) 100
GR_REP Curve (GR_REP) 0 (GAPI) 150	DSST_STC_DT1_REP Curve (DT1_REP) 600 (US/M) 100
EHD1_PPC1_REP Curve (EHD1_PPC1_REP) 125 (MM) 375	
EHD2_PPC1_REP Curve (EHD2_PPC1_REP) 125 (MM) 375	
TENS_REP Curve (TENS_REP) 25000 (N) 0	

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DSST-B: Dipole Shear Imager - B			
ITTS	Integrated Transit Time Source	DTCO	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	8534	MM
SAS1	STC Sonic Array Status - Lower Dipole	255	
SFM1	STC Filter - Lower Dipole	B1-3K	
PPC1-B: Powered Positioning Deveice/Caliper 1			
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
DIR: Directional Survey Computation			
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	260	M
TIVD	TVD of Tie-in Point	260	M
HOLEV: Integrated Hole/Cement Volume			
FCD	Future Casing (Outer) Diameter	177.8	MM
HVCS	Integrated Hole Volume Caliper Selection	PPC1_Calipers	
System and Miscellaneous			
BS	Bit Size	216.000	MM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	887	M

Format: DSI_ALL_DT_REP Vertical Scale: 1:240 Graphics File Created: 17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M
DEFAULT	FMI_DSI_CAL_NGS_012PUP	FN:19	PRODUCER	16-Mar-2008 21:55	887.4 M	700.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS) 25000 (N) 0	
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1) 125 (MM) 375	
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1) 125 (MM) 375	
Gamma Ray (GR) 0 (GAPI) 150	Low Shear Coherence Flag / Low Comp Coherence Flag
Poisson's Ratio (PR) 0 (----) 0.5	Delta-T Shear - P & S (DT4S) 600 (US/M) 100
Bit Size (BS) 125 (MM) 375	Delta-T Comp - P & S (DT4P) 600 (US/M) 100

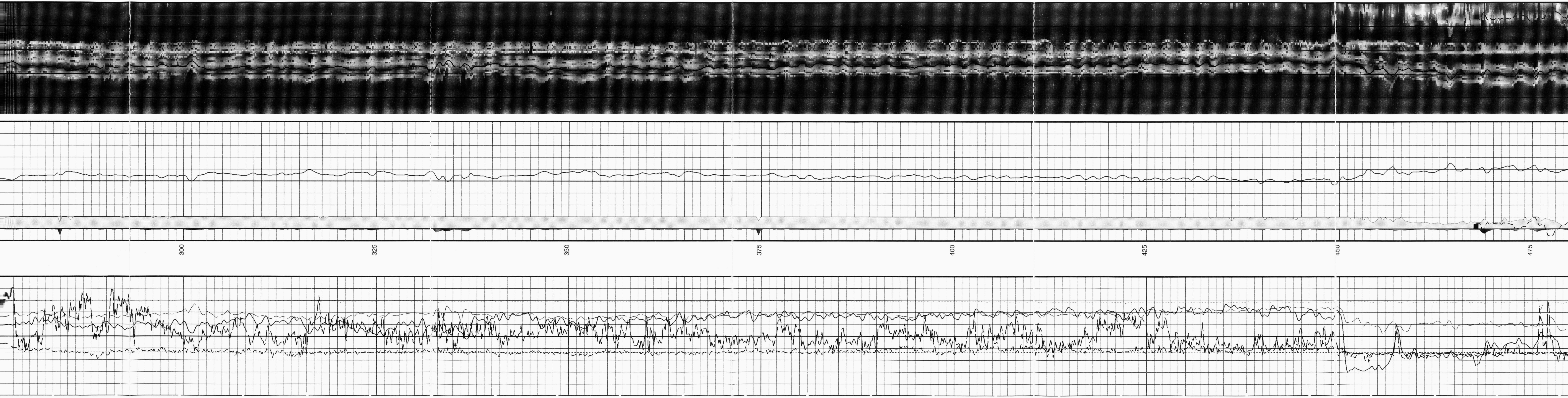
Min Amplitude Max

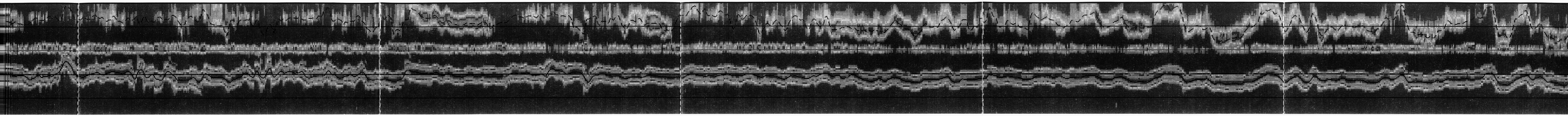
Rec.Array P&S Slow Proj. CVDL (SPR4) 100 (US/M) 600

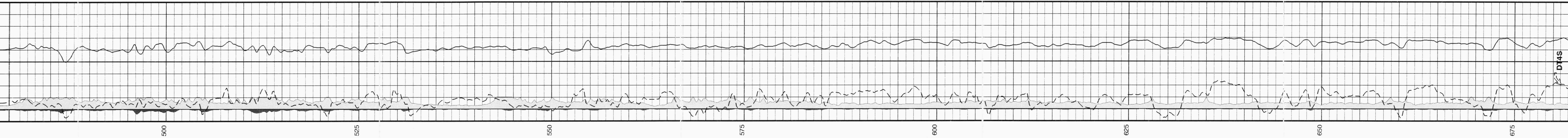
Delta-T Shear / RA - P & S (DTRS) 100 (US/M) 600

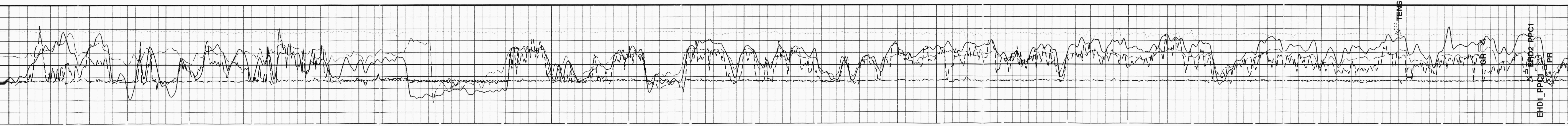
Delta-T Comp / RA - P & S (DTRP) 100 (US/M) 600

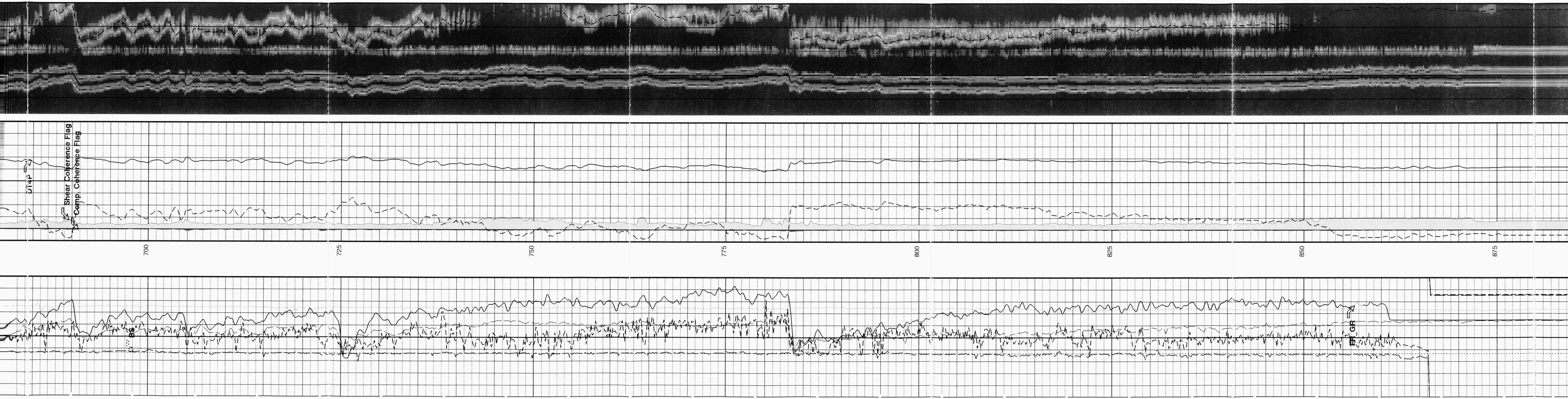
MAIN PASS: *** DIPOLE SONIC - P & S IMAGE ***

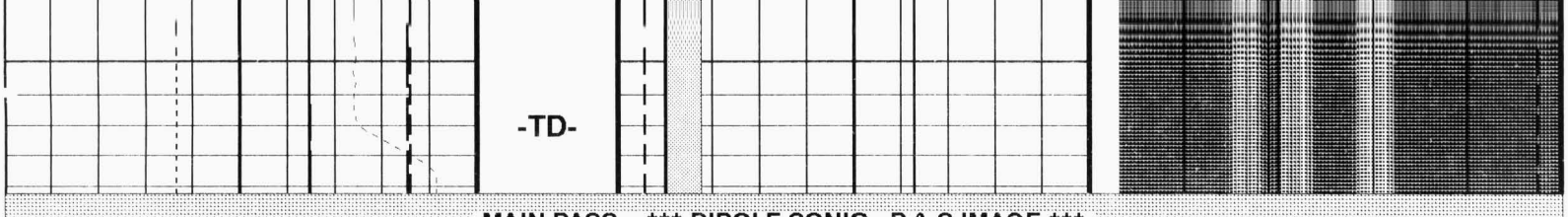

300
325
350
375
400
425
450
475




DT4S
500
525
550
575
600
625
650
675


TENS
GR
EHD2_PPC1
EHD1_PPC1
PR


Shear Coherence Flag
Comp. Coherence Flag
DT4P
700
725
750
775
800
825
850
875
BS
GR



MAIN PASS: *** DIPOLE SONIC - P & S IMAGE ***

Bit Size (BS) 125 (MM) 375	Delta-T Comp - P & S (DT4P) 600 (US/M) 100	Delta-T Comp / RA - P & S (DTRP) 100 (US/M) 600
Poisson's Ratio (PR) 0 (----) 0.5	Delta-T Shear - P & S (DT4S) 600 (US/M) 100	Delta-T Shear / RA - P & S (DTRS) 100 (US/M) 600
Gamma Ray (GR) 0 (GAPI) 150	Low Comp Coherence Flag	Min Amplitude Max; Rec.Array P&S Slow Proj. CVDL (SPR4) 100 (US/M) 600
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1) 125 (MM) 375	Low Shear Coherence Flag	
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1) 125 (MM) 375		
Tension (TENS) 25000 (N) 0		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	131.234	US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	590.551	US/M
DDE4	Digitizing Delay 4	0	US
DDEX	Digitizing Delay X	0	US
DSI4	Digitizer Sample Interval 4	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCO Channel	PS_COMP	
DTF	Delta-T Fluid	620.079	US/M
DTSS	Shear Delta-T Source for DTSM Channel	LOWER_DIPOLE	
DWC4	Digitizer Word Count 4	512	
DWCX	Digitizer Word Count X	512	
FILG	Label Fill Gap Control - Monopole P&S	COMP_SHEAR	
LFC	Label Formation Character - Monopole P&S	COMP_FIRST	
MCS	Mean Casing Slowness	187.008	US/M
MTXG	Monopole Transmitter Geometry	4724	MM
NWI4	Number Waveform Items 4	8	
NWIX	Number Waveform Items X	0	
RSMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	8534	MM
SAM4	DSST Sonic Acquisition Mode 4 - High Frequency Monopole Mode for P&S	EVEN	
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert	OFF	
SAS4	STC Sonic Array Status - Monopole P&S	255	
SBO4	STC Search Band Offset - Monopole P&S	500	US
SBR4	STC Baseline Removal - Monopole P&S	ON	
SBW4	STC Search Bandwidth - Monopole P&S	2000	US
SFC4	STC Formation Character - Monopole P&S	SELECTABLE	
SFM4	STC Filter - Monopole P&S	B3-20K	
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	246.063	US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	590.551	US/M
SLL4	STC Slowness Lower Limit - Monopole P&S	131.234	US/M
SST4	STC Slowness Step - Monopole P&S	6.56168	US/M
SSW4	STC Source Waveform - Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit - Monopole Stoneley	590.551	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	2559.06	US/M
SUL4	STC Slowness Upper Limit - Monopole P&S	787.402	US/M
SWD4	STC Slowness Width - Monopole P&S	32.8084	US/M
TBF4	STC Time for Baseline Fill - Monopole P&S	300	US
TLL4	STC Time Lower Limit - Monopole P&S	150	US
TST4	STC Time Step - Monopole P&S	50	US
TUL4	STC Time Upper Limit - Monopole P&S	3660	US
TWD4	STC Time Width - Monopole P&S	1000	US
TWI4	STC Integration Time Window - Monopole P&S	500	US
TWSX	Transmitter Waveform Select X	0	
	PPC1-B: Powered Positioning Deveice/Caliper 1		
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
	SGT-N: Scintillation Gamma Ray Tool - N		
BHS	Borehole Status	OPEN	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	260	M
TIVD	TVD of Tie-in Point	260	M
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	895.00	M
TDL	Total Depth - Logger	887.00	M
	System and Miscellaneous		
BS	Bit Size	216.000	MM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSI_P&S_MODE Vertical Scale: 1:240 Graphics File Created: 17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24		
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24	889.3 M	247.0 M

OP System Version: 15C0-309

MCM

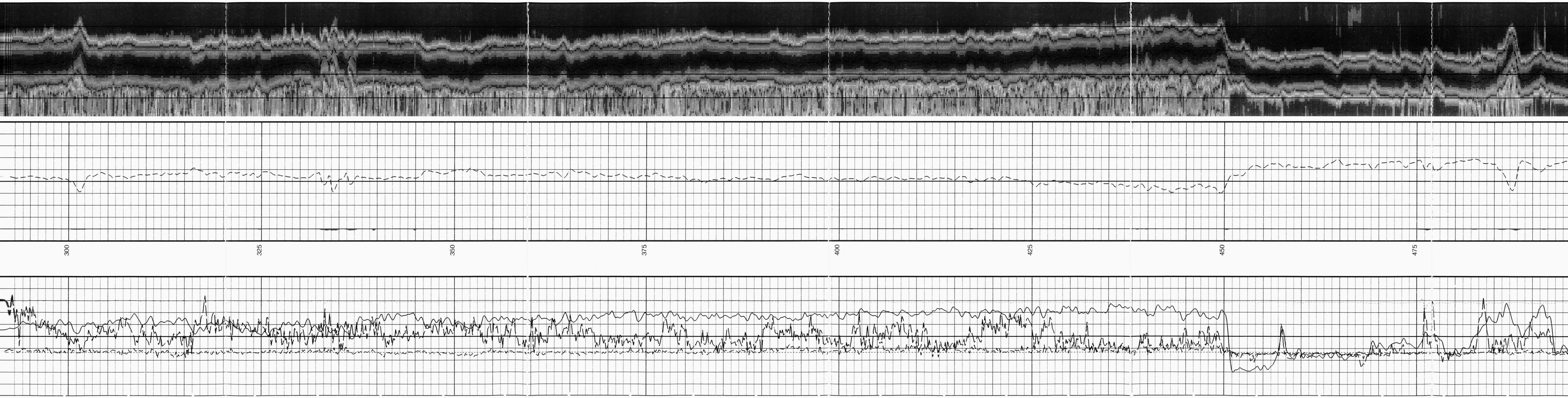
FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

PIP SUMMARY

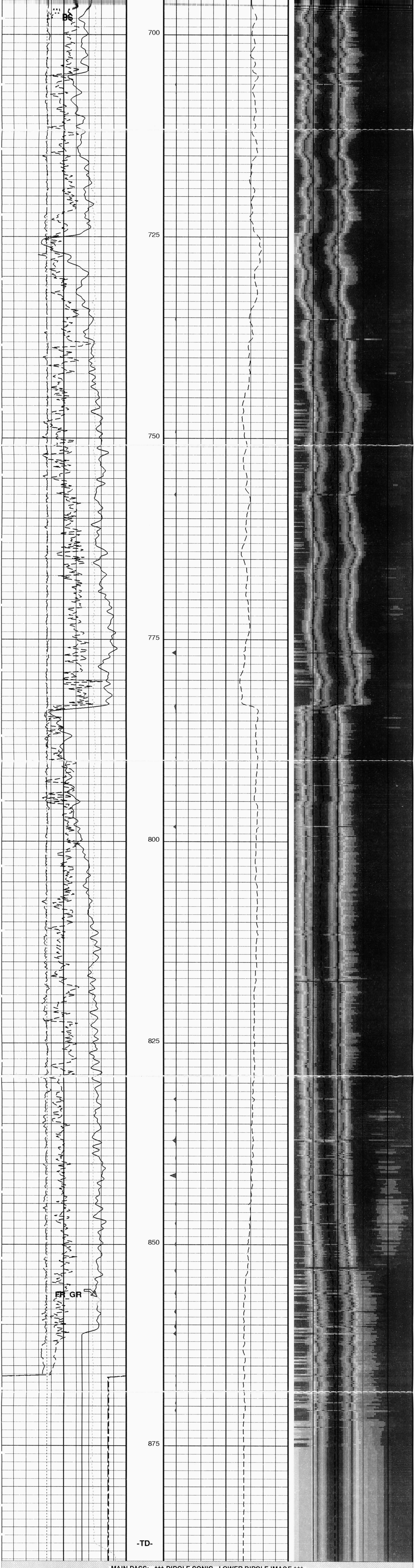
Time Mark Every 60 S

Tension (TENS) 25000 (N) 0		
PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1) 125 (MM) 375		
PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1) 125 (MM) 375		
Gamma Ray (GR) 0 (GAPI) 150	Low Shear Coherence Flag	Min Amplitude Max; Rec.Array L.Dipole Slow Proj. CVDL (SPR1) 200 (US/M) 1200
Bit Size (BS) 125 (MM) 375	Delta-T Shear - Lower Dipole (DT1) 1200 (US/M) 200	Delta-T Shear / RA - Lower Dipole (DT1R) 200 (US/M) 1200

MAIN PASS: *** DIPOLE SONIC - LOWER DIPOLE IMAGE ***


300
325
350
375
400
425
450
475

500
525
550
575
600
625
650
675
TENS
GR
EHD2_PPC1
EHD1_PPC1
DT1
Coherence Flag



MAIN PASS: *** DIPOLE SONIC - LOWER DIPOLE IMAGE ***

Bit Size (BS) 125 (MM) 375	Delta-T Shear - Lower Dipole (DT1) 1200 (US/M) 200	Delta-T Shear / RA - Lower Dipole (DT1R) 200 (US/M) 1200
Gamma Ray (GR) 0 (GAPI) 150	Low Shear Coherence Flag	Min Amplitude Max Rec.Array L.Dipole Slow Proj. CVDL (SPR1)

200	(US/M)	1200

PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)		
125	(MM)	375

PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)		
125	(MM)	375

Tension (TENS)		
25000	(N)	0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
DDE1	Digitizing Delay 1	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source - Dipole Shear	DONT_USE	
DSHL	Label Slowness Lower Limit - Dipole Shear	246.063	US/M
DSHU	Label Slowness Upper Limit - Dipole Shear	2542.65	US/M
DSI1	Digitizer Sample Interval 1	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCO Channel	PS_COMP	
DWC1	Digitizer Word Count 1	512	
DWCX	Digitizer Word Count X	512	
LTXG	Lower Dipole Transmitter Geometry	3962	MM
NWI1	Number Waveform Items 1	8	
NWIX	Number Waveform Items X	0	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	8534	MM
SAM1	DSST Sonic Acquisition Mode 1 - Lower Dipole Mode	EVEN	
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status - Lower Dipole	255	
SBO1	STC Search Band Offset - Lower Dipole	3000	US
SBW1	STC Search Bandwidth - Lower Dipole	8000	US
SFC1	STC Formation Character - Lower Dipole	SELECTABLE	
SFM1	STC Filter - Lower Dipole	B1-3K	
SLL1	STC Slowness Lower Limit - Lower Dipole	246.063	US/M
SST1	STC Slowness Step - Lower Dipole	13.1234	US/M
SSW1	STC Source Waveform - Lower Dipole	WF_SAM1	
SUL1	STC Slowness Upper Limit - Lower Dipole	2542.65	US/M
SWD1	STC Slowness Width - Lower Dipole	131.234	US/M
TBF1	STC Time for Baseline Fill - Lower Dipole	0	US
TLL1	STC Time Lower Limit - Lower Dipole	600	US
TST1	STC Time Step - Lower Dipole	200	US
TUL1	STC Time Upper Limit - Lower Dipole	15912.5	US
TWD1	STC Time Width - Lower Dipole	2000	US
TWI1	STC Integration Time Window - Lower Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
	PPC1-B: Powered Positioning Deveice/Caliper 1		
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	260	M
TIVD	TVD of Tie-in Point	260	M
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	895.00	M
TDL	Total Depth - Logger	887.00	M
	System and Miscellaneous		
BS	Bit Size	216.000	MM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSI_LOWER_DIPOLE Vertical Scale: 1:240 Graphics File Created: 17-Mar-2008 00:24

OP System Version: 15C0-309

MCM

FBST-B	15C0-309	DSST-B	15C0-309
PPC1-B	15C0-309	HNGC-B	SPC-3530-NUCL
HNGS-BA	SPC-3530-NUCL	SGT-N	15C0-309
DTC-H	9397		

Input DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_015PUP	FN:24	PRODUCER	16-Mar-2008 23:14	889.3 M	241.6 M

Output DLIS Files

DEFAULT	FMI_DSI_CAL_NGS_018PUP	FN:27	PRODUCER	17-Mar-2008 00:24
REDUCED	FMI_DSI_CAL_NGS_018PUP	FN:28	PRODUCER	17-Mar-2008 00:24

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Full-Bore Scanner - B Wellsite Calibration - Caliper Calibration							
Before: 11-Mar-2008 11:34							
Caliper 1 Small Jig	203.2	N/A	193.8	N/A	N/A	N/A	MM
Caliper 2 Small Jig	203.2	N/A	200.2	N/A	N/A	N/A	MM
Caliper 1 Large Jig	304.8	N/A	288.1	N/A	N/A	N/A	MM
Caliper 2 Large Jig	304.8	N/A	294.3	N/A	N/A	N/A	MM
Full-Bore Scanner - B Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 16-Mar-2008 20:48							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	6	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	1076	N/A	N/A	N/A	
Full-Bore Scanner - B Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 16-Mar-2008 20:48							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	6	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	5	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	725	N/A	N/A	N/A	
Powered Positioning Deveice/Caliper 1 Wellsite Calibration - PPC1 Caliper Calibration							
Before: 11-Mar-2008 5:39							
PPC1 Radius 1 Raw Small Radius	88.90	N/A	112.4	N/A	N/A	12.70	MM
PPC1 Radius 1 Raw Large Radius	203.2	N/A	219.8	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Small Radius	88.90	N/A	85.19	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Large Radius	203.2	N/A	197.3	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Small Radius	88.90	N/A	110.5	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Large Radius	203.2	N/A	217.4	N/A	N/A	12.70	MM
PPC1 Radius 4 Raw Small Radius	88.90	N/A	86.44	N/A	N/A	12.70	MM
PPC1 Radius 4 Raw Large Radius	203.2	N/A	197.8	N/A	N/A	12.70	MM
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Master: 4-Jan-2008 9:55 Before: 13-Mar-2008 10:56							
Na 511 Peak Loc	40.00	39.78	39.64	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.38	14.17	N/A	N/A	2.000	%
High Voltage	1150	1258	1230	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.7	143.0	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.442	8.769	N/A	N/A	2.000	%
Temperature	15.50	22.14	6.570	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	35.30	33.29	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check							
Master: 4-Jan-2008 9:55 Before: 13-Mar-2008 10:56							
Na 511 Peak Loc	40.00	39.66	39.76	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.86	15.01	N/A	N/A	2.000	%
High Voltage	1150	1273	1246	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.7	143.3	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.234	8.636	N/A	N/A	2.000	%
Temperature	15.50	21.49	5.965	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	35.28	33.29	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2							
Master: 4-Jan-2008 9:55 Before: 13-Mar-2008 10:56							
Coincidence Count Rate Ratio	1.000	1.001	0.9992	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration							
Master: 4-Jan-2008 9:50							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.0	--	--	--	--	
Th Peak Res	7.000	6.765	--	--	--	--	%
Background Count Rate	142.5	82.05	--	--	--	--	CPS
Gain Ratio	1.000	1.009	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration							
Master: 4-Jan-2008 9:50							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.2	--	--	--	--	
Th Peak Res	7.000	7.094	--	--	--	--	%
Background Count Rate	142.5	80.00	--	--	--	--	CPS
Gain Ratio	1.000	1.013	--	--	--	--	
Scintillation Gamma Ray Tool - N Wellsite Calibration - Detector Calibration							
Before: 13-Mar-2008 8:59							
Gamma Ray (Jig - Bkg)	165.2	N/A	165.2	N/A	N/A	15.02	GAPI
Gamma Ray (Calibrated)	167.0	N/A	167.0	N/A	N/A	15.00	GAPI

Full-Bore Scanner - B / Equipment Identification

Primary Equipment:		
FullBore Scanner Sonde	FBSS - B	1728
FullBore Scanner Sonde Upper part	FBSH - A	1724
FullBore Scanner Sonde Cartridge	FBSC - B	1719
GPIT Cartridge - C	GPIC - C	1923
Insulating Sub	AH - 185	904
Flex Joint	AH - 184	1994
FullBore Scanner Control Cartridge	FBCC - A	1729
Auxiliary Equipment:		
Electronics Cartridge Housing	ECH - MRA	6700

Full-Bore Scanner - B Wellsite Calibration

Caliper Calibration

Phase	Caliper 1 Small Jig MM	Value	Phase	Caliper 2 Small Jig MM	Value
Before		193.8	Before		200.2
172.7 (Minimum)	203.2 (Nominal)	233.7 (Maximum)	172.7 (Minimum)	203.2 (Nominal)	233.7 (Maximum)
Phase	Caliper 1 Large Jig MM	Value	Phase	Caliper 2 Large Jig MM	Value
Before		288.1	Before		294.3
259.1 (Minimum)	304.8 (Nominal)	350.5 (Maximum)	259.1 (Minimum)	304.8 (Nominal)	350.5 (Maximum)

Before: 11-Mar-2008 11:34

Powered Positioning Deveice/Caliper 1 / Equipment Identification

Primary Equipment:		
PPC Powered Positioning Device/Caliper	PPC1 - B	8149
PPC1 Caliper Standard	PPC_ -	8149
Auxiliary Equipment:		

Powered Positioning Deveice/Caliper 1 Wellsite Calibration

PPC1 Caliper Calibration

Phase	PPC1 Radius 1 Raw Small Radius MM	Value	Phase	PPC1 Radius 1 Raw Large Radius MM	Value
Before		112.4	Before		219.8
30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)	154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)
Phase	PPC1 Radius 2 Raw Small Radius MM	Value	Phase	PPC1 Radius 2 Raw Large Radius MM	Value
Before		85.19	Before		197.3
30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)	154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)

Phase	PPC1 Radius 3 Raw Small Radius MM	Value
Before		110.5
	30.48 (Minimum) / 88.90 (Nominal) / 142.2 (Maximum)	

Phase	PPC1 Radius 3 Raw Large Radius MM	Value
Before		217.4
	154.9 (Minimum) / 203.2 (Nominal) / 246.4 (Maximum)	

Phase	PPC1 Radius 4 Raw Small Radius MM	Value
Before		86.44
	30.48 (Minimum) / 88.90 (Nominal) / 142.2 (Maximum)	

Phase	PPC1 Radius 4 Raw Large Radius MM	Value
Before		197.8
	154.9 (Minimum) / 203.2 (Nominal) / 246.4 (Maximum)	

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Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC - B 4	405
Auxiliary Equipment:		
HNGC Housing	HNGH - A	346

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	163
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	160
Gamma Source Radioactive	GSR - U	1237

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Na 511 Peak Res %	High Voltage V	Na 1785 Peak Loc	Na 1785 Peak Res %	Temperature DEGC	Na Count Rate CPS
Master	39.78	15.38	1258	143.7	8.442	22.14	35.30
Before	39.64	14.17	1230	143.0	8.769	6.570	33.29
(Minimum)	37.50	12.00	900.0	135.0	7.000	-28.89	10.00
(Nominal)	40.00	15.50	1150	142.6	8.500	15.50	45.00
(Maximum)	43.50	19.00	1600	150.3	11.00	60.00	100.0

Master: 4-Jan-2008 9:55 Before: 13-Mar-2008 10:56

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Na 511 Peak Res %	High Voltage V	Na 1785 Peak Loc	Na 1785 Peak Res %	Temperature DEGC	Na Count Rate CPS
Master	39.66	14.86	1273	142.7	8.234	21.49	35.28
Before	39.76	15.01	1246	143.3	8.636	5.965	33.29
(Minimum)	37.50	12.00	900.0	135.0	7.000	-28.89	10.00
(Nominal)	40.00	15.50	1150	142.6	8.500	15.50	45.00
(Maximum)	43.50	19.00	1600	150.3	11.00	60.00	100.0

Master: 4-Jan-2008 9:55 Before: 13-Mar-2008 10:56

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.001
Before		0.9992
	0.9500 (Minimum) / 1.000 (Nominal) / 1.050 (Maximum)	

Master: 4-Jan-2008 9:55

Before: 13-Mar-2008 10:56

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Th Peak Loc	Th Peak Res %	Background Count Rate CPS	Gain Ratio
Master	41.00	211.0	6.765	82.05	1.009
(Minimum)	38.00	201.0	5.000	10.00	0.9400
(Nominal)	40.00	209.6	7.000	142.5	1.000
(Maximum)	43.00	218.3	9.000	265.0	1.060

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Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Th Peak Loc	Th Peak Res %	Background Count Rate CPS	Gain Ratio
Master	41.00	211.2	7.094	80.00	1.013
(Minimum)	38.00	201.0	5.000	10.00	0.9400
(Nominal)	40.00	209.6	7.000	142.5	1.000
(Maximum)	43.00	218.3	9.000	265.0	1.060

Master: 4-Jan-2008 9:50

Scintillation Gamma Ray Tool - N / Equipment Identification

Primary Equipment:		
Scintillation Gamma Cartridge	SGC - TB	10388
Scintillation Gamma Detector	SGD - TAB	
Auxiliary Equipment:		
Scintillation Gamma Housing	SGH - K	3161
Gamma Source Radioactive	GSR - U/Y	

Scintillation Gamma Ray Tool - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Gamma Ray (Jig - Bkg) GAPI	Gamma Ray (Calibrated) GAPI
Before	10.66	165.2	167.0
(Minimum)	0	150.2	152.0
(Nominal)	30.00	165.2	167.0
(Maximum)	120.0	180.2	182.0

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DTS Telemetry Tool / Equipment Identification

Primary Equipment:		
DTC-H Auxiliary Cartridge	DTCH - A	9397
DTC-H Telemetry Cartridge	DTCH - A	9397
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH - KC	10485

Company: HUSKY OIL OPERATIONS LIMITED

Schlumberger

Well: HUSKY et al KEELE RIVER L-52
Field: NORTH CLOVERLEAF
Province: NORTHWEST TERRITORIES
MD

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