

# Schlumberger

Company: SANDIA TECHNOLOGIES, LLC

Well: NYSTA TANDEM LOT 1

Field: WILDCAT

County: ROCKLAND

State: NEW YORK

## DIRECTIONAL SURVEY

County: ROCKLAND  
 Field: WILDCAT  
 Location: LAT: 41.1036  
 Well: NYSTA TANDEM LOT 1  
 Company: SANDIA TECHNOLOGIES, LLC

LOCATION		LAT: 41.1036	Elev.:	K.B.	402.00 ft
		LONG: -74.027		G.L.	386.00 ft
				D.F.	402.00 ft
Permanent Datum:	GROUND LEVEL	Elev.:	386.00 ft		
Log Measured From:	KELLY BUSHING		16.00 ft	above Perm. Datum	
Drilling Measured From:	KELLY BUSHING				
API Serial No.	31-087-27016-00-00	Section:		Township:	CLARKSTOWN

Logging Date	Run 1	Run 2	Run
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

Logging Date	15-Oct-2011
Run Number	2B
Depth Driller	6885 ft
Schlumberger Depth	6870 ft
Bottom Log Interval	6870 ft
Top Log Interval	1492 ft
Casing Driller Size @ Depth	9.625 in @ 1496 ft
Casing Schlumberger	1492 ft
Bit Size	8.500 in
Type Fluid In Hole	FRESH WATER GEL
Density	9.4 lbm/gal
Fluid Loss	0 cm3
Source Of Sample	MUD PIT
RM @ Measured Temperature	1.107 ohm.m @ 64 degF
RMF @ Measured Temperature	0.886 ohm.m @ 64 degF
RMC @ Measured Temperature	1.328 ohm.m @ 64 degF
Source RMF	CALCULATED
RM @ MRT	0.685 @ 108 0.548 @ 108
Maximum Recorded Temperatures	108 degF
Circulation Stopped	15-Oct-2011 1:00
Logger On Bottom	15-Oct-2011 18:30
Unit Number	7052 BRADFORD, PA
Recorded By	TIM STOEVER
Witnessed By	B.ARMSTRONG / D. COLLINS

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Driller Size @ Depth	
Casing Schlumberger	
Bit Size	
Type Fluid In Hole	
Density	
Fluid Loss	
Source Of Sample	
RM @ Measured Temperature	
RMF @ Measured Temperature	
RMC @ Measured Temperature	
Source RMF	
RM @ MRT	
Maximum Recorded Temperatures	
Circulation Stopped	
Logger On Bottom	
Unit Number	
Recorded By	
Witnessed By	

## DEPTH SUMMARY LISTING

Date Created: 15-OCT-2011 13:28:23

### Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 6420 Calibration Date: 18-JUL-2011 Calibrator Serial Number: Calibration Cable Type: 7-39P LXS Wheel Correction 1: -6 Wheel Correction 2: -4	Type: CMTD-B/A Serial Number: 1095 Calibration Date: 04-OCT-2011 Calibrator Serial Number: 108244 Number of Calibration Points: 10 Calibration RMS: 14 Calibration Peak Error: 24	Type: 7-39P LXS Serial Number: 7052 Length: 9800 FT <hr/> Conveyance Method: Wireline Rig Type: LAND

### Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS
Reference Log Run Number:	1
Reference Log Date:	31-AUG-2011
Subsequent Trip Down Log Correction:	

### Depth Control Remarks

1. IDW USED AS PRIMARY DEPTH CONTROL 2. Z CHART USED AS SECONDARY DEPTH CONTROL 3. 4. 5. 6.	
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#### 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 OS1: RUN 2A: PEX-AIT OS2: RUN 2B: FMI-MSIP OS3: RUN 2C: CMR-ECS-HNGS OS4: RUN 2D: USIT-DSL T OS5: RUN 2E: VSP SEISMIC	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THANK YOU FOR CHOOSING SCHLUMBERGER!!!	
MATRIX: SANDSTONE	
MATRIX DENSITY: 2.65 G/CC	
TIMD=1500', TIED=-11.02', TIND=-9.09, TIVD=1499.87'	

SPND=-374.57, SPED=287.52, SPTVD=6486.42

RIG: UNION RIG 48

CREW: PAUL REYNOLDS, BRYAN AUSTIN, NAT DORSAY

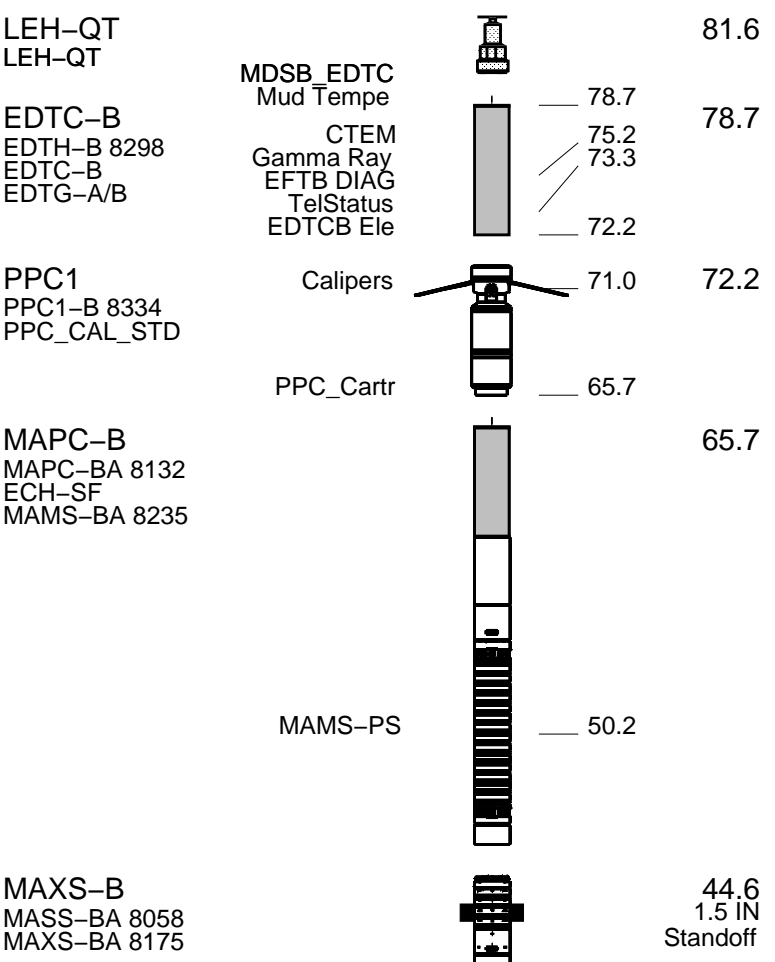
RUN 1			RUN 2		
SERVICE ORDER #:	BMNA-00055		SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:	0 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

## EQUIPMENT DESCRIPTION

RUN 1 RUN 2

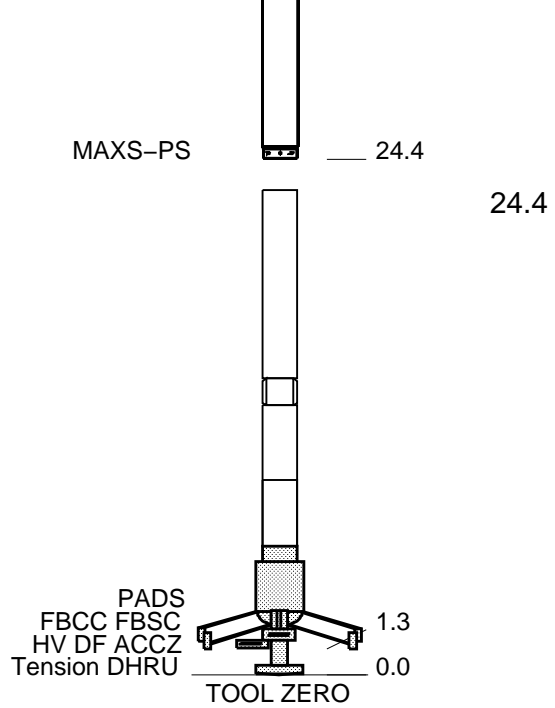
**SURFACE EQUIPMENT**  
WITM (EDTS)-A

**DOWNHOLE EQUIPMENT**



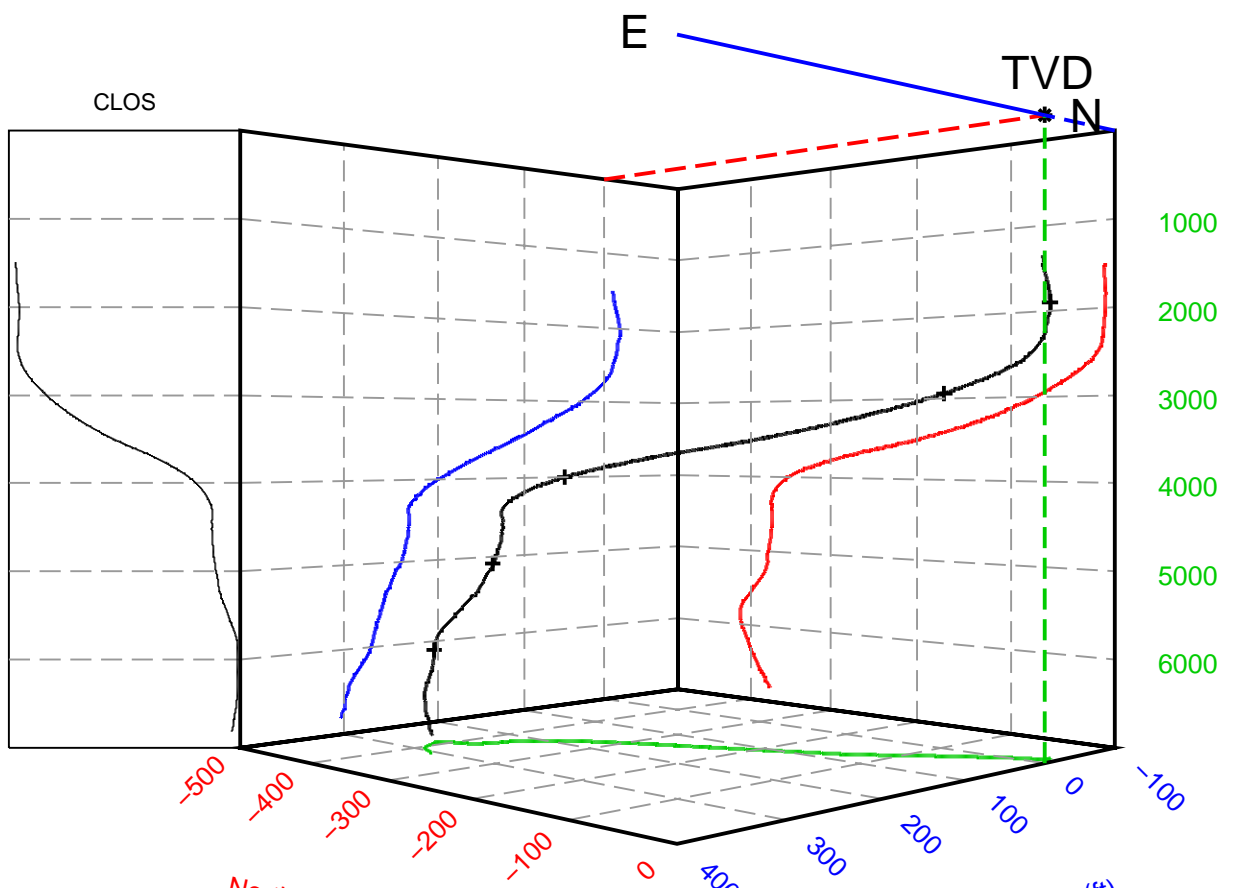
RUN 2

FBST-B  
 ECH-MRA  
 FBCC-A 1797  
 AH-185 1864  
 FBST-A  
 GPIC-F 847  
 FBSC-B 772  
 FBSS-B



MAXIMUM STRING DIAMETER 6.63 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN FEET

# Main View



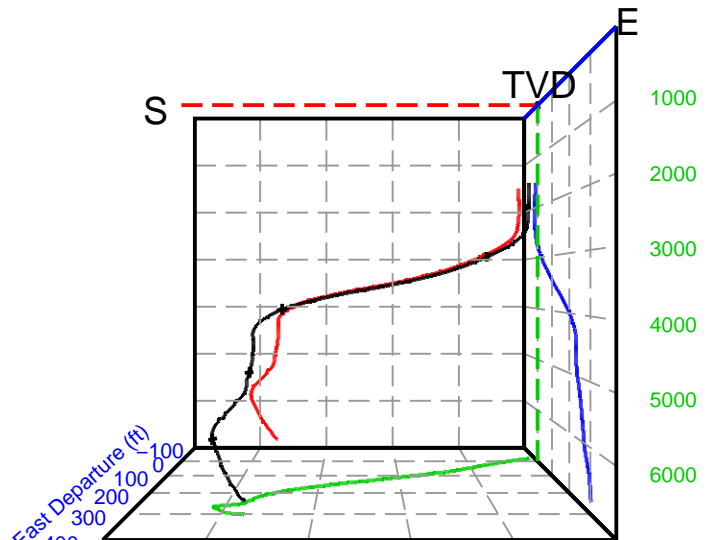
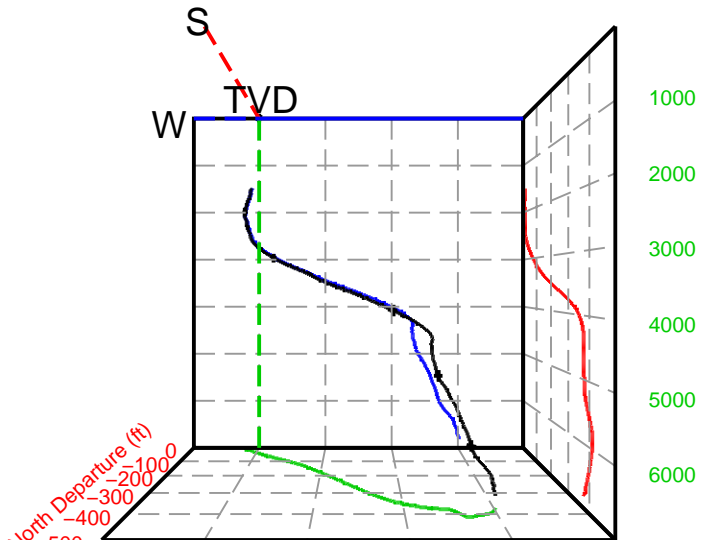
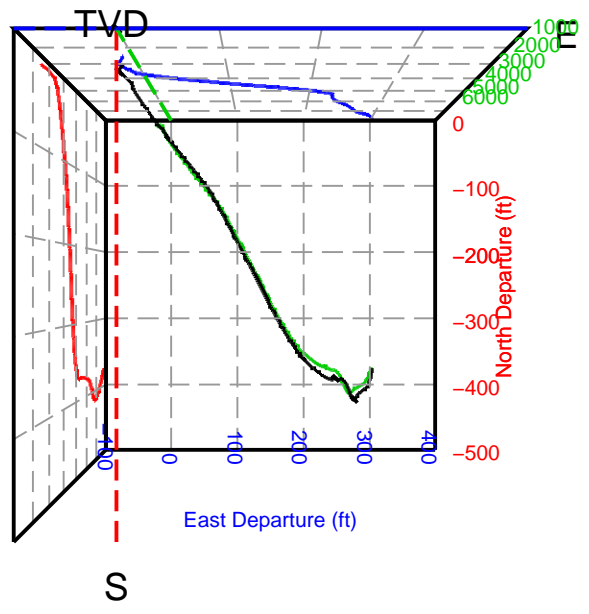
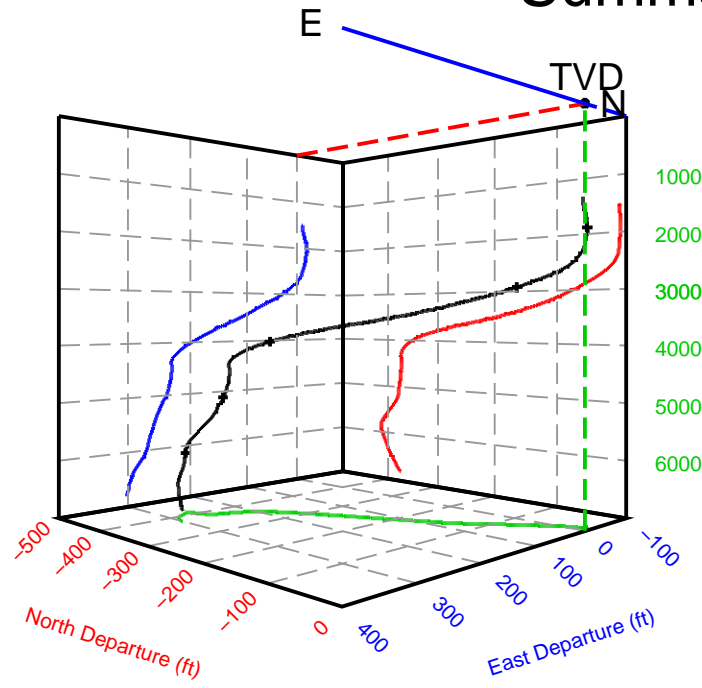
North Departure (ft)

East Departure (ft)

~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

Schlumberger

### Summary View

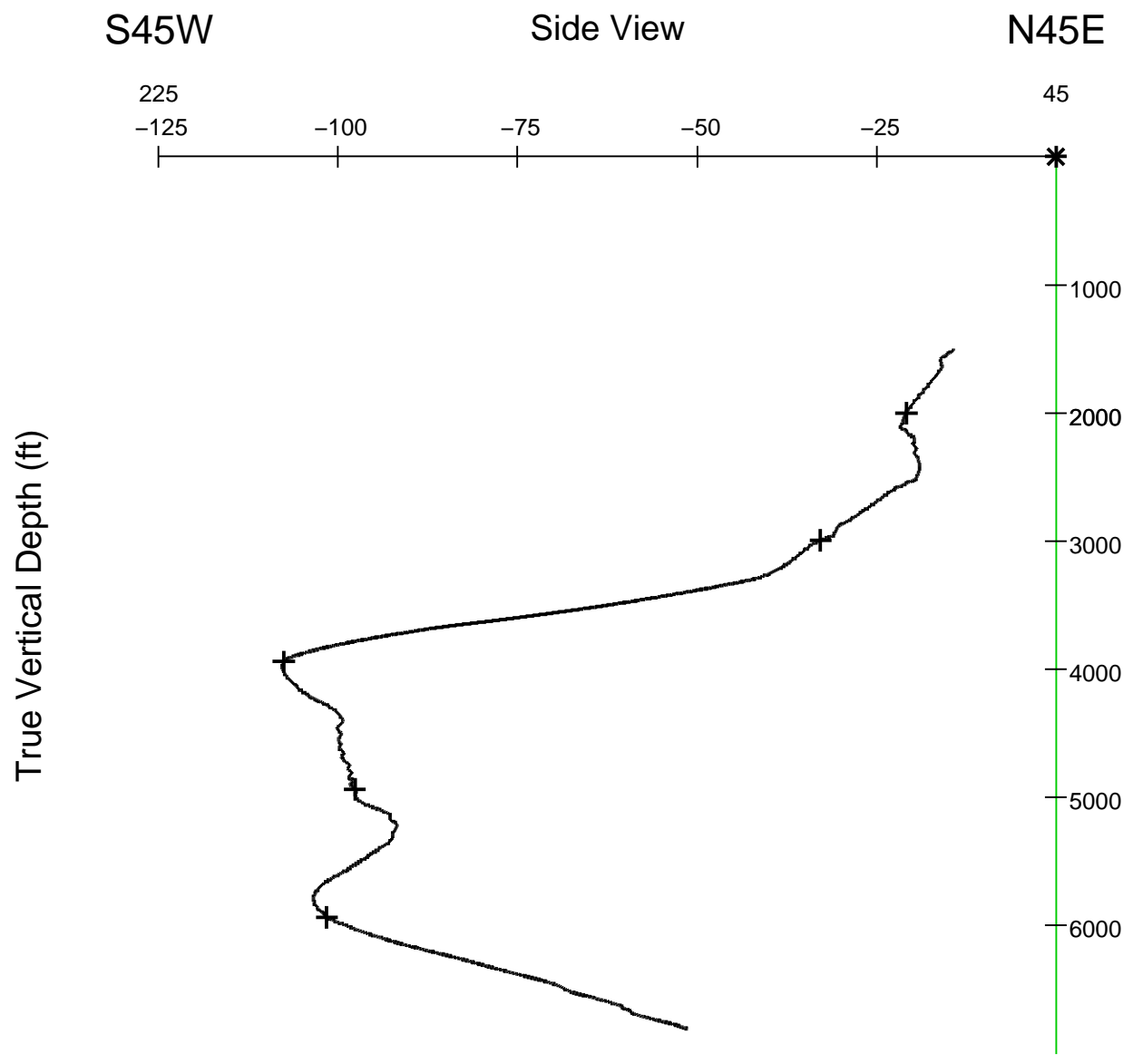




~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

Schlumberger

## Side View From Azimuth 135



~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
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+ Measured Depth Marker: Every 1000.0ft

Max. Drift [W to E]

-6.62ft to 92.1ft

\* Wellhead Position

TVD Interval

456.9ft to 2075.2ft

Depth Units (ft)

Final Closure

146.7m (Azim: 141.1Deg)

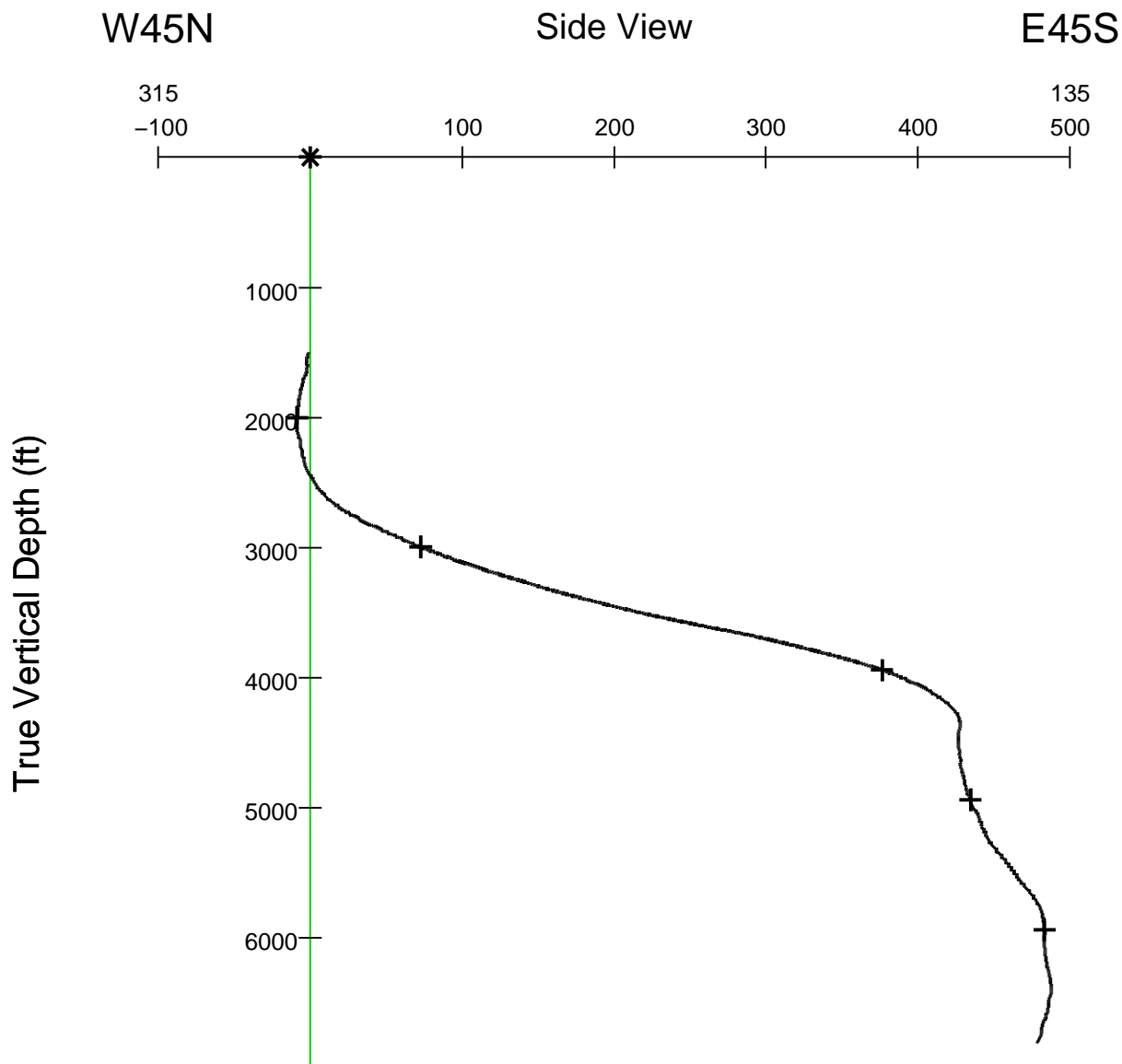
Drift Units (ft)

Side View [S45W to N45E]

-32.87ft to -4.3ft

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# Side View From Azimuth 225



~ Wellbore Course

Max. Drift [S to N]

-126.28ft to -2.5ft

+ Measured Depth Marker: Every 1000.0ft

Max. Drift [W to E]

-6.62ft to 92.1ft

\* Wellhead Position

TVD Interval

456.9ft to 2075.2ft

Depth Units (ft)

Final Closure

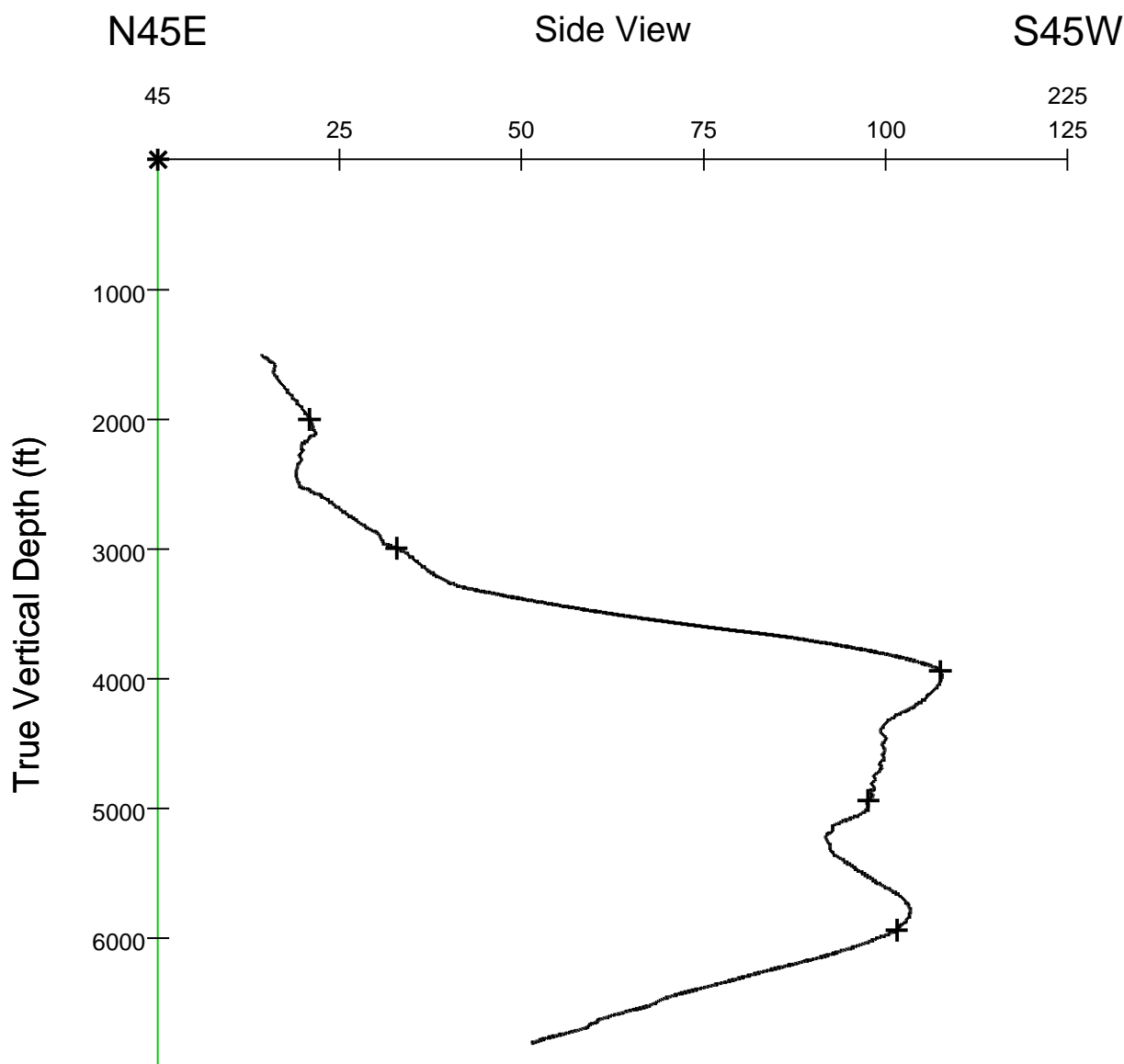
146.7m (Azim: 141.1Deg)

Drift Units (ft)

Side View [W45N to E45S]

-2.82ft to 148.8ft

# Side View From Azimuth 315



~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)	Side View [N45E to S45W]	4.33ft to 32.9ft

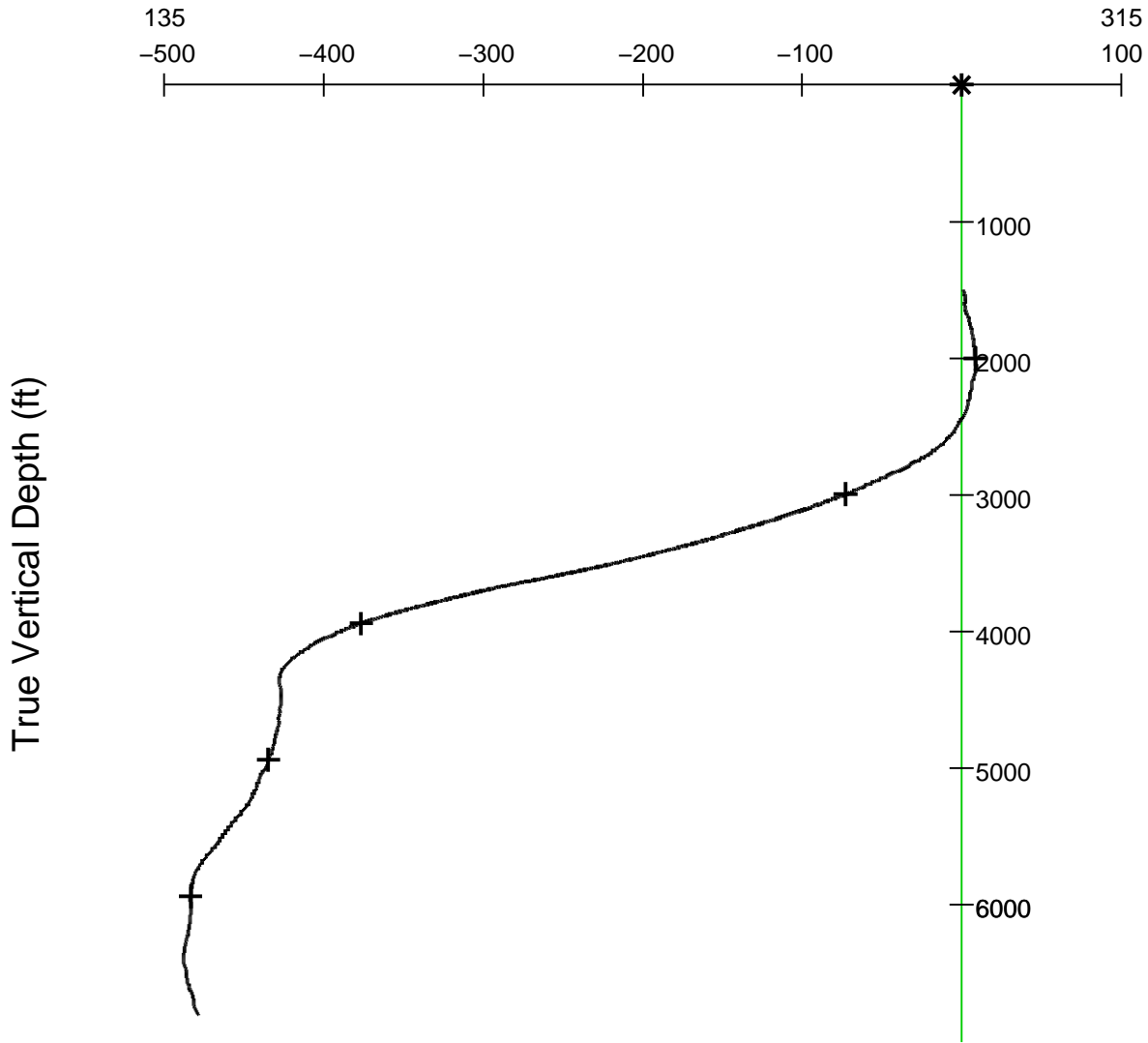
# Side View From Azimuth 45



E45S

Side View

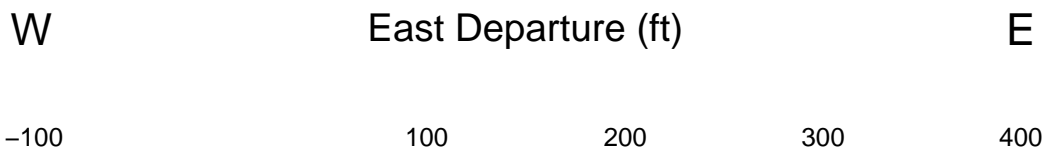
W45N



~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)	Side View [E45S to W45N]	-148.76ft to 2.8ft

Schlumberger

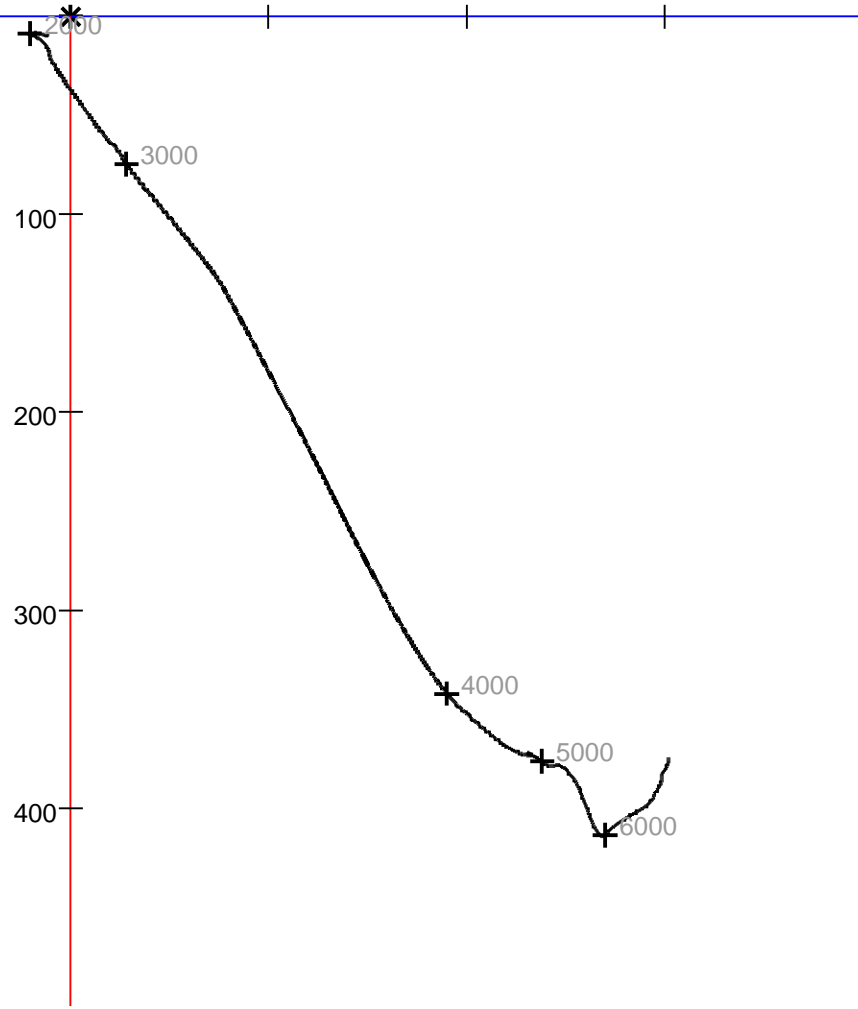
## North Departure vs East Departure



N

North Departure (ft)

S

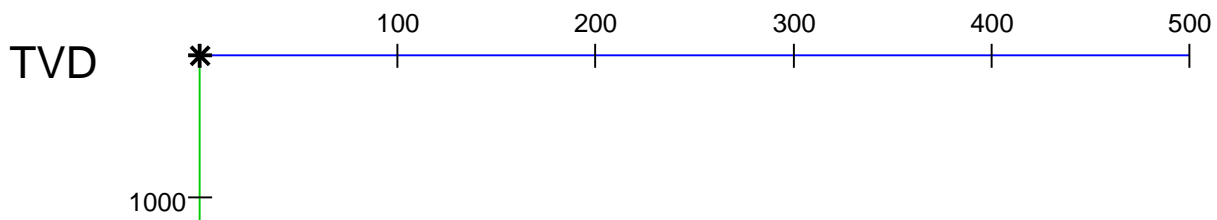


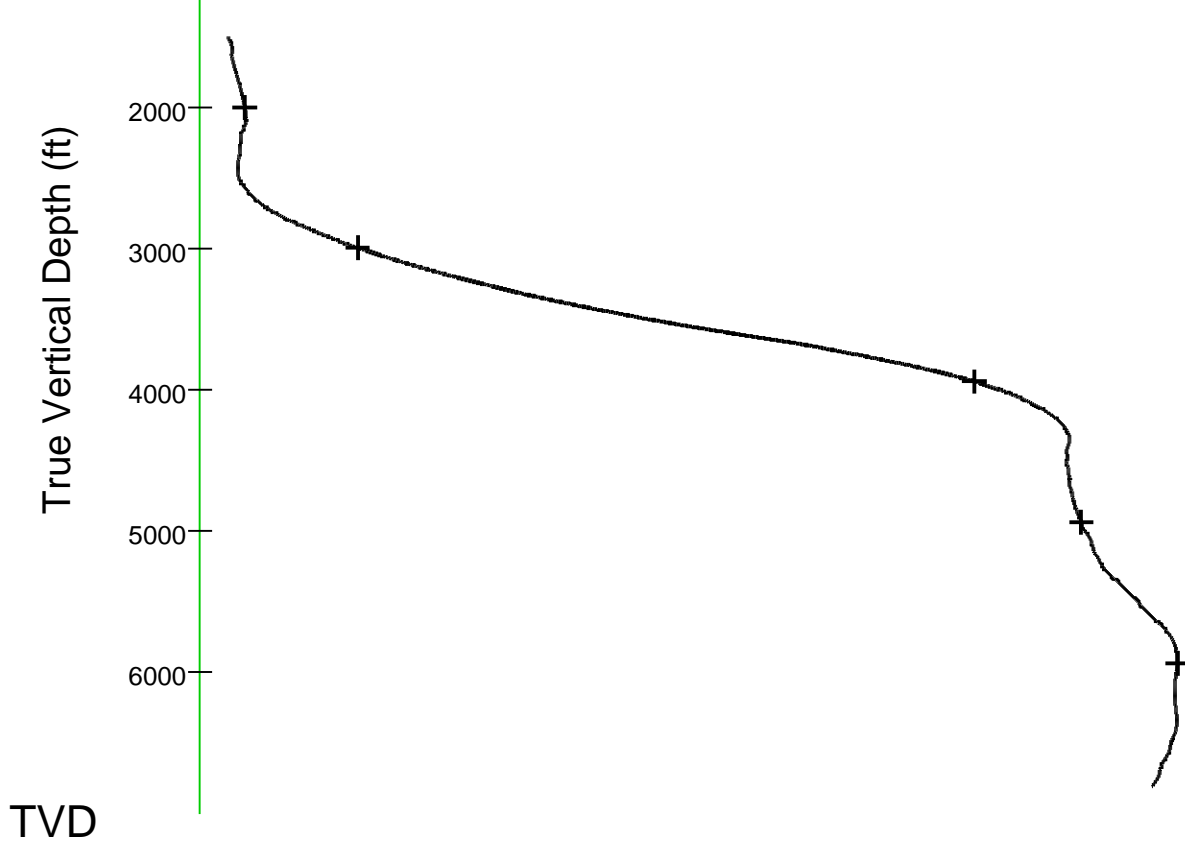
~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
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* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

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## True Vertical Depth vs Closure

Total Drift (ft)

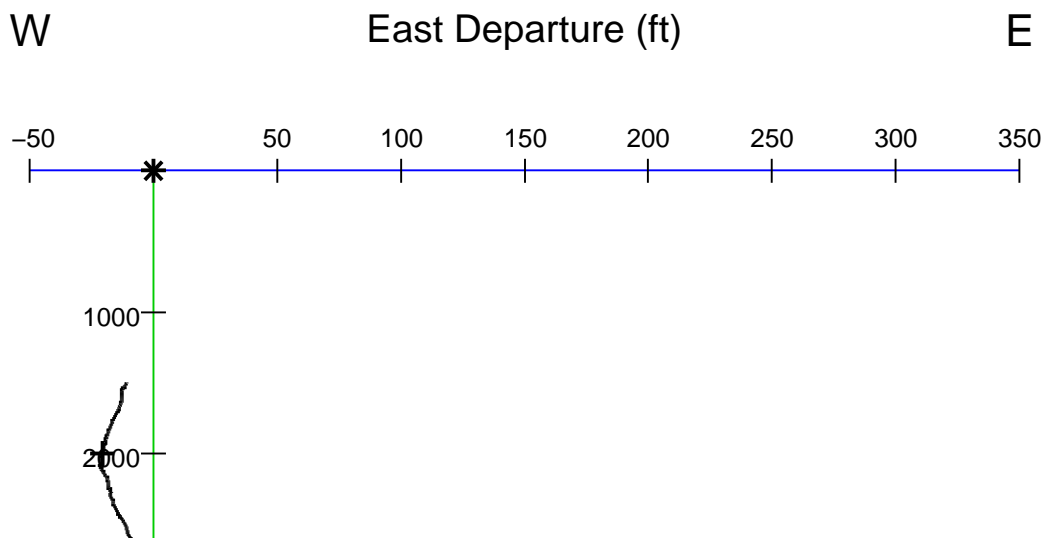




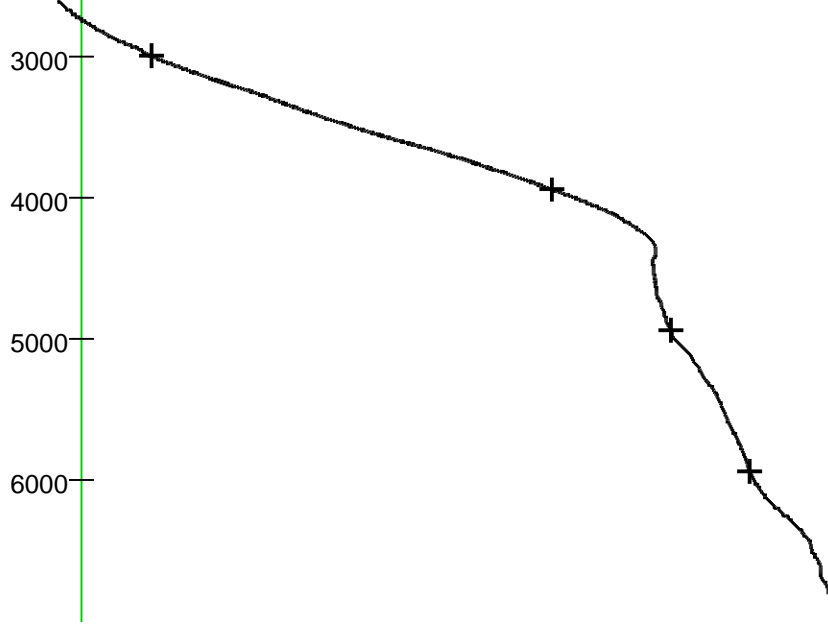
~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

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## True Vertical Depth vs East Departure



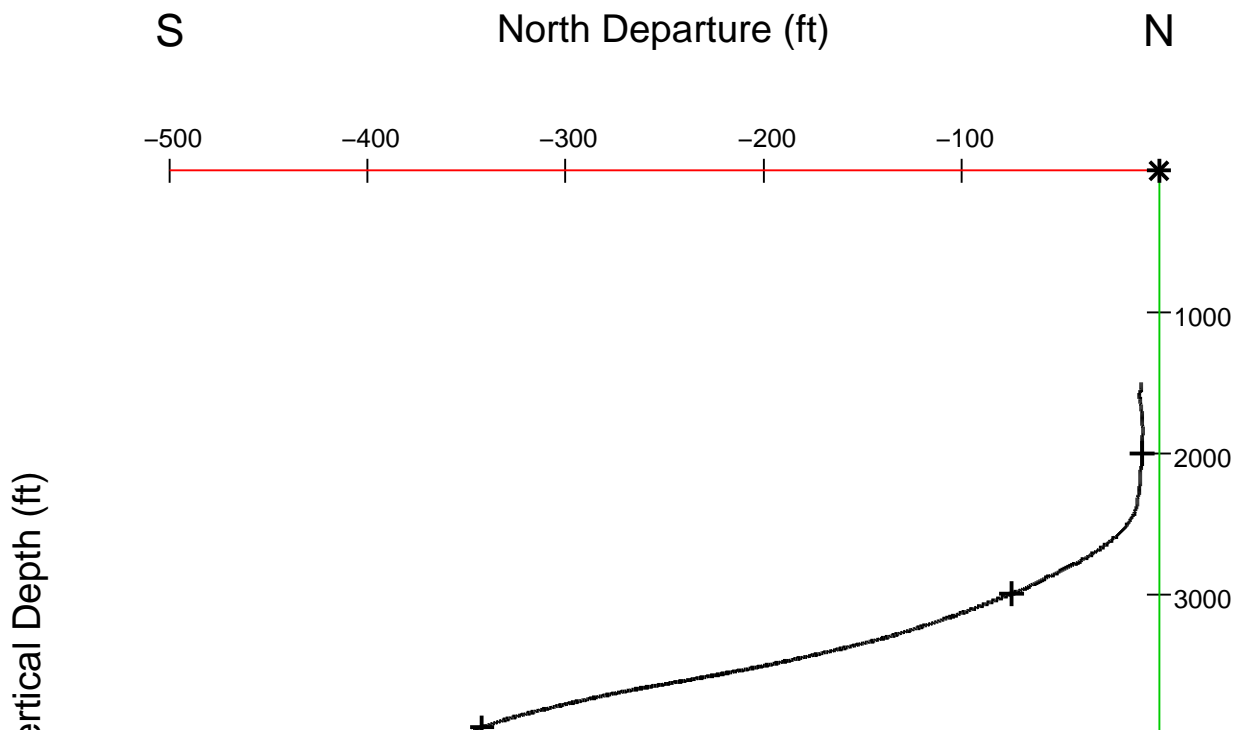
True Vertical Depth



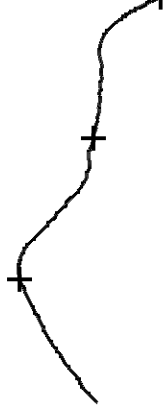
~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

Schlumberger

## True Vertical Depth vs North Departure



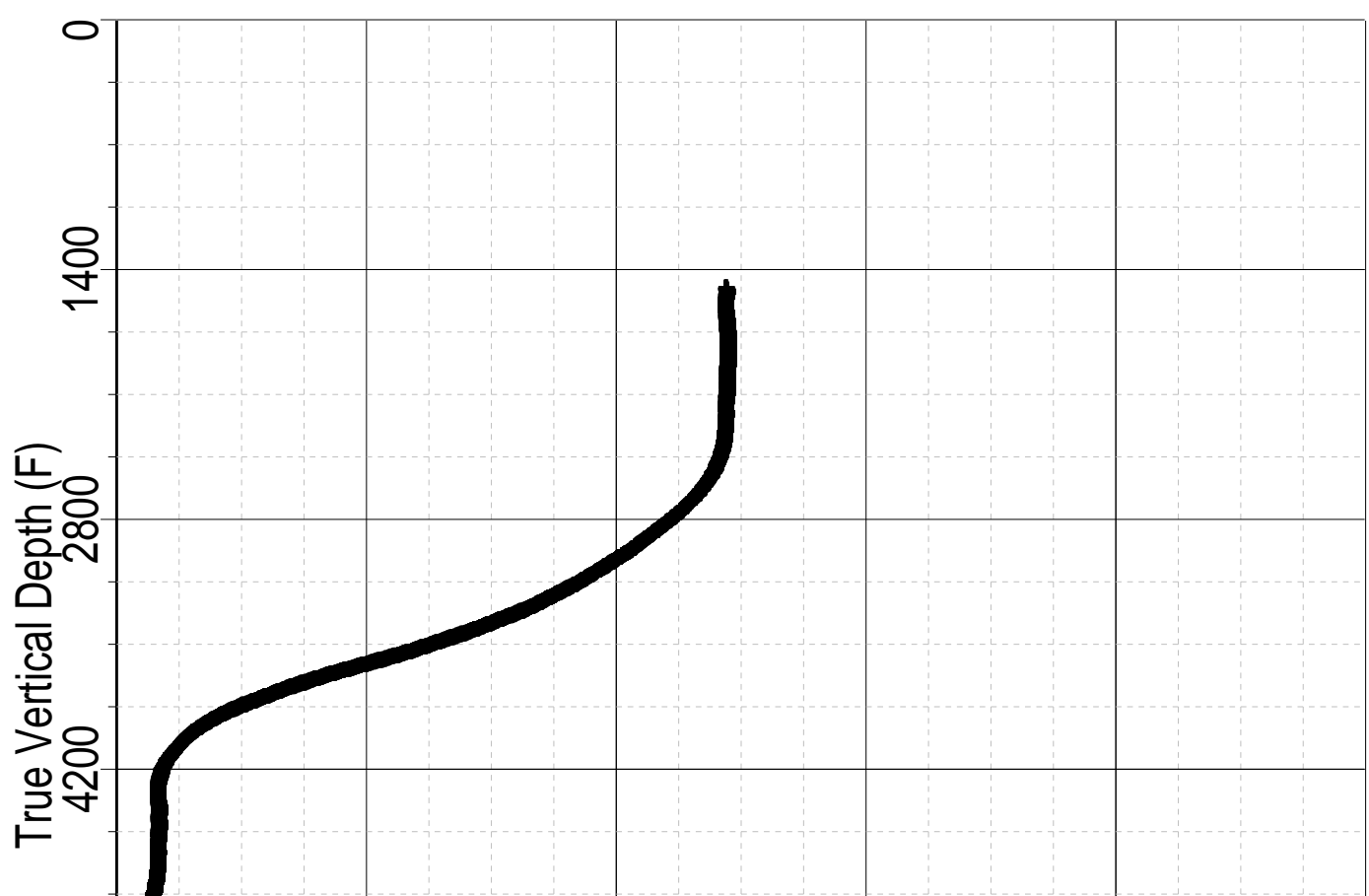
True Ve

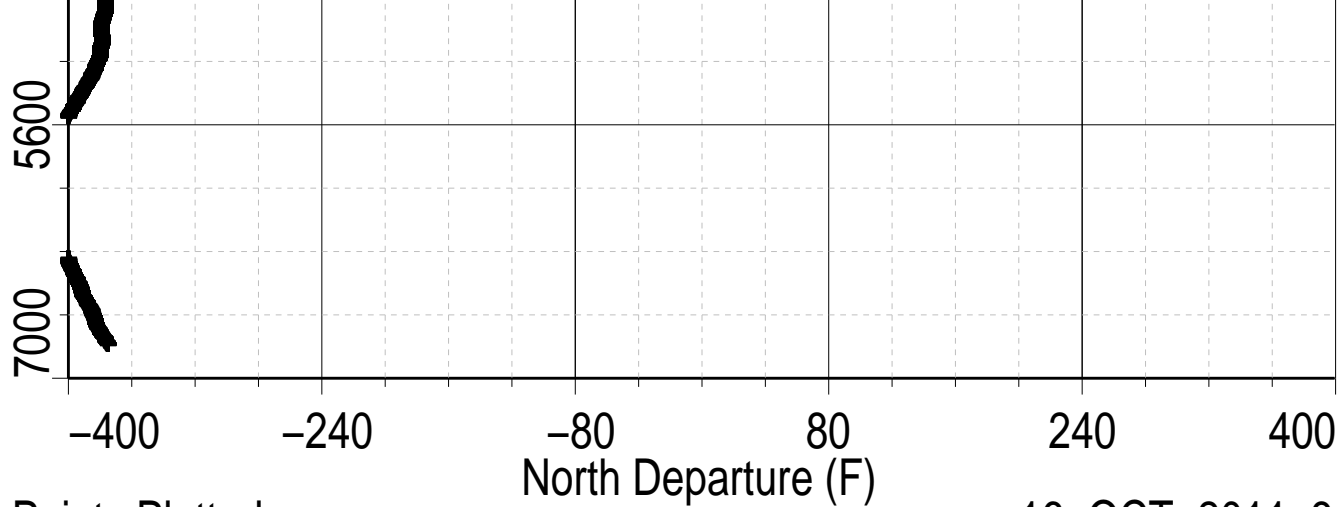


~ Wellbore Course	Max. Drift [S to N]	-126.28ft to -2.5ft
+ Measured Depth Marker: Every 1000.0ft	Max. Drift [W to E]	-6.62ft to 92.1ft
* Wellhead Position	TVD Interval	456.9ft to 2075.2ft
Depth Units (ft)	Final Closure	146.7m (Azim: 141.1Deg)
Drift Units (ft)		

Schlumberger

Index: 6876.0 – 1494.5 FT

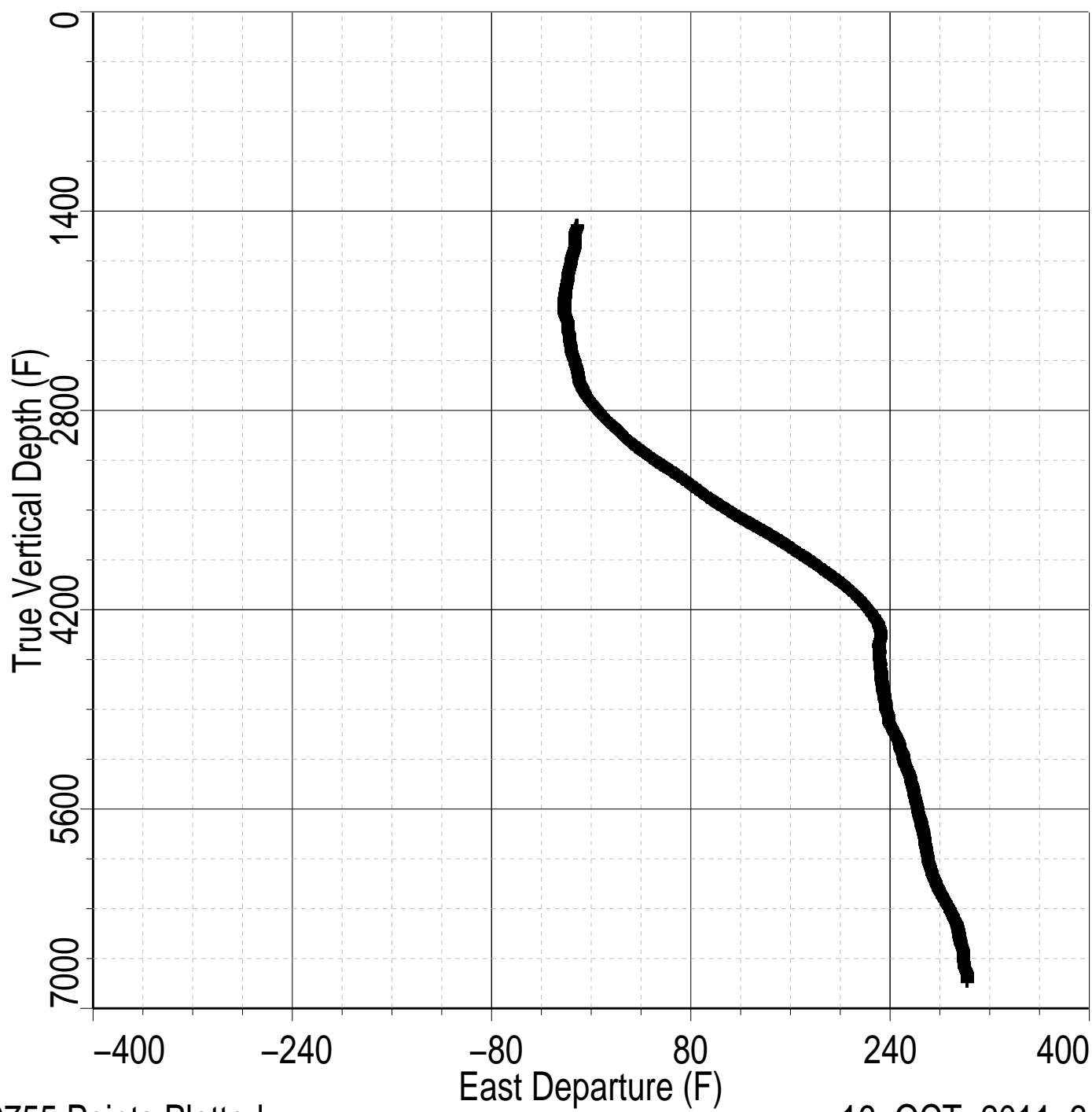




9192 Points Plotted

16-OCT-2011 3:47

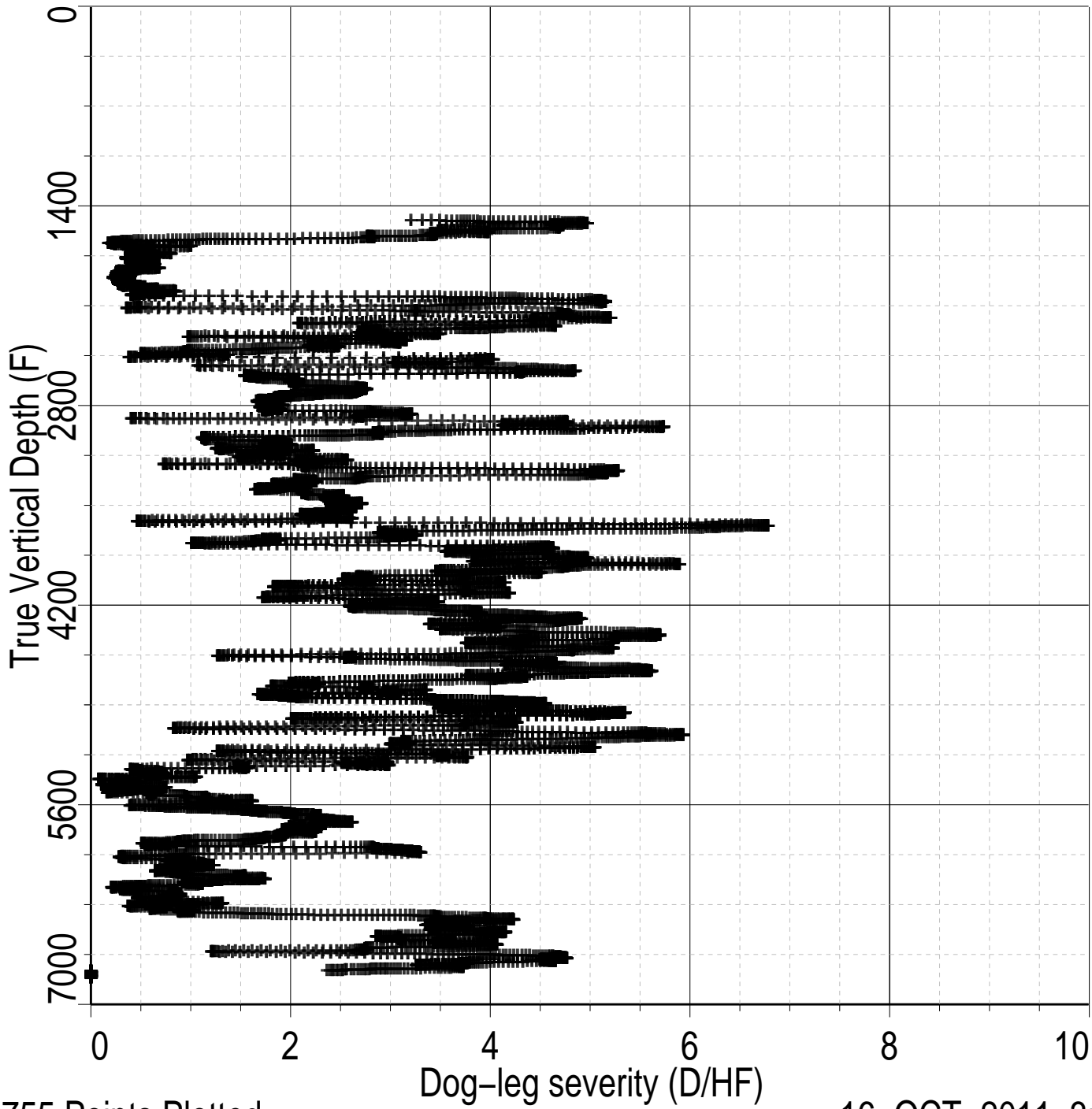
Index: 6876.0 - 1494.5 FT



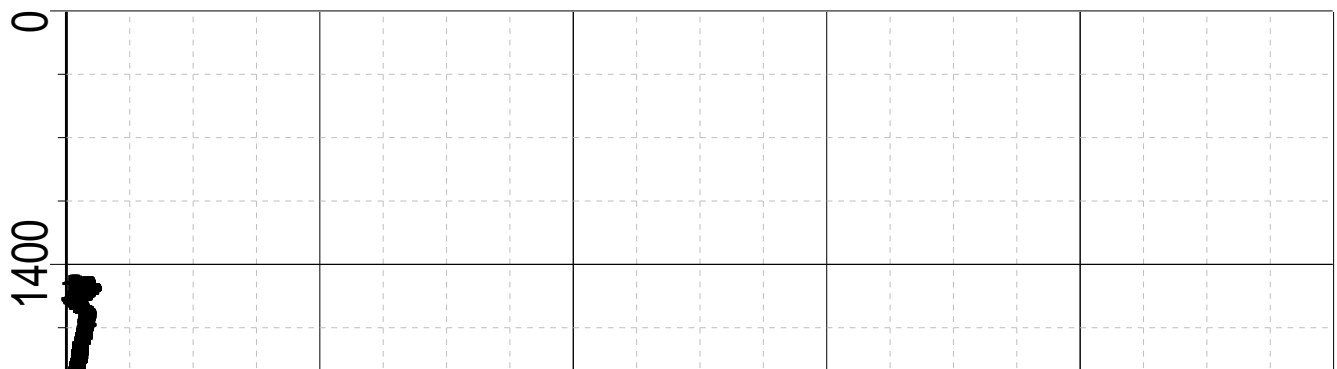
10755 Points Plotted

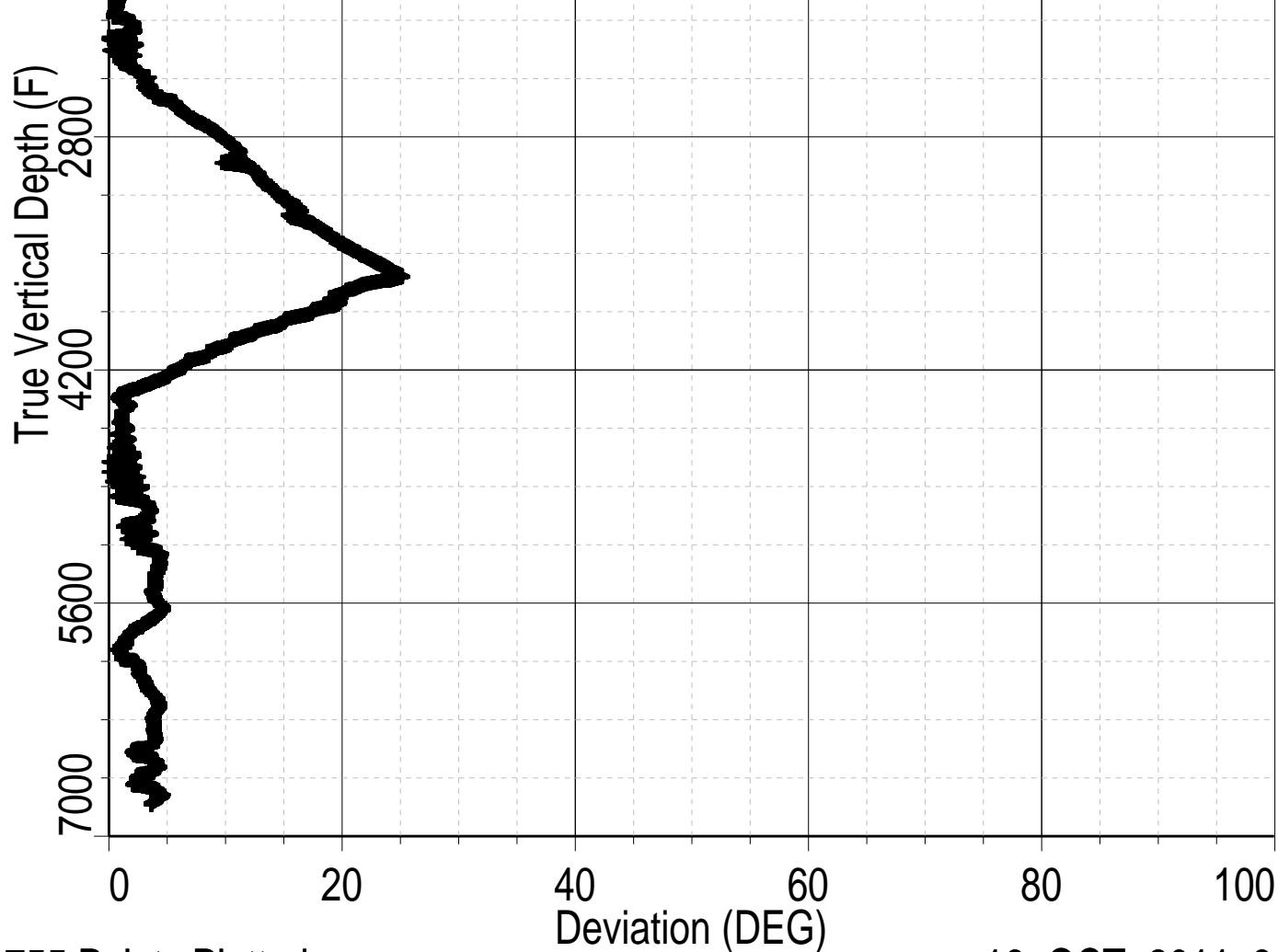
16-OCT-2011 3:47

Index: 6876.0 - 1494.5 FT



Index: 6876.0 - 1494.5 FT

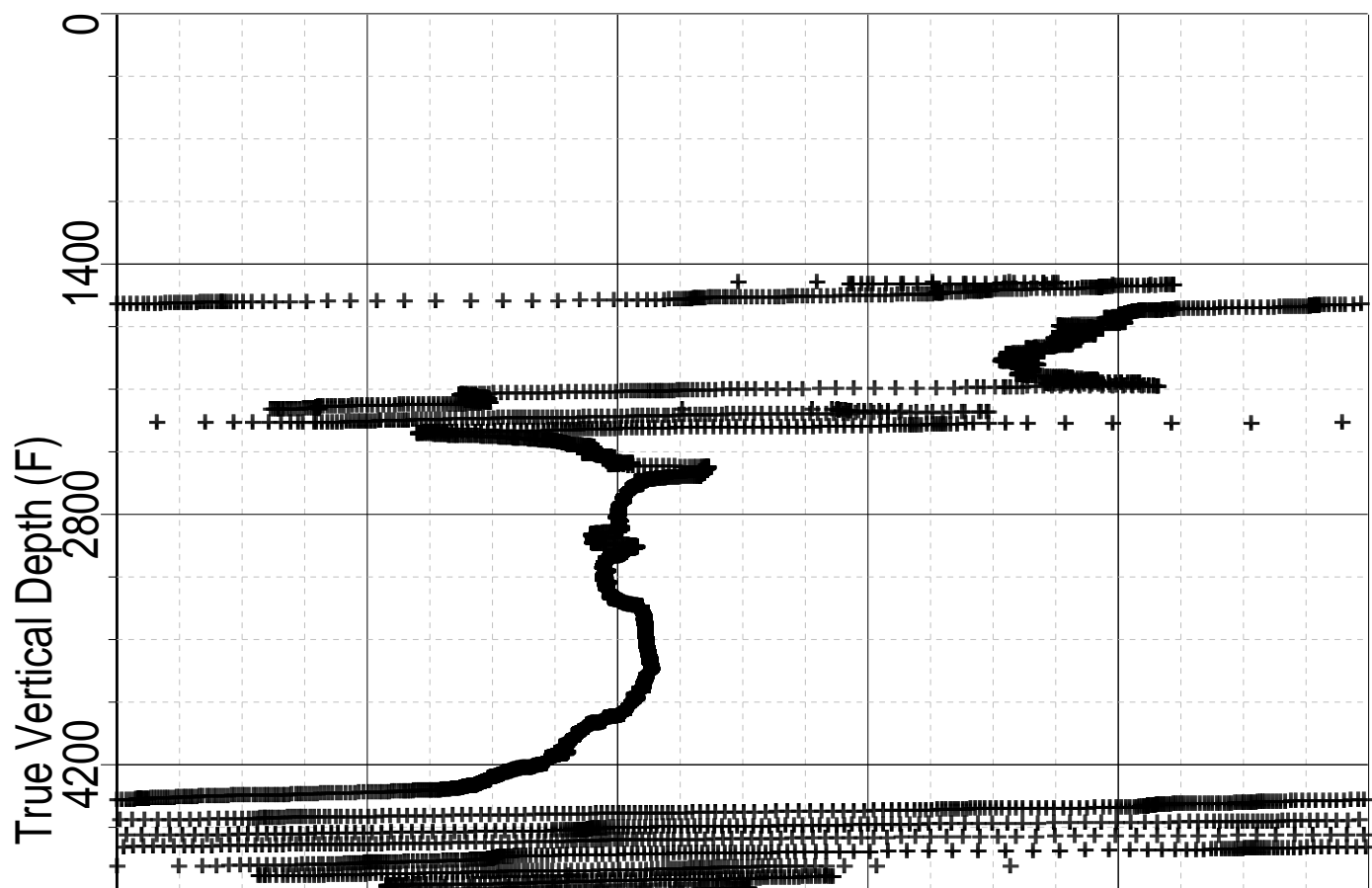




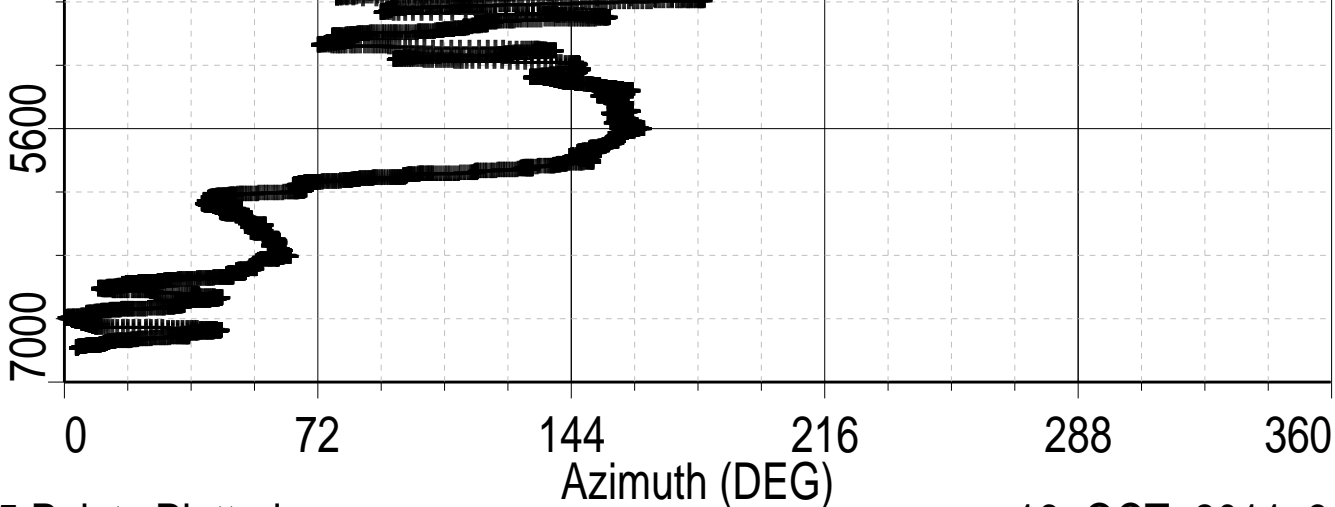
10755 Points Plotted

16-OCT-2011 3:47

Index: 6876.0 - 1494.5 FT







10755 Points Plotted

16-OCT-2011 3:47

~VERSION INFORMATION

VERS. 2.0 :CWLS Log ASCII Standard - VERSION 2.0  
 WRAP. NO :One Line per depth step  
 PROD. Schlumberger :LAS Producer  
 PROG. DLIS to ASCII 19C0-187 :LAS Program name  
 sion  
 CREA. 2011/10/16 04:08 :LAS Creation date  
 MM/DD hh:mm}  
 DLIS\_CREA. 2011-Oct-16 03:44 :DLIS Creation date  
 ime {YYYY-MMM-DD hh:mm}  
 SOURCE. FMI\_MAXS\_MAPC\_CAL\_031PUP.DLIS :DLIS File Name  
 FILE-ID. FMI\_MAXS\_MAPC\_CAL\_031PUP :File Identifier

~WELL INFORMATION

#MNE.M UNIT	DATA	DESCRIPTION
STRT .F	1500.0	:START DEPTH
STOP .F	6900.0	:STOP DEPTH
STEP .F	50.0	:STEP
NULL .	-999.25	:NULL VALUE
COMP .	SANDIA TECHNOLOGIES, LLC	:COMPANY
WELL .	NYSTA TANDEM LOT 1	:WELL
FLD .	WILDCAT	:FIELD
LOC .	LAT: 41.1036	:LOCATION
CNTY .	ROCKLAND	:COUNTY
STAT .	NEW YORK	:STATE
CTRY .		:COUNTRY
API .	31-087-27016-00-00	:API NUMBER
UWI .	031087270160000	:UNIQUE WELL ID
DATE .	15-Oct-2011	:LOG DATE {DD-MM}
SRVC .	Schlumberger	:SERVICE COMPANY
LATI .DEG		:LATITUDE
LONG .DEG		:LONGITUDE
GDAT .		:GeoDetic Datum
TOWN .	CLARKSTOWN	:Township

~PARAMETER INFORMATION

#MNE.M UNIT	VALUE	DESCRIPTION
R1 .	THANK YOU FOR CHOOSING SCHLUMBERGER!!!	:Remark Line 1
R10 .		:Remark Line 10
R11 .		:Remark Line 11
R12 .		:Remark Line 12

R13 . :Remark Line 13  
 R14 . :Remark Line 14  
 R15 . :Remark Line 15  
 R16 . RIG UNION RIG 48 :Remark Line 16  
 R17 . CREW PAUL REYNOLDS BRYAN AUSTIN NAT DORSAY :Remark Line  
 R2 . :Remark Line 2  
 R3 . MATRIX SANDSTONE :Remark Line 3  
 R4 . MATRIX DENSITY 2.65 G/CC :Remark Line 4  
 R5 . :Remark Line 5  
 R6 . :Remark Line 6  
 R7 . :Remark Line 7  
 R8 . :Remark Line 8  
 R9 . :Remark Line 9  
 RUN . 2B :RUN NUMBER  
 PDAT . GROUND LEVEL :Permanent Datum  
 EPD .F 386.000000 :Elevation of Permanent Datum  
 n Sea Level  
 LMF . KELLY BUSHING :Logging Measured From (Name of  
 Elevation Reference)  
 APD .F 16.000000 :Elevation of Depth Reference  
 ve Permanent Datum

#-----

~CURVE INFORMATION  
 #MNEM.UNIT API CODE DESCRIPTION  
 #---- -  
 DEPT .F :DEPTH (BOREHOLE  
 TVDE .F :True Vertical D  
 .4 }  
 SDEVM.DEG :Sonde Deviation  
 ND .F :North Departure  
 HAZIM.DEG :Hole Azimuth {F  
 ED .F :East Departure  
 RB .DEG :Relative Bearing  
 CLOS .F :Closure {F13.4}

#-----

#	DEPT	TVDE	SDEVM	ND	HAZIM	EL
#	RB	CLOS				

#  
~A

1500.0	1499.8745	0.6858	-9.0899	211.7284	-11.0
80.4368	14.2848				
1550.0	1549.8456	1.9630	-9.2341	236.0296	-12.0
325.0211	15.5897				
1600.0	1599.8351	0.4119	-9.8818	29.7239	-12.0
288.5544	16.1701				
1650.0	1649.8264	1.6349	-9.2542	294.2201	-13.0
4.3165	16.1745				
1700.0	1699.8049	1.6310	-8.7790	287.6846	-14.0
352.7984	17.0784				
1750.0	1749.7853	1.4976	-8.4699	283.1650	-16.0
355.4513	18.1089				
1800.0	1799.7701	1.3885	-8.2702	271.3920	-17.0
344.8468	19.1008				
1850.0	1849.7581	1.1528	-8.2239	269.7197	-18.0
350.9277	20.0758				
1900.0	1899.7488	1.0326	-8.3474	260.6062	-19.0
352.9454	20.9967				
1950.0	1949.7412	0.9198	-8.5167	262.2452	-20.0
347.3281	21.8506				
2000.0	1999.7356	0.7832	-8.6354	259.2571	-20.0
247.5242	22.5777				

347.5243	22.5777					
2050.0	2049.7322	0.5276	-8.6239	291.9375	-21.0	
339.0741	23.0994					
2100.0	2099.7261	1.6706	-8.9920	147.8881	-21.0	
5.0866	23.3866					
2150.0	2149.6926	2.2205	-9.5244	100.5291	-19.0	
329.8661	22.0401					
2200.0	2199.6653	0.0656	-9.4370	58.0514	-18.0	
283.4580	20.6798					
2250.0	2249.6499	2.2570	-10.1542	109.8894	-17.0	
349.0757	20.6333					
2300.0	2299.6377	1.8497	-10.3321	171.5290	-17.0	
33.5287	20.2892					
2350.0	2349.6169	1.0703	-10.9176	103.7140	-16.0	
242.6920	19.6829					
2400.0	2399.5933	2.3575	-11.7469	131.2933	-15.0	
213.3799	19.1697					
2450.0	2449.5298	3.2404	-13.5374	136.6082	-13.0	
224.1126	19.0548					
2500.0	2499.4541	3.0373	-15.6907	148.2592	-11.0	
200.4602	19.5718					
2550.0	2549.3479	3.9414	-18.7218	168.1042	-10.0	
64.4904	21.5801					
2600.0	2599.1699	5.7196	-22.6413	151.3856	-9.0	
342.1485	24.5167					
2650.0	2648.8989	6.4114	-27.1108	147.3781	-6.0	
341.9593	27.9405					
2700.0	2698.5381	7.4212	-32.0987	145.7205	-3.0	
341.7765	32.2824					
2750.0	2748.0359	8.7669	-37.8914	144.3901	0.0	
342.4062	37.8961					
2800.0	2797.3862	9.6727	-44.4122	144.0780	5.0	
344.3603	44.7256					
2850.0	2846.6057	10.6397	-51.5600	144.2393	10.0	
347.4070	52.6010					
2900.0	2895.6909	11.0078	-59.1995	136.9467	16.0	
348.8432	61.3434					
2950.0	2944.7471	10.6550	-66.2843	136.9086	22.0	
272.5286	70.0490					
3000.0	2993.7930	12.4097	-74.3179	146.6432	28.0	
6.2448	79.4285					
3050.0	3042.5601	13.0061	-83.1792	140.6148	34.0	
293.3498	90.0850					
3100.0	3091.2322	13.6406	-91.9548	140.3460	41.0	
265.5668	101.0669					
3150.0	3139.7178	14.4969	-101.3732	140.3423	49.0	
267.6122	112.9054					
3200.0	3188.0251	15.4448	-111.3402	140.9724	57.0	
272.4088	125.4920					
3250.0	3236.1152	16.4571	-122.0327	142.0290	66.0	
293.4011	138.9424					
3300.0	3284.1921	15.7645	-133.0406	146.1353	74.0	
173.9777	152.5406					
3350.0	3332.0332	17.7116	-145.6444	151.3309	81.0	
74.0124	167.0603					
3400.0	3379.5195	18.8262	-159.4146	151.7640	89.0	
89.4041	182.7103					
3450.0	3426.7278	19.7537	-173.9467	152.0150	97.0	
81.0743	199.1795					
3500.0	3473.6392	20.8810	-189.2191	152.0954	105.0	
85.5470	216.4744					
3550.0	3520.1710	22.0021	-205.4102	152.4265	113.0	

89.2195	3520.1719	22.0921	-205.4102	152.4365	113.1
3600.0	234.7621				
84.4812	3566.2820	23.3722	-222.5933	152.8774	122.1
3650.0	254.0875				
87.3806	3611.9824	24.4115	-240.6869	153.1345	131.1
3700.0	274.3594				
82.4997	3657.3499	24.2454	-259.5061	153.6333	141.1
3750.0	295.3616				
82.1374	3703.5603	21.3025	-276.4547	151.9037	149.1
3800.0	314.4355				
81.9947	3750.3877	19.7288	-291.8773	151.4884	158.1
3850.0	331.9592				
359.7222	3797.5317	19.7952	-306.3747	149.0100	166.1
3900.0	348.6086				
3.9669	3844.9016	17.5243	-320.0685	147.6252	174.1
3950.0	364.5801				
0.4949	3892.7813	15.2531	-332.0915	145.9946	182.1
4000.0	378.9235				
314.4637	3941.1152	13.9847	-342.2807	140.1738	190.1
4050.0	391.5767				
276.2702	3989.8542	12.2275	-350.3586	134.3678	197.1
4100.0	402.3774				
264.5193	4038.9172	10.4995	-356.8481	131.3035	204.1
4150.0	411.5316				
270.9352	4088.2041	8.5553	-362.2408	127.8060	211.1
4200.0	419.4225				
289.2790	4137.6831	7.1872	-366.7063	125.6765	217.1
4250.0	426.1271				
280.3950	4187.3457	6.3090	-369.9207	121.2182	221.1
4300.0	431.3574				
273.0736	4237.1094	5.0986	-372.0076	111.0110	226.1
4350.0	435.4016				
276.6902	4286.9668	3.3828	-373.1570	104.7123	229.1
4400.0	438.2400				
292.5938	4336.9214	1.2721	-373.4742	78.3220	231.1
4450.0	439.5739				
4.7949	4386.9146	1.2603	-372.8175	344.7097	232.1
4500.0	439.2207				
332.6054	4436.8940	1.4561	-372.2451	235.8096	231.1
4550.0	438.1344				
329.6213	4486.8838	1.1700	-372.5420	38.0955	231.1
4600.0	438.6070				
344.8237	4536.8735	1.5076	-372.6432	144.3101	231.1
4650.0	438.5745				
309.5733	4586.8599	0.7505	-372.8021	258.7147	231.1
4700.0	439.0732				
314.0240	4636.8438	1.1730	-373.2652	37.6208	232.1
4750.0	439.8307				
5.3646	4686.8354	1.7858	-373.3489	144.1700	232.1
4800.0	439.8641				
298.1727	4736.8032	1.6264	-373.7127	69.0104	234.1
4850.0	441.0590				
343.4763	4786.7837	2.1723	-374.3444	102.5537	235.1
4900.0	442.0003				
10.2662	4836.7642	2.4747	-374.9496	135.6424	235.1
4950.0	442.8624				
54.2640	4886.7402	2.3258	-375.6537	159.2133	236.1
5000.0	443.9780				
248.8587	4936.6973	1.5504	-376.4897	91.2957	238.1
5050.0	445.5914				
56.8911	4986.6777	3.0718	-377.2973	131.3398	239.1
	446.7315				

50.8911	440.7919					
5100.0	5036.5908	3.6193	-378.6776	110.8891	241.0	
343.3631	449.2920					
5150.0	5086.5034	3.2575	-378.6926	80.0069	244.0	
280.6678	450.8665					
5200.0	5136.4448	1.2631	-378.2628	100.2176	246.0	
223.3891	451.7439					
5250.0	5186.3833	3.5160	-379.6599	105.7958	248.0	
356.8191	453.9440					
5300.0	5236.3335	2.9385	-380.6075	145.6541	250.0	
55.3732	455.7096					
5350.0	5286.2603	4.1607	-382.8157	140.1031	252.0	
50.3648	458.3902					
5400.0	5336.1113	4.4242	-385.7032	145.5888	254.0	
337.8053	462.1971					
5450.0	5385.9653	4.3810	-389.1305	155.6746	256.0	
7.7809	465.9720					
5500.0	5435.8335	4.0537	-392.4395	156.7862	257.0	
349.9123	469.5494					
5550.0	5485.7100	4.0541	-395.7041	160.3972	259.0	
349.8061	472.9939					
5600.0	5535.5923	3.7892	-398.8880	159.9535	260.0	
348.6469	476.3423					
5650.0	5585.4741	4.1230	-402.1052	164.5086	261.0	
349.8235	479.6908					
5700.0	5635.3193	4.6275	-405.7820	158.3683	262.0	
352.1437	483.5254					
5750.0	5685.1768	3.9692	-409.2074	152.9621	264.0	
348.9642	487.2592					
5800.0	5735.0859	2.9502	-411.7809	145.6787	266.0	
350.3127	490.2557					
5850.0	5785.0449	1.7865	-413.4420	141.0145	267.0	
5.1596	492.2539					
5900.0	5835.0264	1.4789	-414.2227	102.5301	268.0	
21.4773	493.4903					
5950.0	5885.0161	0.9626	-414.1939	68.4917	269.0	
72.8360	494.0054					
6000.0	5935.0063	1.2147	-413.8169	65.8453	270.0	
62.1210	494.1800					
6050.0	5984.9644	2.6313	-412.4011	40.2634	271.0	
7.2539	493.7840					
6100.0	6034.9111	2.7608	-410.7248	50.4076	273.0	
3.2314	493.2545					
6150.0	6084.8413	3.1727	-409.0032	52.8265	275.0	
352.9696	492.9366					
6200.0	6134.7559	3.6404	-407.2810	56.5397	277.0	
350.4248	492.8294					
6250.0	6184.6309	4.2189	-405.3200	57.0676	280.0	
343.1146	492.8710					
6300.0	6234.4917	4.1918	-403.4377	60.3292	283.0	
340.8820	493.1706					
6350.0	6284.3706	3.8046	-401.7462	61.9286	286.0	
345.6514	493.5459					
6400.0	6334.2568	3.8826	-399.9757	54.3550	289.0	
336.1676	493.7769					
6450.0	6384.1411	3.9731	-397.8982	49.0863	292.0	
337.6029	493.6837					
6500.0	6434.0181	3.8756	-395.2263	23.6995	294.0	
308.4147	492.8448					
6550.0	6483.9341	2.1013	-392.4883	23.8432	295.0	
219.6906	491.1194					
6600.0	6533.8804	3.9389	-390.7226	38.3910	296.0	

59.9856	490.5493						
6650.0	6583.7500	4.3159	-387.6350	17.5765	298.0		
1.0586	489.2126						
6700.0	6633.6450	2.5403	-384.4669	1.6077	298.0		
270.3067	486.9797						
6750.0	6683.6011	2.0878	-382.3984	19.9110	299.0		
203.1921	485.4839						
6800.0	6733.5054	4.2168	-380.0086	34.0709	300.0		
3.5901	484.7361						
6850.0	6783.3560	3.9916	-376.3661	8.0685	302.0		
287.5429	482.6207						
6900.0	6809.2998	3.7223	-374.6620	3.6255	302.0		
259.4342	481.3756						

**Schlumberger**

## CALIBRATIONS

MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Full-Bore Scanner – B Wellsite Calibration – Caliper Calibration</b>							
Before: 14-Oct-2011 12:16							
Caliper 1 Small Jig	8.000	N/A	7.851	N/A	N/A	N/A	IN
Caliper 2 Small Jig	8.000	N/A	7.830	N/A	N/A	N/A	IN
Caliper 1 Large Jig	12.00	N/A	11.58	N/A	N/A	N/A	IN
Caliper 2 Large Jig	12.00	N/A	11.59	N/A	N/A	N/A	IN
<b>Powered Positioning Device/Caliper 1 Wellsite Calibration – PPC1 Caliper Calibration</b>							
Before: 14-Oct-2011 17:22							
PPC1 Radius 1 Raw Small Radius	3.500	N/A	4.562	N/A	N/A	0.5000	IN
PPC1 Radius 1 Raw Large Radius	8.000	N/A	8.936	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Small Radius	3.500	N/A	3.455	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Large Radius	8.000	N/A	8.077	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Small Radius	3.500	N/A	4.431	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Large Radius	8.000	N/A	8.803	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Small Radius	3.500	N/A	3.475	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Large Radius	8.000	N/A	7.903	N/A	N/A	0.5000	IN
<b>Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration</b>							
Before: 15-Oct-2011 18:41							
EDTC Z-Axis Acceleration	32.19	N/A	31.96	N/A	N/A	N/A	F/S2
<b>Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration</b>							
Before: 14-Oct-2011 12:27							
Gamma Ray (Jig – Bkg)	145.5	N/A	145.5	N/A	N/A	13.22	GAPI
Gamma Ray (Calibrated)	160.0	N/A	160.0	N/A	N/A	15.00	GAPI

### Full-Bore Scanner – B / Equipment Identification

**Primary Equipment:**

FullBore Scanner Sonde  
 FullBore Scanner Sonde Upper part  
 FullBore Scanner Sonde Cartridge

FBSS – B  
 FBSh – A  
 FBSC – B

GPIT Cartridge – F  
 Insulating Sub  
 FullBore Scanner Control Cartridge

GPIC – F 847  
 AH – 185 1864  
 FBCC – A 1797

Auxiliary Equipment:  
 Electronics Cartridge Housing

ECH – MRA

Full-Bore Scanner – B Wellsite Calibration							
Caliper Calibration							
Phase	Caliper 1 Small Jig IN		Value	Phase	Caliper 2 Small Jig IN		
Before			7.851	Before			
	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		
Before			11.58	Before			
	10.20 (Minimum)	12.00 (Nominal)	13.80 (Maximum)		10.20 (Minimum)	12.00 (Nominal)	13.80 (Maximum)
Before: 14-Oct-2011 12:16							

Powered Positioning Device/Caliper 1 / Equipment Identification

Primary Equipment:  
 PPC Powered Positioning Device/Caliper  
 PPC1 Caliper Standard

PPC1 – B 8334  
 PPC\_ –

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration							
PPC1 Caliper Calibration							
Phase	PPC1 Radius 1 Raw Small Radius IN		Value	Phase	PPC1 Radius 1 Raw Large Radius IN		
Before			4.562	Before			
	1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)		6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)
Phase	PPC1 Radius 2 Raw Small Radius IN		Value	Phase	PPC1 Radius 2 Raw Large Radius IN		
Before			3.455	Before			
	1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)		6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)
Phase	PPC1 Radius 3 Raw Small Radius IN		Value	Phase	PPC1 Radius 3 Raw Large Radius IN		
Before			4.431	Before			
	1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)		6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)
Phase	PPC1 Radius 4 Raw Small Radius IN		Value	Phase	PPC1 Radius 4 Raw Large Radius IN		
Before			3.475	Before			
	1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)		6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)
Before: 14-Oct-2011 17:22							

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:  
 EDTC Gamma Ray Detector  
 Enhanced DTS Cartridge

EDTG – A/B  
 EDTC – B




Auxiliary Equipment:  
 EDTC Housing

EDTH – B 8298

Enhanced DTS Cartridge Wellsite Calibration			
EDTC Accelerometer Calibration			
Phase	EDTC Z-Axis Acceleration F/S2	Value	
Before		31.96	
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)
Before: 15-Oct-2011 18:41			

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		51.68	Before		145.5	Before		160.0
	0 (Minimum)      30.00 (Nominal)      120.0 (Maximum)			132.2 (Minimum)      145.5 (Nominal)      158.7 (Maximum)			145.0 (Minimum)      160.0 (Nominal)      175.0 (Maximum)	

Before: 14-Oct-2011 12:27

Company: **SANDIA TECHNOLOGIES, LLC**



Well: **NYSTA TANDEM LOT 1**

Field: **WILDCAT**

County: **ROCKLAND**

State: **NEW YORK**

**DIRECTIONAL SURVEY**