

Company: **BP EXPLORATION (ALASKA), INC.**

Well: **MT. ELBERT-01**

Field: **MILNE POINT UNIT**

Borough: **NORTH SLOPE** State: **ALASKA**

POWER POSITIONING CALIPER TOOL
BOREHOLE GRAPHICS / CALIPER LOG
14-FEB-2007

Borough:	NORTH SLOPE		
Field:	MILNE POINT UNIT		
Location:	1242' FNL & 4183' FEL		
Well:	MT. ELBERT-01		
Company:	BP EXPLORATION (ALASKA), INC.		
LOCATION			
1242' FNL & 4183' FEL AT SURFACE		Elev.: K.ft G.I D.I	
Permanent Datum:	MEAN SEA LEVEL		Elev.: 0 ft
Log Measured From:	KELLY BUSHING		54.8 ft ab
Drilling Measured From:	KELLY BUSHING		
API Serial No.	50-029-23302-00	Section	Township
		30	13N

Logging Date	14-Feb-2007			
Run Number	TWO			
Depth Driller	3000 ft			
Schlumberger Depth	2996 ft			
Bottom Log Interval	2902 ft			
Top Log Interval	1952 ft			
Casing Driller Size @ Depth	9.625 in		@	1954 ft
Casing Schlumberger	1952 ft			
Bit Size	8.750 in			
Type Fluid In Hole	OIL BASED MUD			
Density	Viscosity	79 s		
Fluid Loss	PH			
Source Of Sample	NA			
RM @ Measured Temperature			@	
RMF @ Measured Temperature			@	
RMC @ Measured Temperature			@	
Source RMF	RMC	NA		
RM @ MRT	RMF @ MRT	NA	NA	
Maximum Recorded Temperatures	38 degF	@ 38	@ 38	@
Circulation Stopped	13-Feb-2007		15:30	
Logger On Bottom	15-Feb-2007		1:30	
Unit Number	Location	2266 PRUDHOE BAY		
Recorded By	B.PHILPOTT			
Witnessed By	TIM COLLET			

DEPTH SUMMARY LISTING					
Date Created: 15-FEB-2007 17:17:07					
Depth System Equipment					
Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JA	Type:	CMTD-B/A	Type:	7-46P-XS
Serial Number:	2656	Serial Number:	2699	Serial Number:	3001
Calibration Date:	13-JAN-2007	Calibration Date:	12-JAN-2007	Length:	14200.00 FT
Calibrator Serial Number:	18	Calibrator Serial Number:	265	Conveyance Method: Wireline Rig Type: LAND	
Calibration Cable Type:	7-46P-XS	Calibration Gain:	0.92		
Wheel Correction 1:	-6	Calibration Offset:	539.00		
Wheel Correction 2:	2				

Wheel Correction 2. 72					
Depth Control Parameters					
Log Sequence: First Log In the Well					
Rig Up Length At Surface:					
Rig Up Length At Bottom:					
Rig Up Length Correction:					
Stretch Correction:					
Tool Zero Check At Surface:					
Depth Control Remarks					
1. PRIMARY DEPTH CONTROL USED					
2.					
3.					
4.					
5.					
6.					
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 OF 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.					
OTHER SERVICES1			OTHER SERVICES2		
OS1: RT SCANNER, TLD,			OS1:		
OS2: HGNS, EPT, DSI, OBMI			OS2:		
OS3: CMR, HNGS, ECS			OS3:		
OS4: MDT			OS4:		
OS5:			OS5:		
REMARKS: RUN NUMBER 1			REMARKS: RUN NUMBER 2		
RT SANNER RAN IN COMPUTE OBM STANDOFF, WITH TWO 1.5" STANDOFFS.					
RT SCANNER LOGGED IN 3_BholeCorr_BasicLogs_RadialProcessing Mode.					
TRIPLE LITHODENSITY TOOL LOGGED IN VERY HIGH RESOLUTION.					
COMPENSATED NEUTRON TOOL, ELECTROMAGNETIC PROPAGTION TOOL, ELEMENTAL CAPTURE SPECTROSCOPY SONDE, AND COMBINABLE MAGNETIC RESONANCE TOOL RAN WITH 180 DEG BOWSPRINGS FOR ECCENTRALIZATION.					
DIPOLE SONIC TOOL LOGGED IN ANISOTROPY, P & S , UPPER DIPOLE AND LOWER DIPOLE MODES.					
RAN WITH 2 POWERED POSITIONING CALIPERS FOR CENTRALIZATION					
COMBINABLE MAGNETIC RESONANCE TOOL LOGGING MODE: OIL BASED MUD DEPTH LOG- B MODE					
ECHO SPACING: 200 US, NUMBER OF ECHOES: 600, T2 CUTOFF: 33 MSEC					
MODULAR DYNAMIC TESTER RAN WITH TWO PACKERS, SIX 450 CC'S SAMPLE CHAMBERS, ONE GL SAMPLE CHAMBER AND ONE 1 GL CHAMBER WITH TANNER GAS TO PREVENT FLOW LINE FREEZING.					
MDT SAMPLES WERE TAKEN AT 2012', 2025', 2036', 2047', 2151' AND 2061'. UNABLE TO RETRIEVE SAMPLES AT 2032', AND 2039' DUE TO LOST SEALS.					
MDT TOTAL PUMPED OUT TIME: 865 MINS.					
AFE# GS 2420H33					
RIG: DOYON 14					
CREW: J.CAPEN, D.COLE, D.WEATHERS, T.RAUBINGER					
RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

RUN 2

SURFACE EQUIPMENT

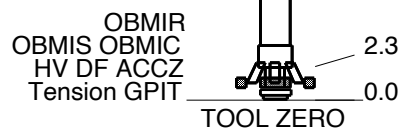
WITM (EDTS)-A

DOWNHOLE EQUIPMENT

LEH-QT		102.4
LEH-QT		
EDTC-B	Mud Tempe	99.5
EDTH-B	CTEM	96.0
EDTC-B 8231	Gamma Ray	94.2
	EDTCB Ele	93.0
PPC1-B	Calipers	91.9
PPC1-B 8229		93.0
PPC_CAL_STD	PPC_Cartr	86.5
DSST-B		86.5
SPAC-B 8111		
ECH-SD		
SMDR-BD 8114		
SSIJ-BA 8160		
SMDX-AA 8113		
	PWF	35.5
PPC2-B	Calipers	34.4
PPC2-B 8228		35.5
PPC_CAL_STD	PPC_Cartr	29.0
AH-SFT		29.0
AH-SFT		
AH-184		21.0
GPIT-C		19.0

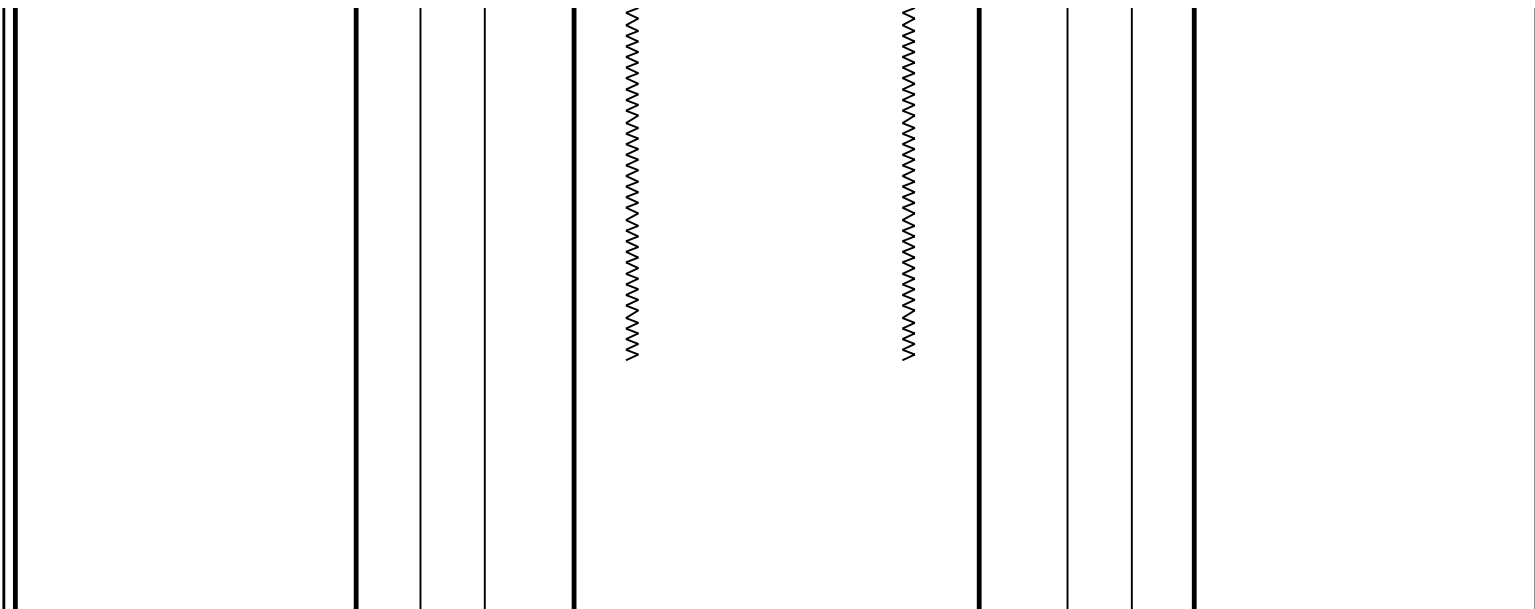
OBMT-F
OBMH-A
OBMC-A 823
OBMS-F 766

15.0



MAXIMUM STRING DIAMETER 5.38 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

[illegible]



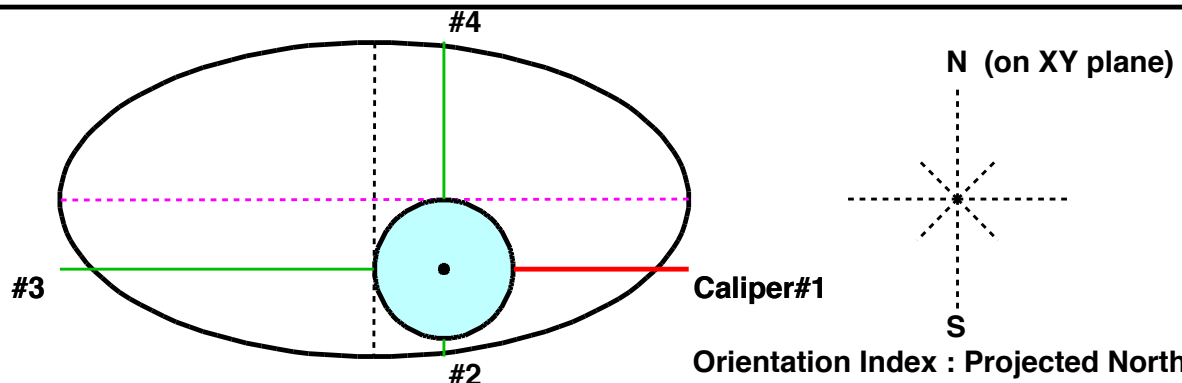
Schlumberger

PPC1 – BOREHOLE GRAPHICS

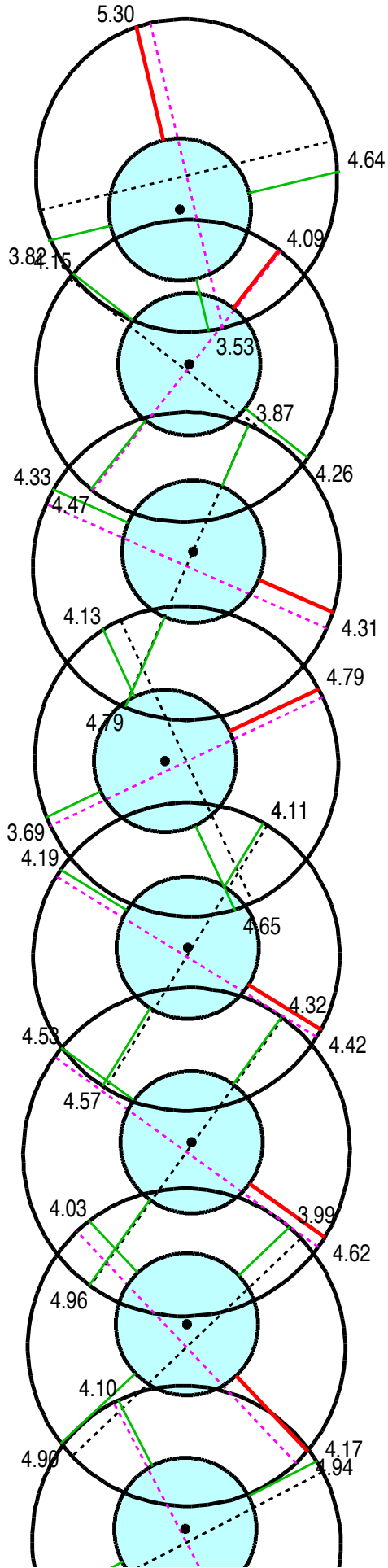
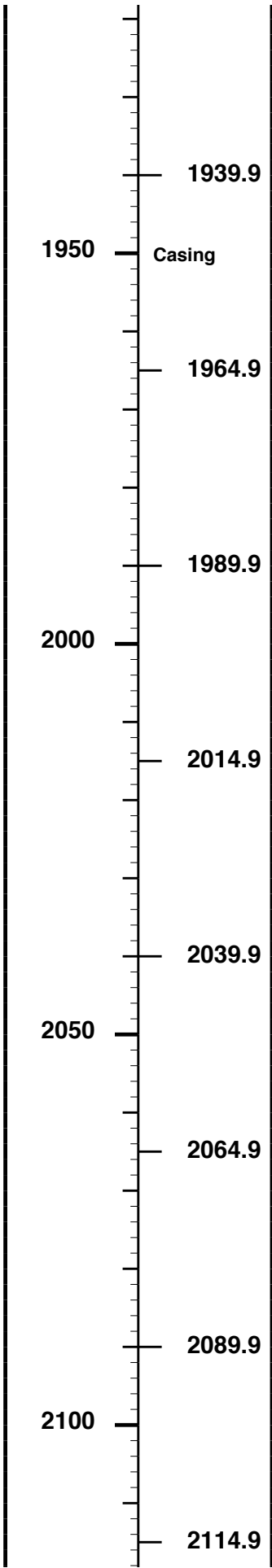
MAXIS Field Log

Parameters

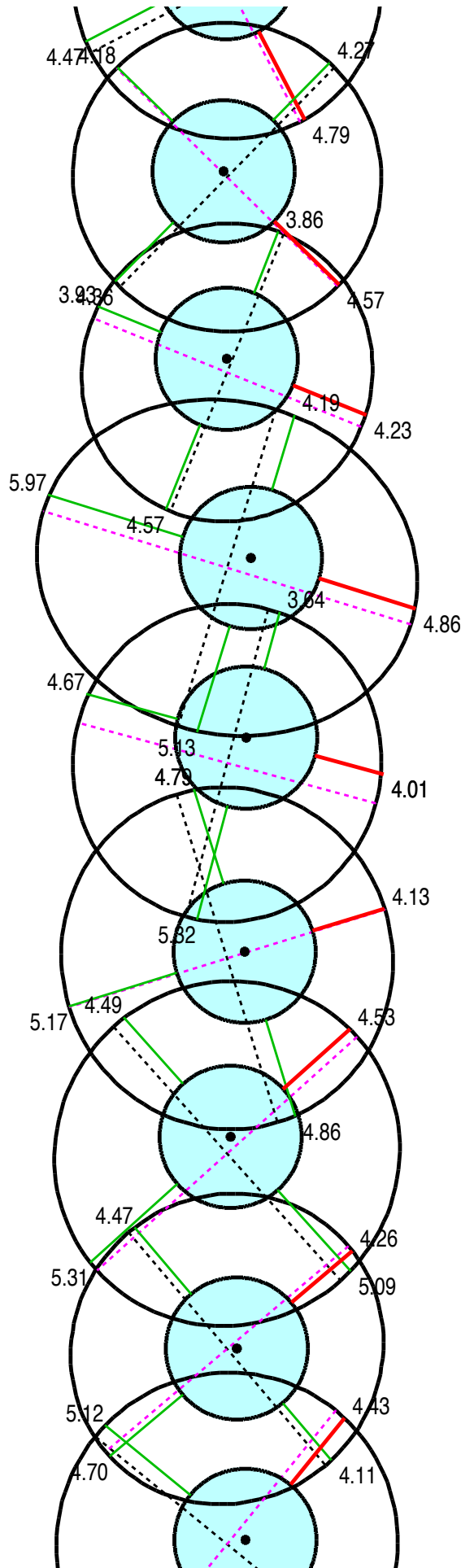
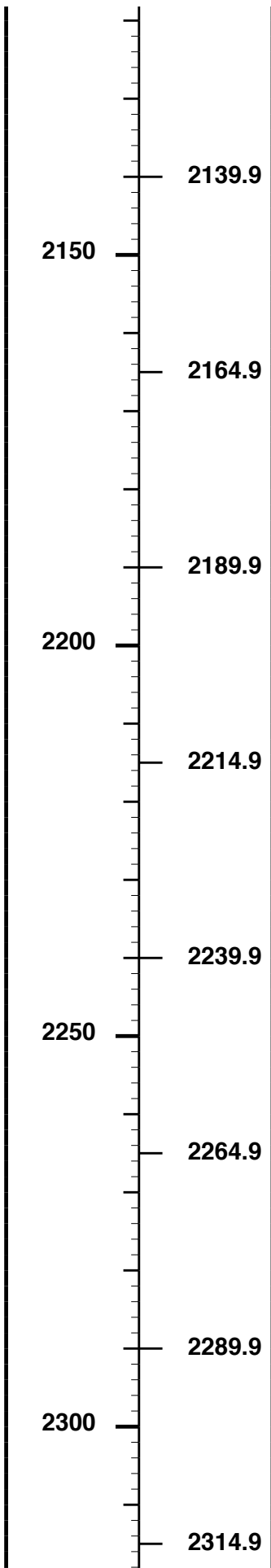
DLIS Name	Description	Value
PPCBGVS	Borehole Graphic Vertical Scale	S5
PPCBGDI	Borehole Graphic Depth Interval	25_FT
PPCBGDM	Borehole Graphic Display Mode	Xsec_Tool_CalAll_Data
PPCBGHW	Borehole Graphic Horizontal Width	20_IN
PPCBGAI	Borehole Graphic Angle Index	Orient_from_Projected_North
PPCBGUN	Borehole Graphic Unit	ENGLISH



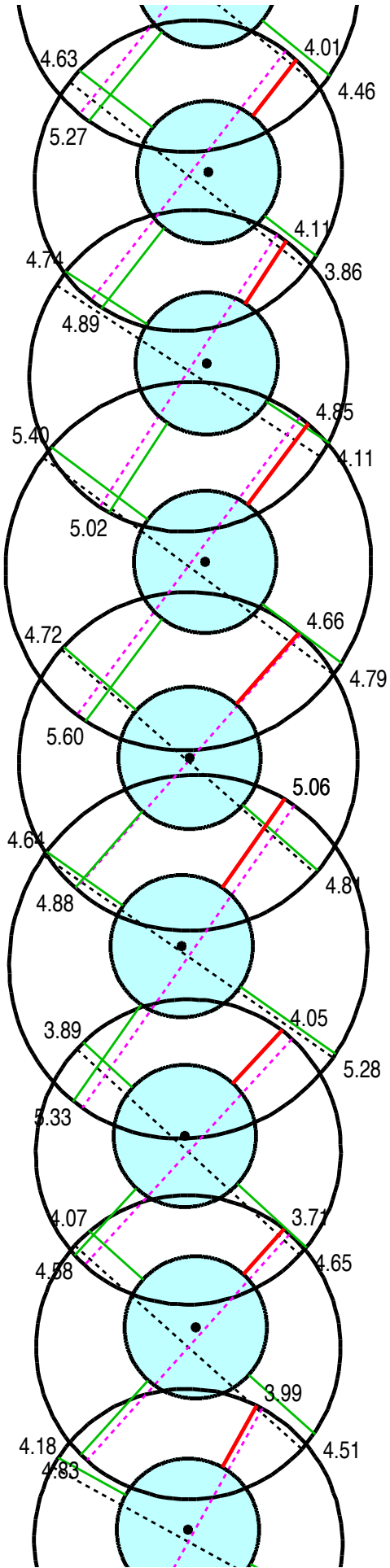
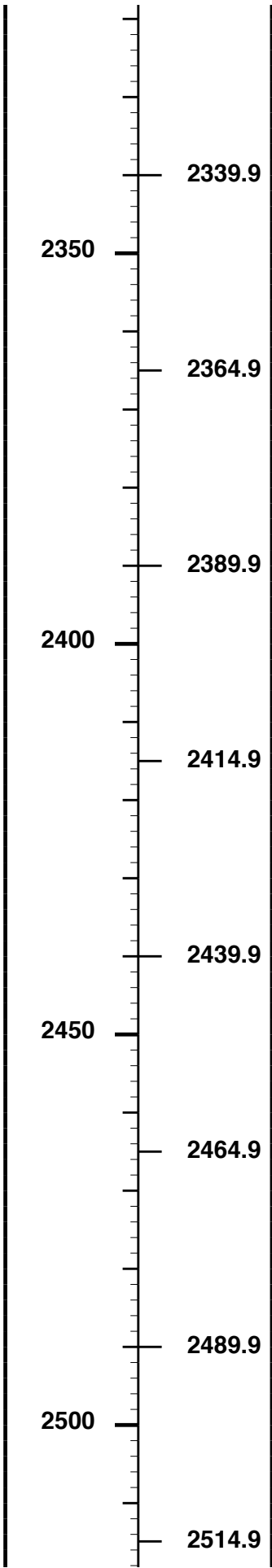
Depth (FT)	Ellipse Short Axis (ESA)	PPC1 Ellipse Data			
	- 10.0 (INCH) 10.0	Long Axis (IN)	Short Axis (IN)	Std. Devi	Orient Angle (DEG)
	Ellipse Long Axis (ELA) - 10.0 (INCH) 10.0				



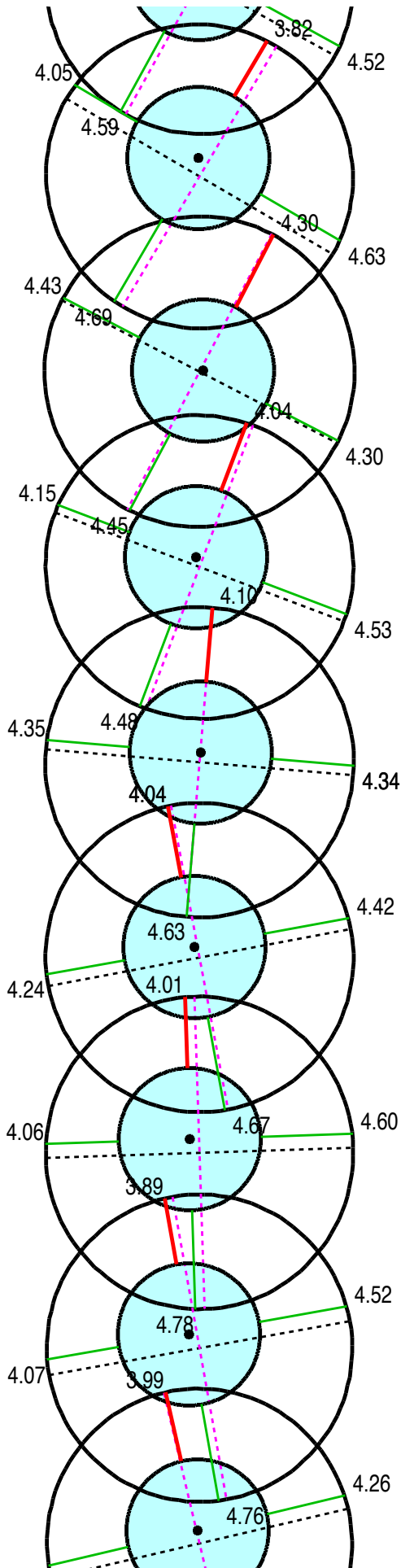
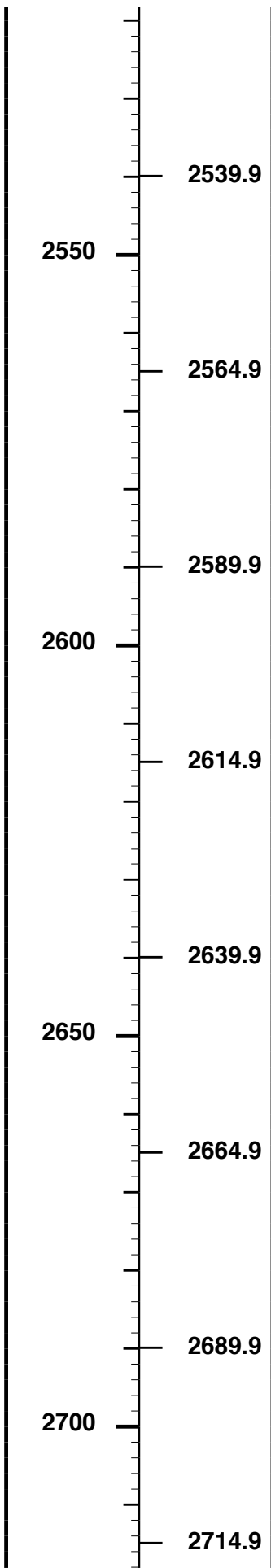
8.8	8.5	0.0	346.7
8.6	8.4	0.0	38.1
8.6	8.7	0.0	113.7
8.5	8.8	0.0	64.8
8.6	8.7	0.0	121.5
9.1	9.3	0.0	125.7
9.0	8.9	0.0	136.5
8.9	8.6	0.0	152.6



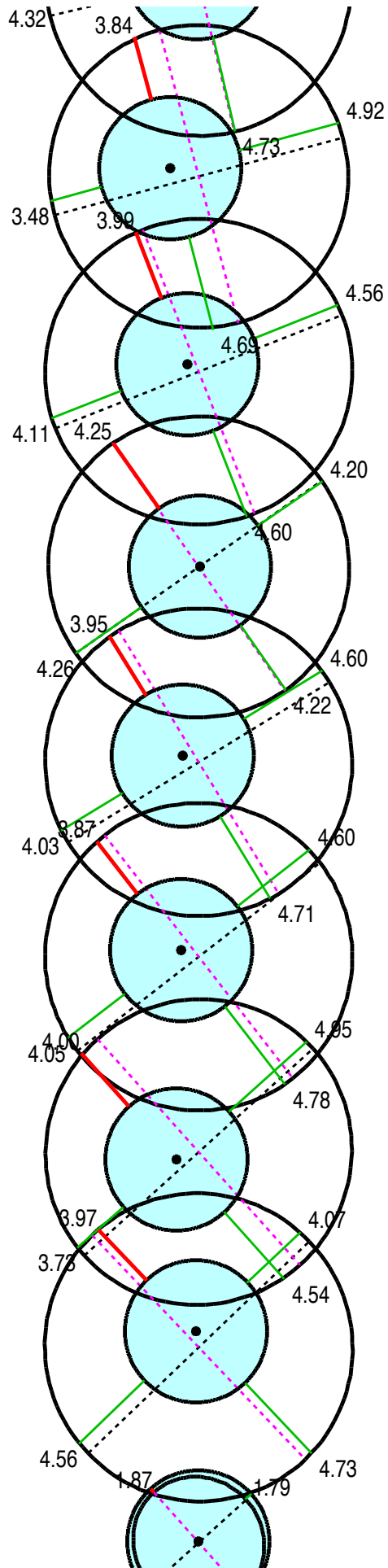
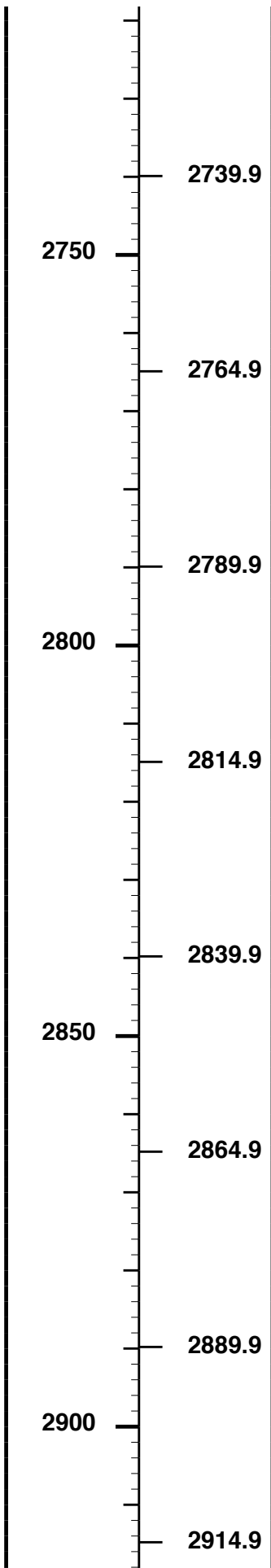
8.7	8.6	0.0	134.5
8.2	8.4	0.0	112.1
10.8	9.3	0.0	107.2
8.7	9.0	0.0	105.0
9.3	9.7	0.0	72.8
9.8	9.6	0.0	48.2
9.0	8.6	0.0	49.7
9.7	9.6	0.0	39.1



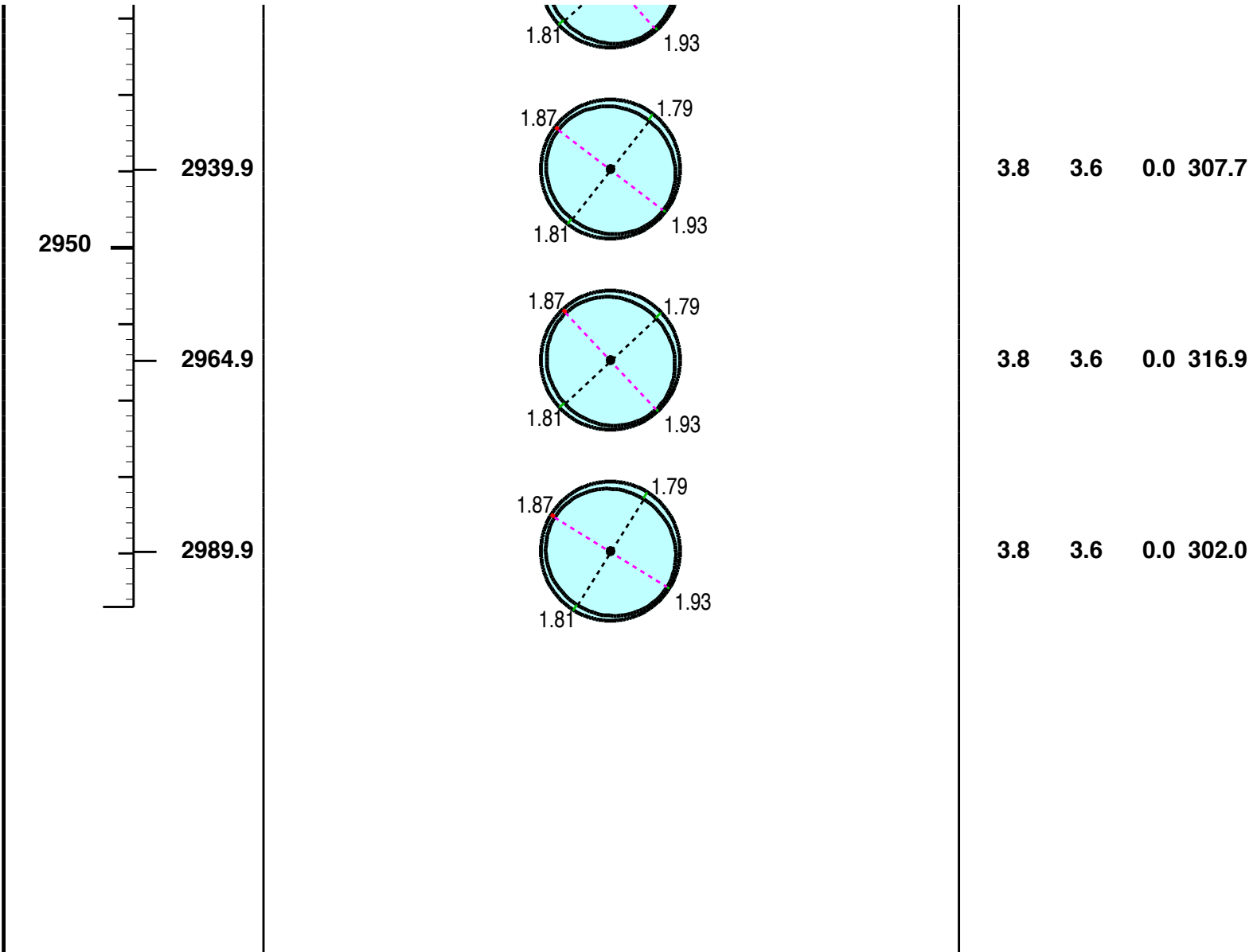
8.9	8.5	0.0	38.1
9.1	8.9	0.0	33.0
10.5	10.2	0.0	36.7
9.5	9.5	0.0	41.4
10.4	9.9	0.0	34.9
8.6	8.5	0.0	42.6
8.5	8.6	0.0	42.0
8.6	8.7	0.0	28.9



8.5	8.7	0.0	30.4
8.7	8.7	0.0	27.6
8.5	8.7	0.0	20.7
8.7	8.7	0.0	4.8
8.7	8.7	0.0	349.4
8.8	8.7	0.0	358.1
8.7	8.6	0.0	349.9
8.7	8.6	0.0	346.8



8.5	8.4	0.0	344.9
8.6	8.7	0.0	338.6
8.5	8.5	0.0	325.1
8.7	8.6	0.0	328.5
8.7	8.6	0.0	322.1
8.5	8.7	0.0	318.1
8.7	8.6	0.0	316.3
3.8	3.6	0.0	318.0

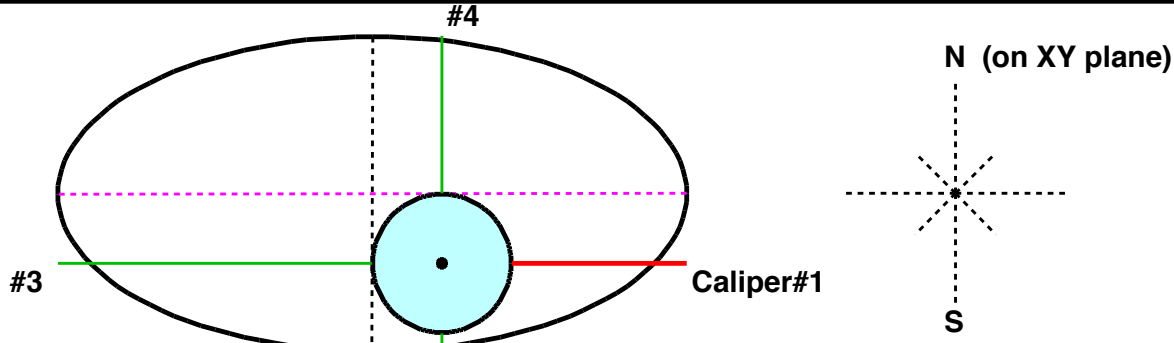


3.8 3.6 0.0 307.7

3.8 3.6 0.0 316.9

3.8 3.6 0.0 302.0

Depth (FT)	Ellipse Short Axis (ESA) (INCH)		PPC1 Ellipse Data			
	10.0	10.0	Long Axis (IN)	Short Axis (IN)	Std. Devi (IN)	Orient Angle (DEG)
	Ellipse Long Axis (ELA) (INCH)					
	10.0	10.0				



Parameters

DLIS Name	Description	Value
PPCBGVS	Borehole Graphic Vertical Scale	S5
PPCBGDI	Borehole Graphic Depth Interval	25_FT
PPCBGDM	Borehole Graphic Display Mode	Xsec_Tool_CalAll_Data
PPCBGHW	Borehole Graphic Horizontal Width	20_IN
PPCBGAI	Borehole Graphic Angle Index	Orient_from_Projected_North
PPCBGUN	Borehole Graphic Unit	ENGLISH

Borehole Cross Section

Graphics File Name: PPC_BORE_GRAPHIC_5.PDS

Graphics File Created: 15-Feb-2007 16:32

Schlumberger

PPC1 – HOLE DIAMETER

MAXIS Field Log

Company: BP Alaska Drilling and Wells

Well: MT ELBERT

Input DLIS Files

DEFAULT	OBMI_CAL_DSI_050LUP	FN:64	PRODUCER	15-Feb-2007 01:26	2997.5 FT	1910.2 FT
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Output DLIS Files

DEFAULT	OBMI_CAL_DSI_081PUP	FN:92	PRODUCER	15-Feb-2007 16:32	2997.5 FT	1912.0 FT
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Integrated Hole/Cement Volume Summary

Hole Volume = 438.20 F3

Cement Volume = 147.98 F3 (assuming 7.00 IN casing O.D.)

Computed from 2997.5 FT to 1912.0 FT using data channel(s) CRD1_PPC1 CRD2_PPC1 CRD3_PPC1 CRD4_PPC1

OP System Version: 14C0-302

MCM

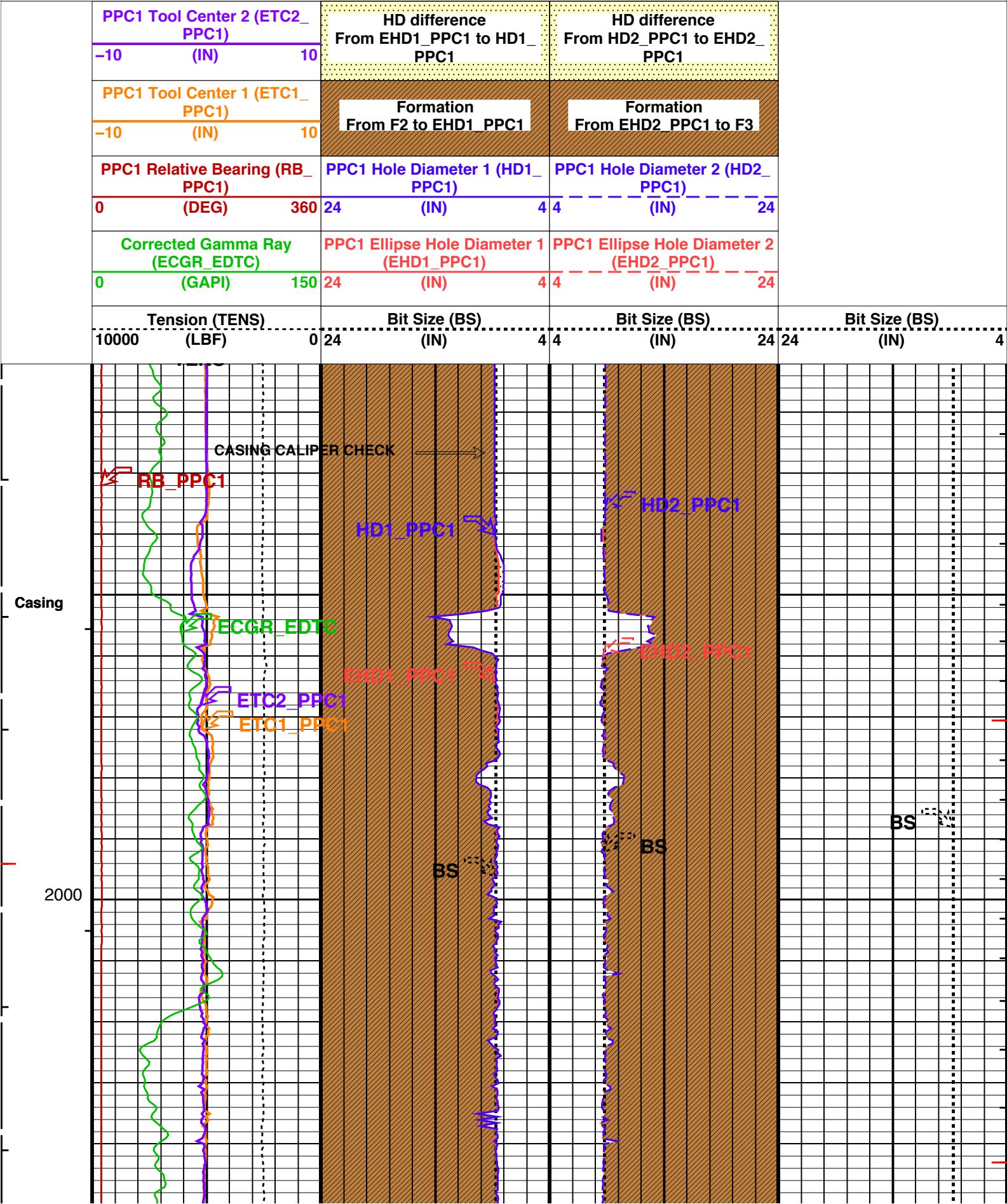
OBMT-F	SRPC-3243-Q4_2006	GPIT-C	SRPC-3243-Q4_2006
PPC2-B	SKK-3213-PPCB	DSST-B	SRPC-3243-Q4_2006
PPC1-B	SKK-3213-PPCB	EDTC-B	SKK-3248-EDTCB

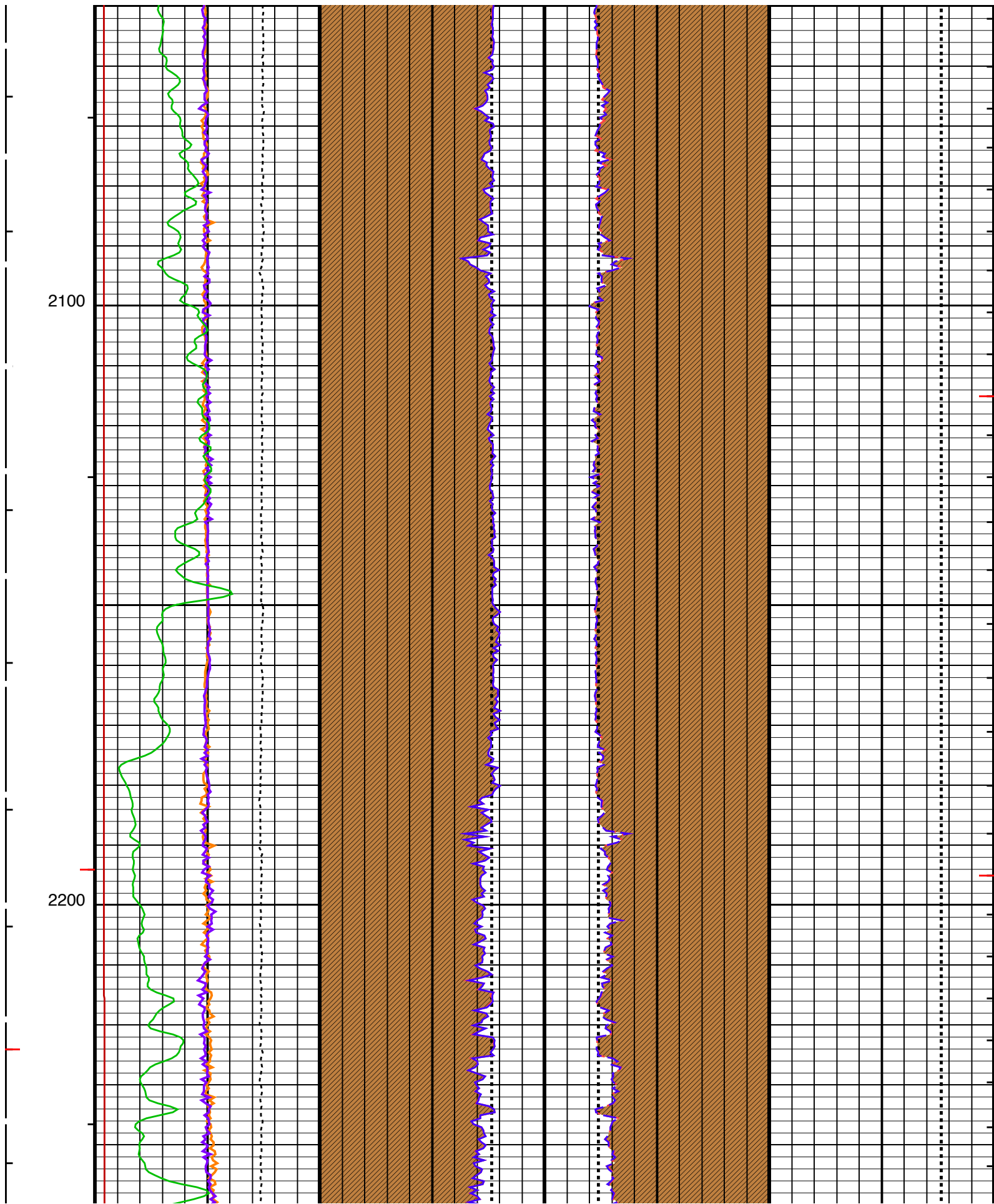
PIP SUMMARY

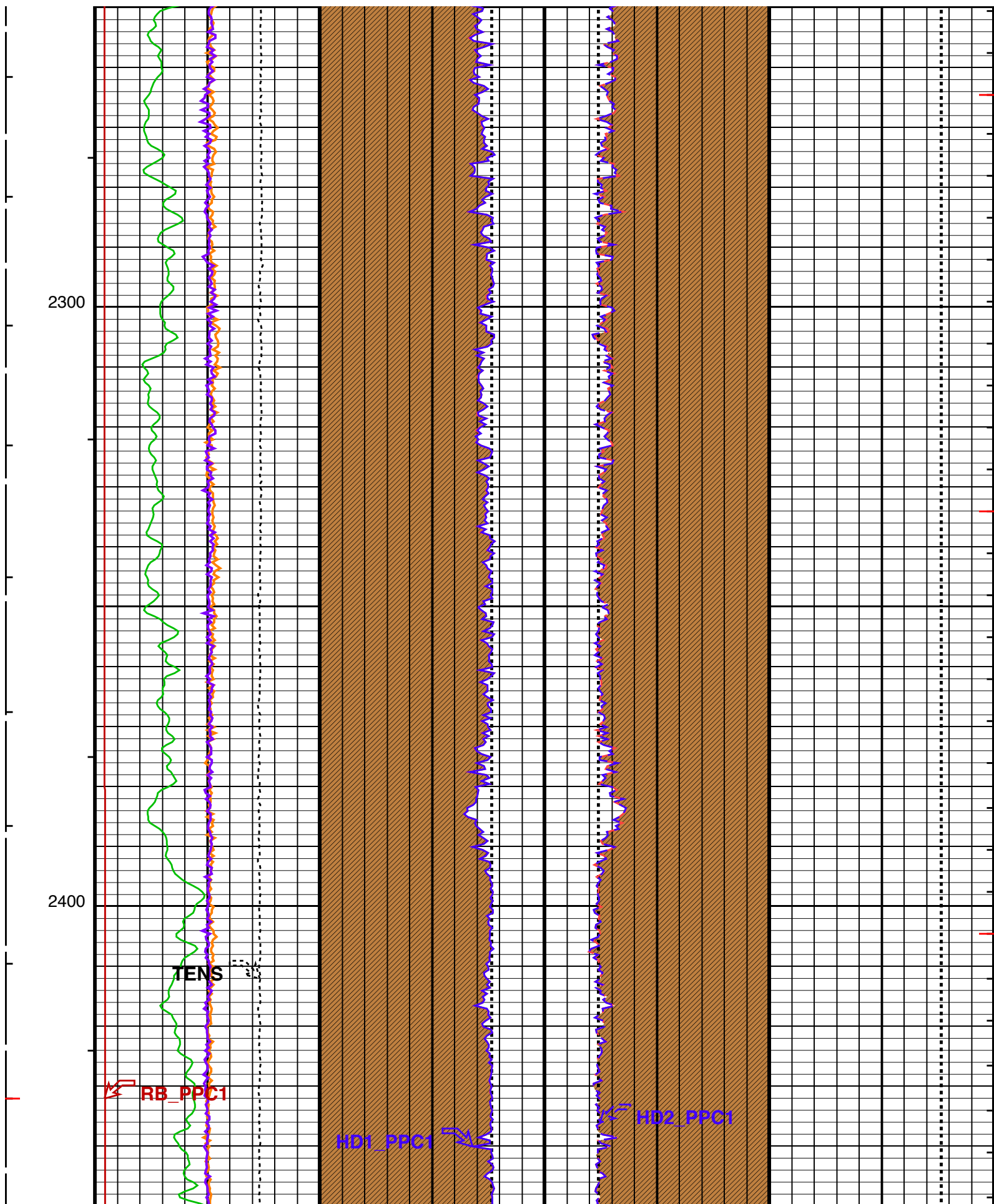
▬ Integrated Hole Volume Minor Pip Every 10 F3
 ▬ Integrated Hole Volume Major Pip Every 100 F3
 ▬ Integrated Cement Volume Minor Pip Every 10 F3
 ▬ Integrated Cement Volume Major Pip Every 100 F3

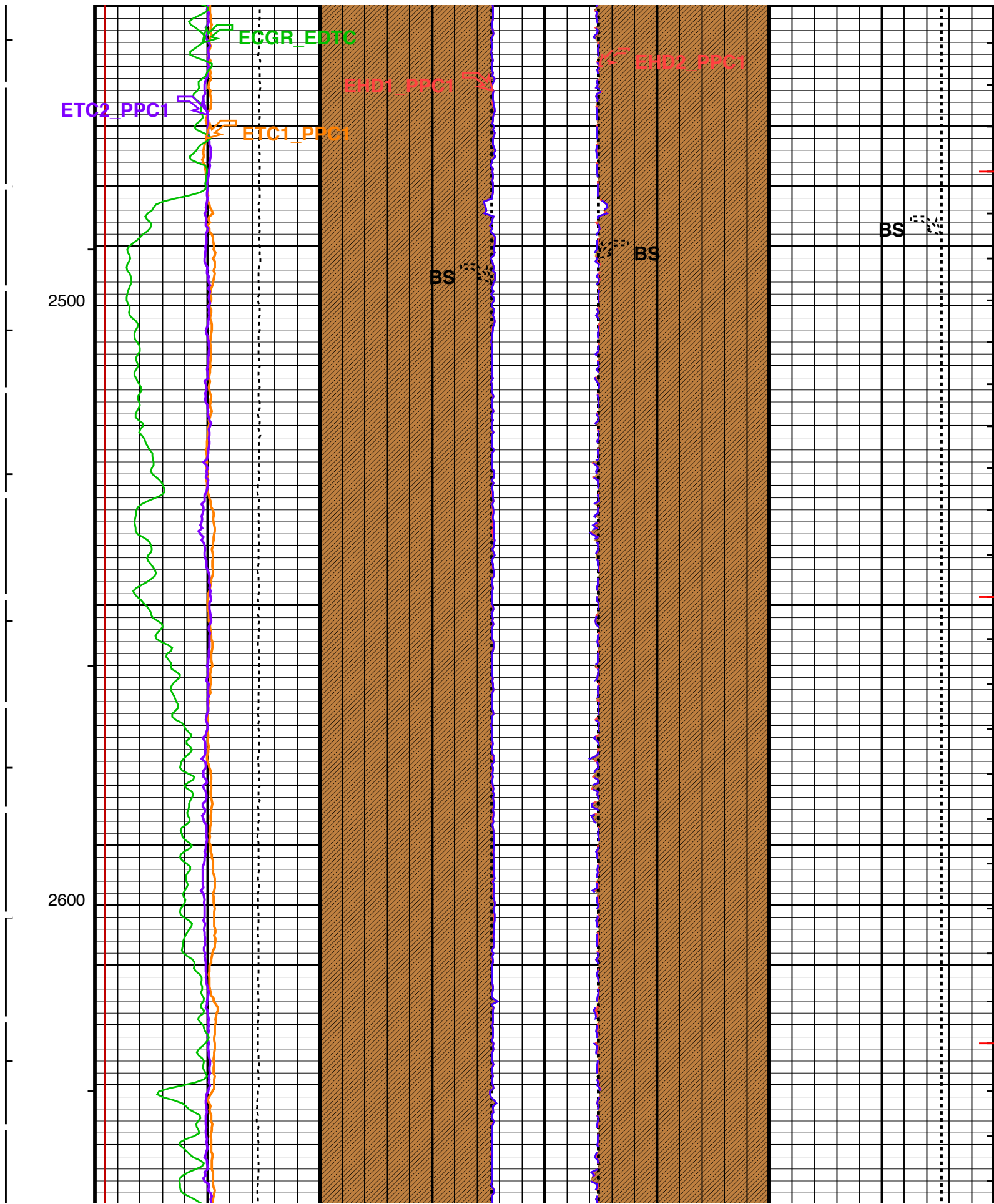
Integrated Transit Time Minor Pip Every 1 MS ▬
 Integrated Transit Time Major Pip Every 10 MS ▬

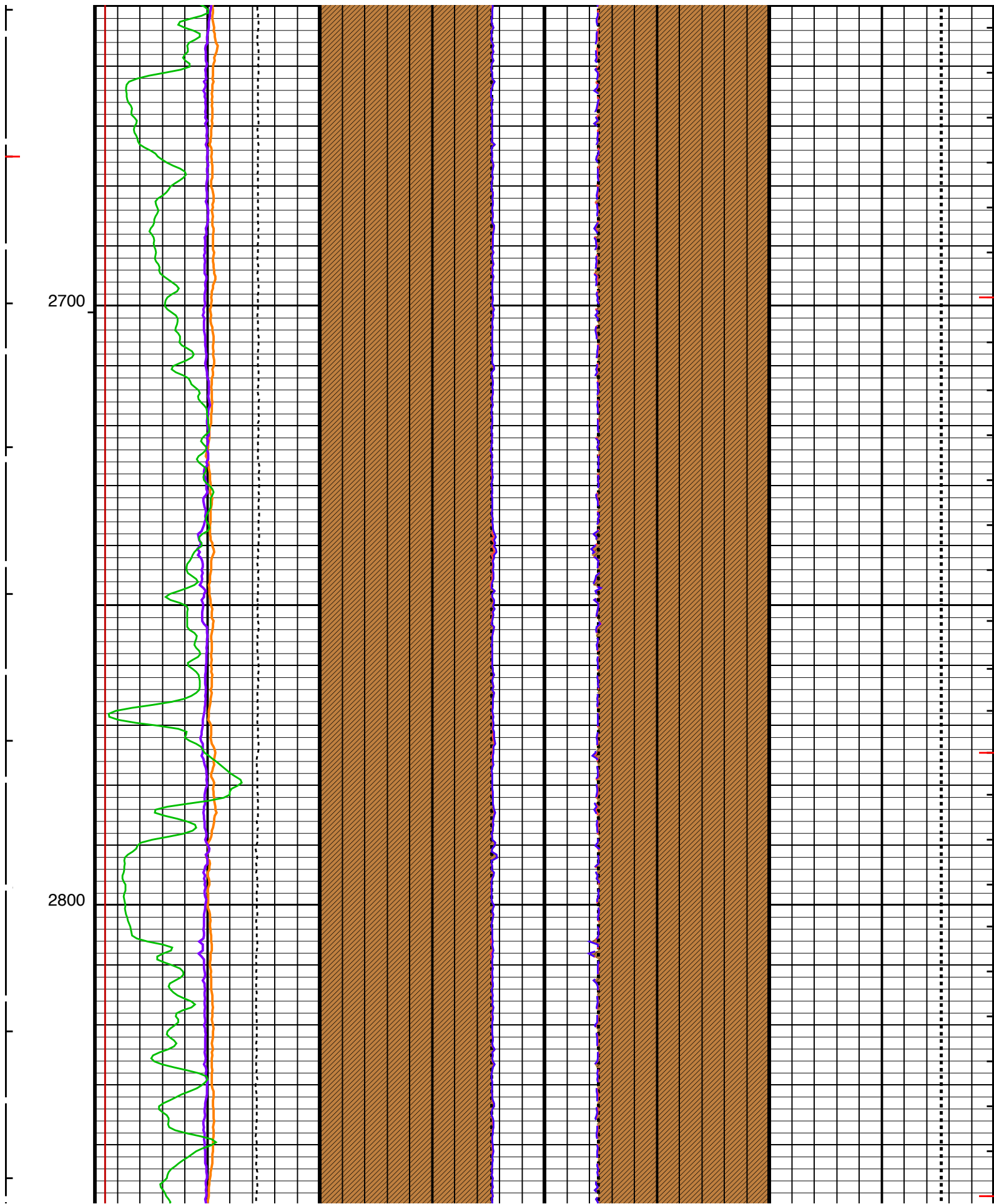
Time Mark Every 60 S

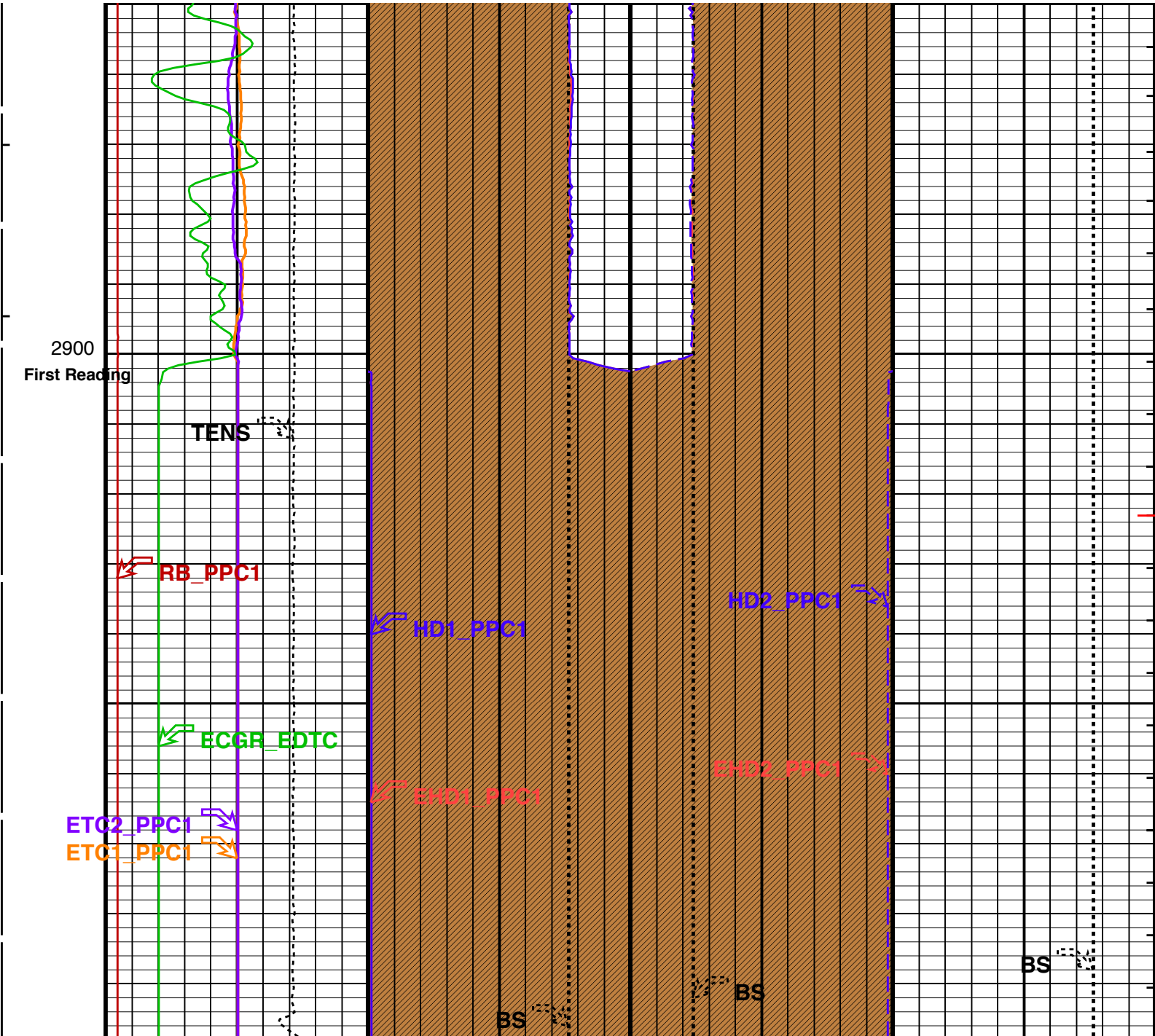












Tension (TENS) (LBF)		Bit Size (BS) (IN)		Bit Size (BS) (IN)		Bit Size (BS) (IN)	
10000	0	24	4	4	24	24	4
Corrected Gamma Ray (ECGR_EDTC)		PPC1 Ellipse Hole Diameter 1 (EHD1_PPC1)		PPC1 Ellipse Hole Diameter 2 (EHD2_PPC1)			
0	150	24	4	4	24	24	4
PPC1 Relative Bearing (RB_PPC1)		PPC1 Hole Diameter 1 (HD1_PPC1)		PPC1 Hole Diameter 2 (HD2_PPC1)			
0	360	24	4	4	24	24	4
PPC1 Tool Center 1 (ETC1_PPC1)		Formation From F2 to EHD1_PPC1		Formation From EHD2_PPC1 to F3			
-10	10	HD difference From EHD1_PPC1 to HD1_PPC1		HD difference From HD2_PPC1 to EHD2_PPC1			

-10	(IN)	10	From END1_PPC1 TO HD1_PPC1	From HD2_PPC1 TO END2_PPC1
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PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

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	
OBMT-F:	Slim Thru-wired Oil Base Mud Formation Imager Tool F		
	Number of OBMT samples averaged	AVG_5	
PPC2-B:	Powered Positioning Device/Caliper 2		
	PPC2 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
DSST-B:	Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
ITTS	Integrated Transit Time Source	DTCO	
PPC1-B:	Powered Positioning Device/Caliper 1		
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
EDTC-B:	Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
DIR:	Directional Survey Computation		
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
HOLEV:	Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
HVCS	Integrated Hole Volume Caliper Selection	PPC1_Calipers	
	System and Miscellaneous		
BS	Bit Size	8.750	IN
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	40.00	LB/F
DFD	Drilling Fluid Density	9.40	LB/G
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	-50000	FT

Format: PPC1_HoleDiameter Vertical Scale: 5" per 100' Graphics File Created: 15-Feb-2007 16:32

OP System Version: 14C0-302

MCM

OBMT-F	SRPC-3243-Q4_2006	GPIT-C	SRPC-3243-Q4_2006
PPC2-B	SKK-3213-PPCB	DSST-B	SRPC-3243-Q4_2006
PPC1-B	SKK-3213-PPCB	EDTC-B	SKK-3248-EDTCB

Input DLIS Files

DEFAULT OBMI_CAL_DSI_050LUP FN:64 PRODUCER 15-Feb-2007 01:26 2997.5 FT 1910.2 FT

Output DLIS Files

DEFAULT OBMI_CAL_DSI_081PUP FN:92 PRODUCER 15-Feb-2007 16:32

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Slim Thru-wired Oil Base Mud Formation Imager Tool F Wellsite Calibration – Caliper Calibration							
Before: 8-Feb-2007 22:23							
Caliper 1 Small Jig	8.000	N/A	7.611	N/A	N/A	N/A	IN
Caliper 2 Small Jig	8.000	N/A	7.583	N/A	N/A	N/A	IN
Caliper 1 Large Jig	12.00	N/A	12.38	N/A	N/A	N/A	IN
Caliper 2 Large Jig	12.00	N/A	12.24	N/A	N/A	N/A	IN
General Purpose Inclinomater Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 14-Feb-2007 23:44							
TEMPERATURE REFERENCE :	N/A	N/A	68	N/A	N/A	N/A	DEGF
YEAR OF CALIBRATION :	N/A	N/A	4	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	877	N/A	N/A	N/A	
General Purpose Inclinomater Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 14-Feb-2007 23:44							
TEMPERATURE REFERENCE :	N/A	N/A	66	N/A	N/A	N/A	DEGF
YEAR OF CALIBRATION :	N/A	N/A	2	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	487	N/A	N/A	N/A	
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration							
Before: 8-Feb-2007 22:34							
Gamma Ray (Jig – Bkg)	151.8	N/A	151.8	N/A	N/A	13.80	GAPI
Gamma Ray (Calibrated)	153.5	N/A	153.5	N/A	N/A	15.00	GAPI
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration							
Before: Calibration not done							
EDTC Z-Axis Acceleration	32.19	N/A	32.17	N/A	N/A	N/A	F/S2

Slim Thru-wired Oil Base Mud Formation Imager Tool F / Equipment Identification

Primary Equipment:

Slim Thru-wired Oil Base Mud Formation I
Oil Base Mud Formation Imager Cartridge

OBMS – F
OBMC – A

Auxiliary Equipment:

Oil Base Mud Formation Imager Housing

OBMH – A

Slim Thru-wired Oil Base Mud Formation Imager Tool F Wellsite Calibration

Caliper Calibration

Phase	Caliper 1 Small Jig IN	Value	Phase	Caliper 2 Small Jig IN	Value
Before		7.611	Before		7.583
	6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)			6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)	
Phase	Caliper 1 Large Jig IN	Value	Phase	Caliper 2 Large Jig IN	Value
Before		12.38	Before		12.24

10.20 (Minimum)	12.00 (Nominal)	13.80 (Maximum)	10.20 (Minimum)	12.00 (Nominal)	13.80 (Maximum)
Before: 8-Feb-2007 22:23					

General Purpose Inclinator / Equipment Identification

Primary Equipment:
GPIT Cartridge – C
GPIC – C

Auxiliary Equipment:
GPIT Housing
GPIH – B

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:
Enhanced DTS Cartridge
EDTC – B

Auxiliary Equipment:
EDTC Housing
EDTH – B

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration											
Phase	Gamma Ray Background	GAPI	Value	Phase	Gamma Ray (Jig – Bkg)	GAPI	Value	Phase	Gamma Ray (Calibrated)	GAPI	Value
Before			16.05	Before			151.8	Before			153.5
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		138.0 (Minimum)	151.8 (Nominal)	165.6 (Maximum)		138.5 (Minimum)	153.5 (Nominal)	168.5 (Maximum)
Before: 8-Feb-2007 22:34											

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration			
Phase	EDTC Z-Axis Acceleration F/S2	Value	
Before		32.17	
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)
Before: Calibration not done			

Company: **BP EXPLORATION (ALASKA), INC.**

Schlumberger

Well: **MT. ELBERT-01**
Field: **MILNE POINT UNIT**
Borough: **NORTH SLOPE**
State: **ALASKA**

FINAL

POWER POSITIONING CALIPER TOOL
BOREHOLE GRAPHICS / CALIPER LOG
14-FEB-2007