



# Directional Drilling Report

**Drilling Report Number:** DDR-0004

**Customer:** Advanced Drilling Technologies

**Address:** Advanced Drilling Technologies, LLC  
529 North Albany Street  
Suite 1250  
Yuma, CO 80759

**Well Name:** Davis 32-07H

**Date:** 26/01/2012

AnTech Ltd  
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# Summary

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<b>Customer:</b>	Advanced Drilling Technologies	<b>Local Co-ordinate Reference:</b>	GPS
<b>Project:</b>	Polaris Operational Trials	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Site:</b>	Davis	<b>MD Reference:</b>	Pason Bit Depth
<b>Well:</b>	Davis 32-07H	<b>North Reference:</b>	Gyro True North
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Tool Used:</b>	Polaris
<b>Motor Bend Angle:</b>	2.77 & 1.15	<b>Tool Name:</b>	Yellow (1642ft), Green (658ft)

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## Well

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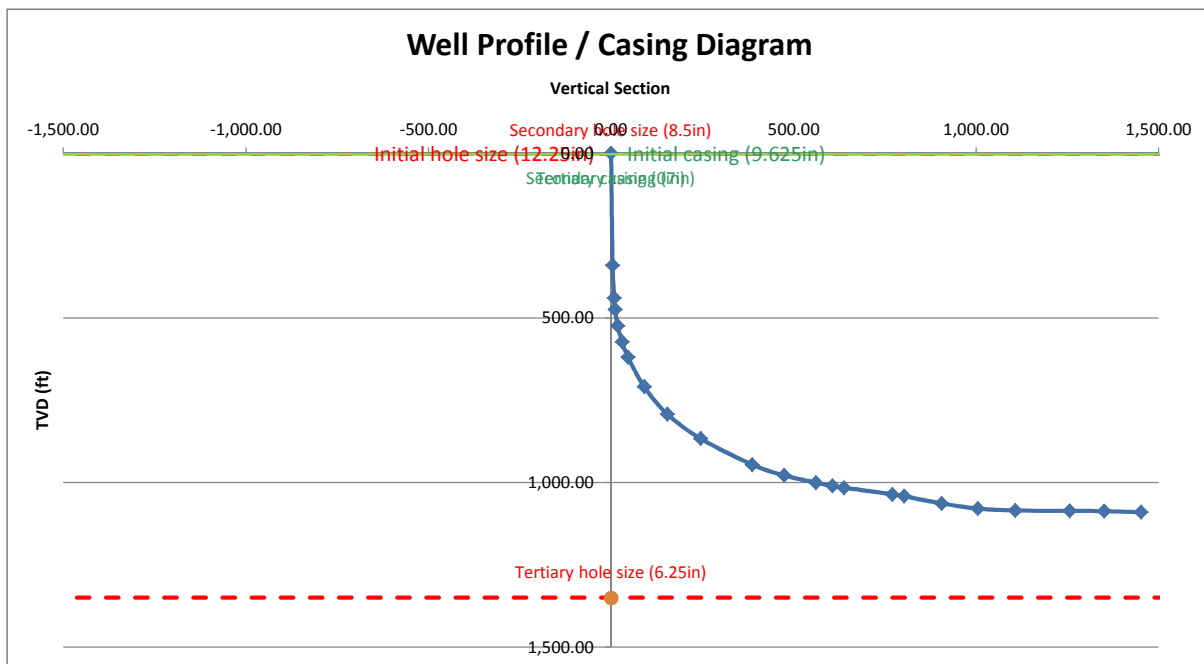
Northing [ft]:		Deviation In Azimuth Direction [ft]:	1451.604531
Easting [ft]:		Maximum Inclination:	90.4
SHL Latitude:	39°21'14.2"N	Survey Inclination Error:	±0.15
SHL Longitude:	101°42'50.2"W	Survey Azimuth Error:	±3
		Deviation from Plan at Zone Entry [ft]:	107.07
		Deviation from Plan at TD [ft]:	105.68

# Casing Diagram

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

Depth (ft)	Hole Size (in)	Casing				Cement	Completion Comments
		Size (in)	Weight (ppf)	Grade	Thread		
365	12.25	9.625	29.3	J-55		Neat	
1350	8.5	7	6.538	J-55		Neat	

	Diameter (in)	Start Depth (TVD)	End Depth (TVD)
Initial hole size	12.250		365.0
Initial casing	9.625		365.0
Secondary hole size	8.500		1350.0
Secondary casing	7.000		1350.0
Tertiary hole size	6.250	1350.0	2300.0
Tertiary casing			





# Well Data

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<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

## Formation Tops

Name	TVD [ft]	Data Points Direction	Distance [ft]	Dip distance ( $\chi$ ) (Dip=1'/ $\chi$ )
TOP BIZ	1065		3000	337.25
BOTTOM BIZ	1093		3000	337.25



# Well Plan Data

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

<b>Final Bearing / Azimuth for section view (°)</b>	347.64
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## Projected TD Survey

Measured Depth ft	Inclination Angle degrees	Azimuth degrees	True Vertical Depth ft	North/South ft	East/West ft	Vertical Section ft	Dogleg Severity °/100ft	Reference	Description	Section
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RKB	tie point	0
380.00	0.00	0.00	380.00	0.00	0.00	0.00	0.00	KOP	build	1
400.00	1.78	347.64	400.00	0.30	-0.07	0.31	8.89		build	1-2
500.00	10.67	347.64	499.31	10.88	-2.38	11.14	8.89		build	1-2
600.00	19.56	347.64	595.75	36.32	-7.96	37.19	8.89		build	1-2
700.00	28.45	347.64	687.01	76.02	-16.66	77.82	8.89		build	1-2
800.00	37.34	347.64	770.90	129.01	-28.27	132.08	8.89		build	1-2
900.00	46.23	347.64	845.39	194.04	-42.52	198.64	8.89		build	1-2
1000.00	55.12	347.64	908.70	269.52	-59.06	275.92	8.89		build	1-2
1100.00	64.01	347.64	959.31	353.66	-77.50	362.05	8.89		build	1-2
1200.00	72.90	347.64	996.00	444.42	-97.39	454.97	8.89		build	1-2
1223.64	75.00	347.64	1,002.54	466.62	-102.25	477.69	8.89	End Build	straight	2
1263.64	75.00	347.64	1,012.89	504.35	-110.52	516.32	0.00	Change Bit	build	3
1300.00	76.15	347.64	1,021.95	538.75	-118.06	551.53	3.16		build	3-4
1400.00	79.31	347.64	1,043.20	634.19	-138.97	649.24	3.16		build	3-4
1500.00	82.47	347.64	1,059.03	730.63	-160.10	747.96	3.16		build	3-4
1550.98	84.08	347.64	1,065.00	780.08	-170.94	798.59	3.16	Top of BIZ	build	3-4
1600.00	85.63	347.64	1,069.40	827.77	-181.39	847.41	3.16		build	3-4
1700.00	88.79	347.64	1,074.26	925.32	-202.77	947.28	3.16		build	3-4
1725.67	89.60	347.64	1,074.63	950.39	-208.26	972.94	3.16	End Build	straight	4
1800.00	89.60	347.64	1,075.14	1,023.00	-224.17	1,047.28	0.00		straight	4-5
1900.00	89.60	347.64	1,075.84	1,120.68	-245.58	1,147.27	0.00		straight	4-5
2000.00	89.60	347.64	1,076.54	1,218.36	-266.98	1,247.27	0.00		straight	4-5
2100.00	89.60	347.64	1,077.24	1,316.04	-288.39	1,347.27	0.00		straight	4-5
2200.00	89.60	347.64	1,077.94	1,413.72	-309.79	1,447.27	0.00		straight	4-5
2300.00	89.60	347.64	1,078.64	1,511.40	-331.20	1,547.26	0.00		straight	4-5
2400.00	89.60	347.64	1,079.33	1,609.08	-352.60	1,647.26	0.00		straight	4-5
2500.00	89.60	347.64	1,080.03	1,706.76	-374.01	1,747.26	0.00		straight	4-5
2600.00	89.60	347.64	1,080.73	1,804.44	-395.41	1,847.26	0.00		straight	4-5
2700.00	89.60	347.64	1,081.43	1,902.12	-416.82	1,947.25	0.00	TD	End straight	5



## Drilling Data

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

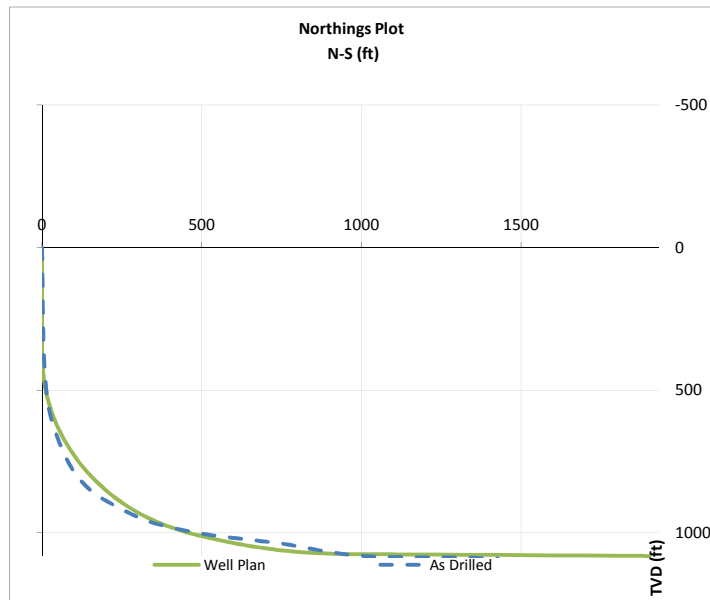
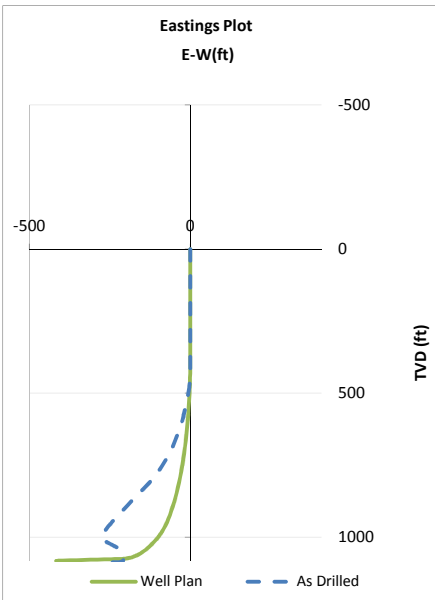
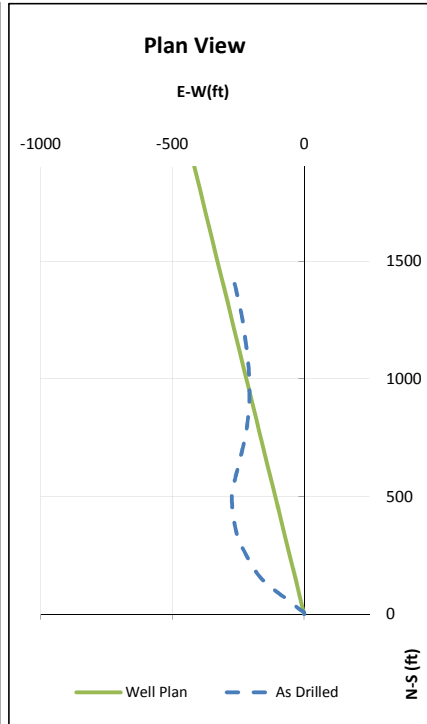
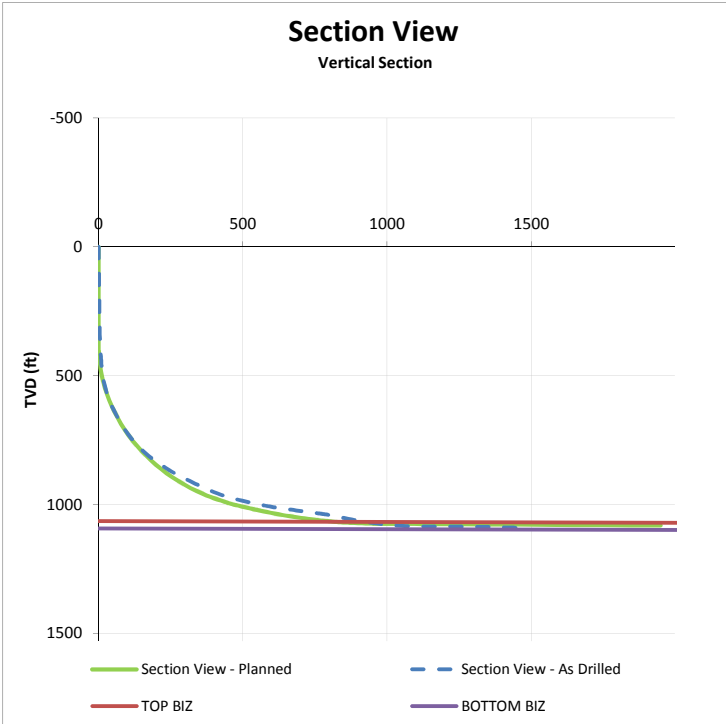
<b>Final Bearing / Azimuth for section view (°)</b>	347.64
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### Actual Survey Data

Measured Depth ft	Bit Depth ft (MD +30 ft)	Inclination Angle degrees	Azimuth degrees	True Vertical Depth ft	North/South ft	East/West ft	Vertical Section ft	Dogleg Severity °/100ft	Reference	Description	Time	Date
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIH	KB	09:30	22/01/2012
340.00	370.00	1.47	0.00	339.96	4.36	0.00	4.36	0.43	Out of Casing	vertical	10:17	
440.00	470.00	3.81	347.52	439.85	8.89	-0.72	8.92	2.40	Hole Bottom	vertical	10:49	
475.00	505.00	7.31	299.48	474.70	11.12	-2.91	11.50	15.82		build	11:19	
525.00	555.00	11.87	298.32	523.98	15.13	-10.21	18.25	9.13		build	12:08	
575.00	605.00	16.88	313.82	572.42	22.60	-19.98	30.17	12.55		build	12:56	
625.00	655.00	21.78	312.70	619.59	33.93	-32.05	46.67	9.83		build	13:25	
725.00	755.00	30.73	311.59	709.18	63.53	-64.86	90.79	8.96		build	14:44	
830.00	860.00	44.07	308.17	792.42	104.09	-113.85	154.26	12.85		build	15:59	
948.00	978.00	58.07	323.60	866.65	170.32	-176.37	245.18	15.57		build	17:15	
1115.00	1145.00	65.85	342.38	945.64	301.09	-242.04	386.31	10.94		build	20:46	
1215.00	1245.00	75.96	348.29	978.34	392.38	-265.78	473.92	11.55		build	22:14	
1315.00	1345.00	78.42	1.21	1,000.60	489.25	-274.63	561.06	12.83		build	23:30	
1371.00	1401.00	81.34	10.94	1,010.46	543.99	-268.78	606.77	17.88	Through Plug - Air switch	build	16:00	24/01/2012
1411.00	1441.00	83.45	13.55	1,015.76	582.73	-260.37	638.25	8.35	First survey with air	Straight	19:37	
1570.00	1600.00	82.00	11.20	1,035.89	736.77	-226.57	770.82	1.73		Straight	22:41	
1606.00	1636.00	79.51	9.57	1,041.68	771.72	-220.16	802.51	8.23		walk	11:23	25/01/2012
1718.00	1748.00	77.87	1.90	1,063.67	880.90	-209.17	905.39	6.87	In Zone	walk	13:00	
1821.00	1851.00	84.70	359.25	1,079.27	982.64	-208.17	1,004.44	7.10		build	14:15	
1925.00	1955.00	88.83	354.62	1,085.14	1,086.27	-213.73	1,107.10	5.96		Straight	17:09	
2074.00	2104.00	90.40	351.82	1,086.14	1,234.21	-231.32	1,255.70	2.15		Straight	19:31	
2169.00	2199.00	88.28	348.02	1,087.24	1,327.71	-247.94	1,350.66	4.58		Straight	02:54	26/01/2012
2270.00	2300.00	88.32	348.94	1,090.23	1,426.63	-268.10	1,451.60	0.91	TD	TD	04:43	

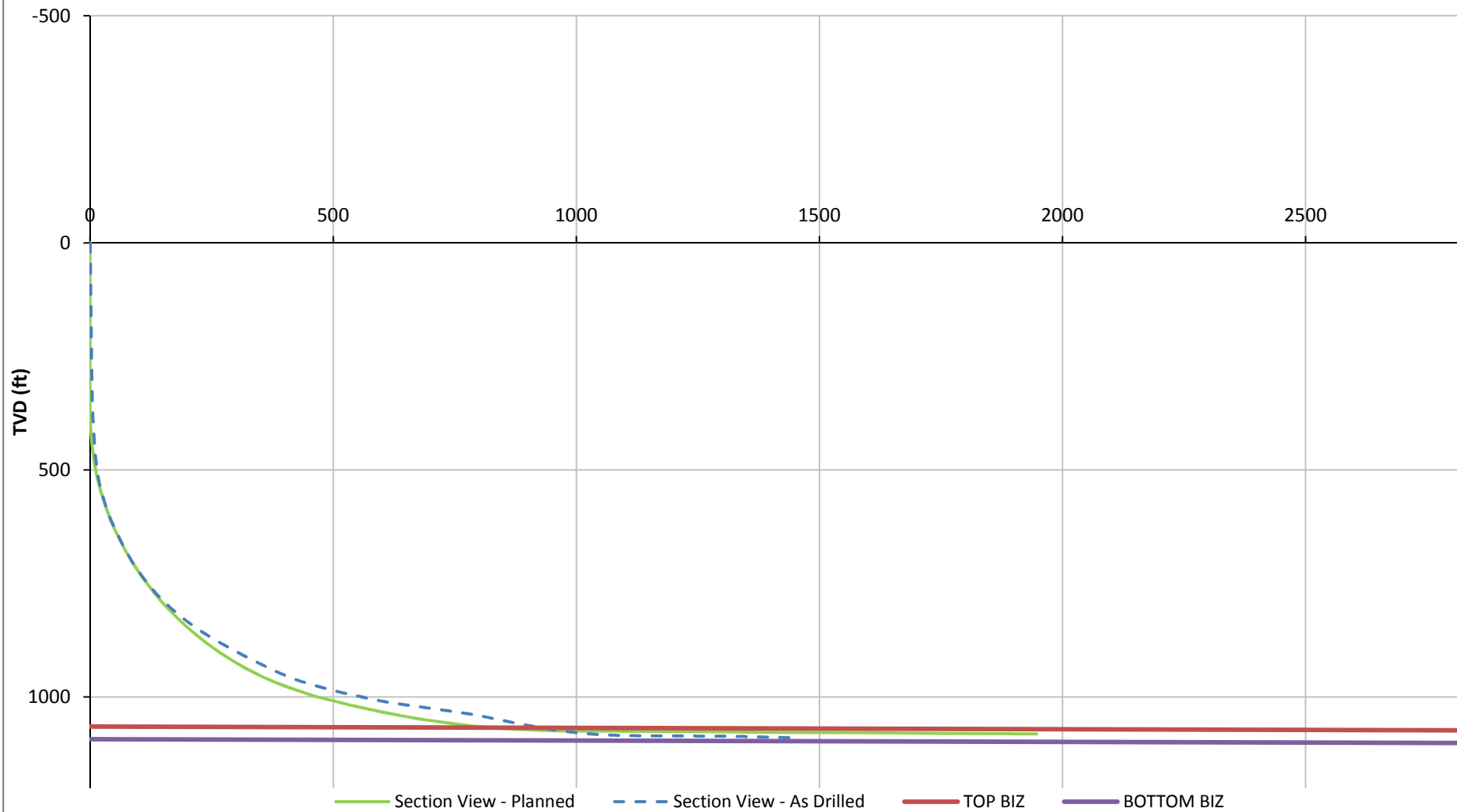
# Summary Well Plots

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 9/32")	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature



# Section View

Vertical Section

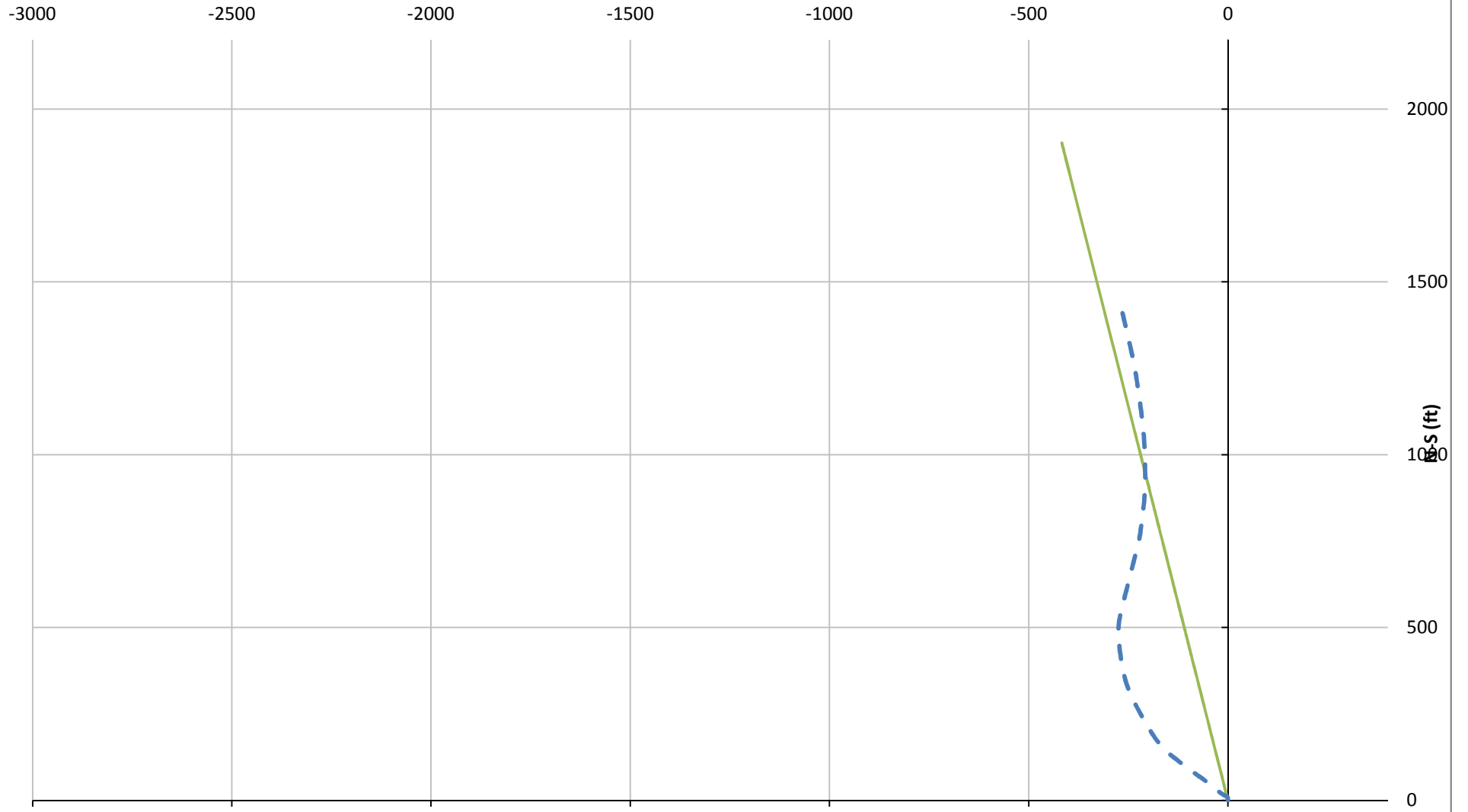






# Plan Plot

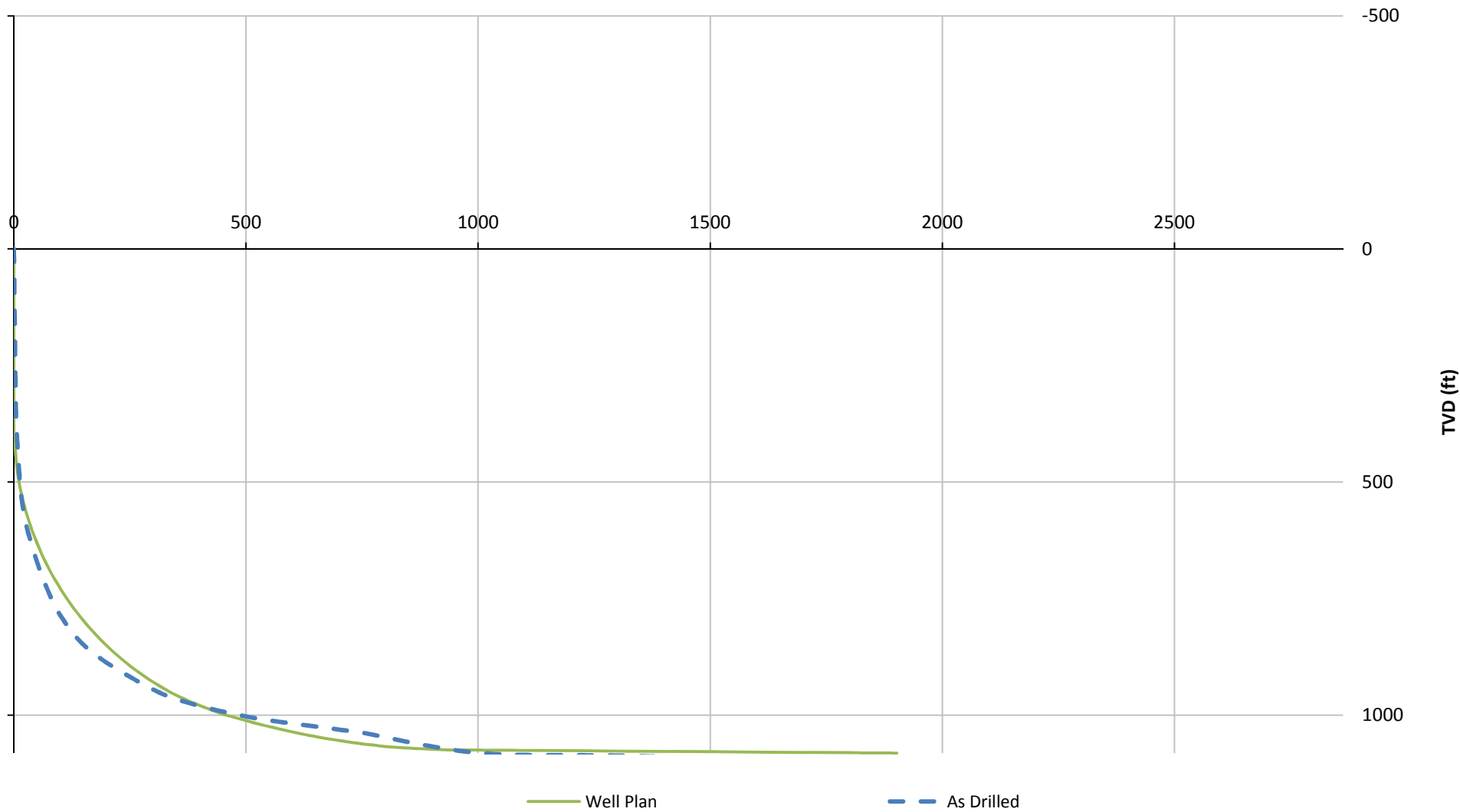
E-W(ft)



Well Plan As Drilled

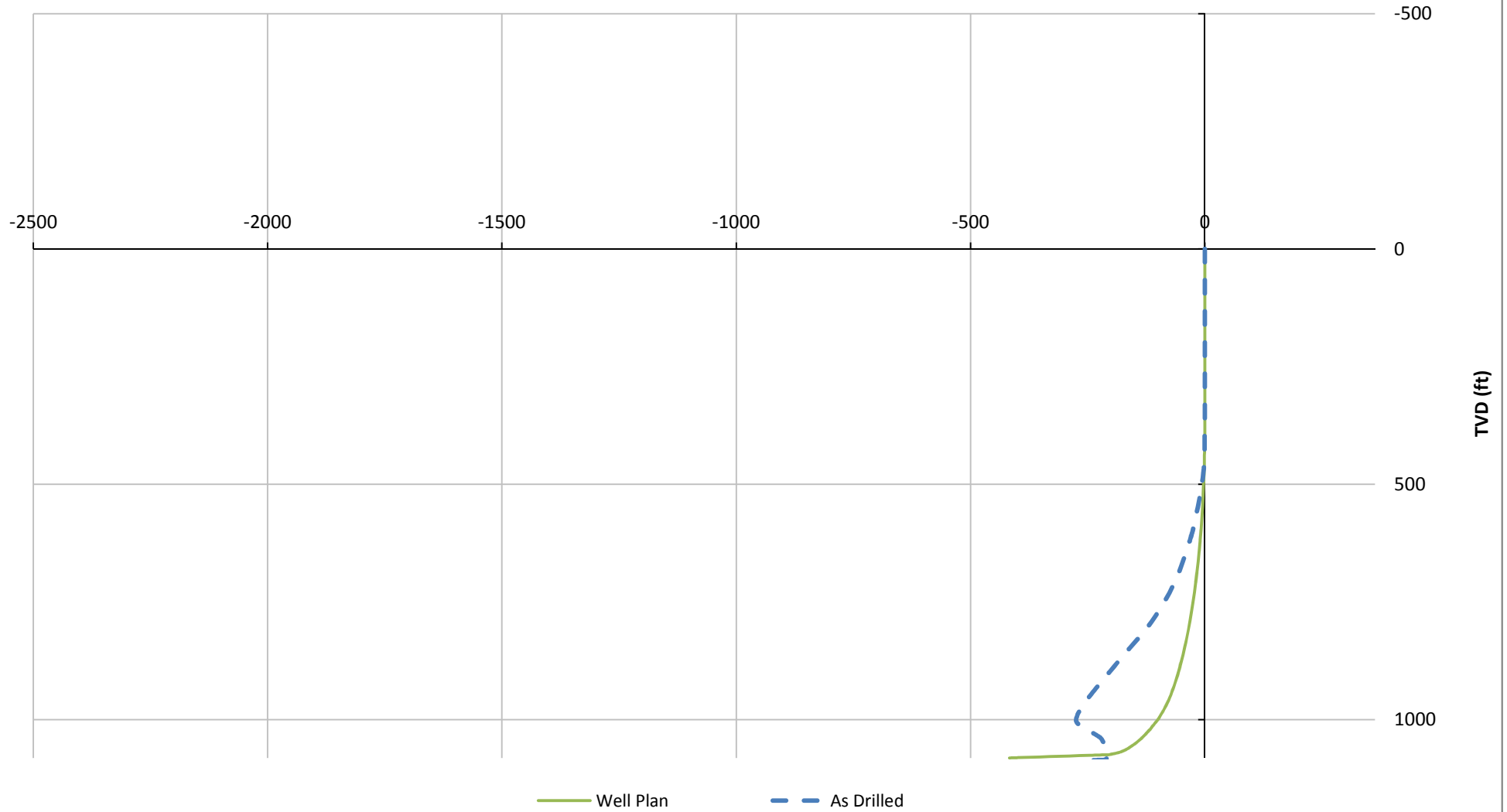
# Northings Plot

N-S (ft)



# Eastings Plot

E-W(ft)





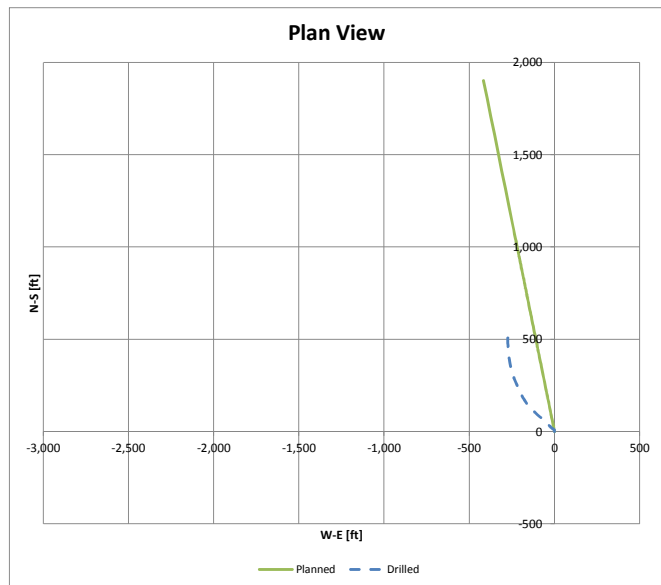
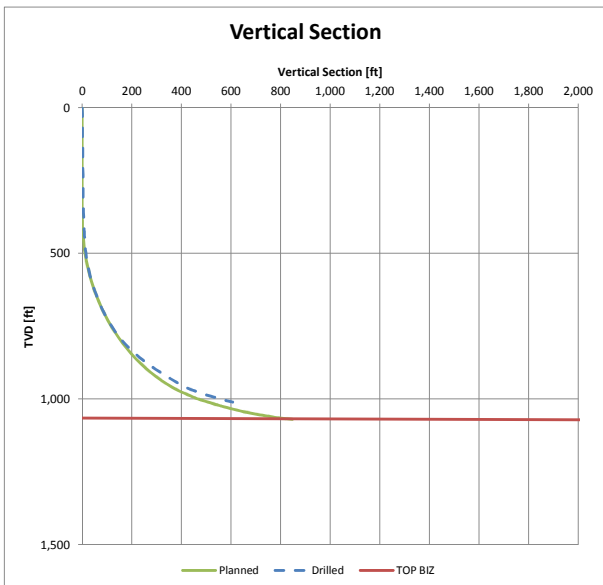
# Directional Drilling Morning Report

DATE: 23/01/2012  
TIME: 01:32

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32"), 6 x 4	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

## Event Log

Time	Date	Measured Depth [ft]	Description	Inclination	Azimuth	Pump Rate [GPM]	Mud Weight [PPG]
09:30	22/01/2012	0.00	RIH	0.00	0.00	137.00	
10:17		370.00	Out of casing survey	1.47	105.55	0.00	8.30
10:18		370.00	Continue to run in whilst circulating	N/A	N/A	274.00	8.30
10:42		470.00	Touch bottom, pull up 5 ft, survey to log hole and confirm azimuth rotate toolface and survey	3.81	102.09	0.00	8.30
10:49		470.00	Toolface at 347 deg, drill to 510, pull up 5ft and survey	3.50	88.56	0.00	8.30
11:19		505.00	Survey	7.31	299.48	0.00	8.30
11:20		505.00	Set toolface to around 45 deg, Drill on 50ft, twist CC @ KO, compensate to 30 deg.	N/A	N/A	311.00	8.30
12:08		555.00	Survey - Short on build and azimuth, next stage 25ft at 45 deg, 25ft at 10 deg max	11.87	298.32	0.00	8.30
12:56		605.00	Survey	16.88	313.82	0.00	8.30
13:00		605.00	Build at 30 deg, massive CC kick off to 270 deg tool face, took 2-3 min to correct	N/A	N/A	312.00	8.30
13:37		655.00	Pull up 5ft and survey	21.78	312.70	0.00	8.60
13:38		655.00	Build at around 5-10 deg. Massive CC kick off again	N/A	N/A	312.00	8.60
14:44		755.00	Survey	30.73	311.59		
14:45		755.00	Build at 55 deg for 50ft, then build at 30 deg max for 50ft				
15:59		860.00	Survey	44.07	308.17	314.00	8.60
16:05		860.00	Build at 55 deg for 75ft, then build at 30 deg for 65ft				
17:09		978.00	Drilling stopped. No diff. Pull up to survey and try to clean bit				
17:15		978.00	Survey	58.07	323.60	317.00	8.80
17:27		978.00	Correct for azimuth at around 75 deg toolface while maintaining build as per plan to 1150ft				
18:45		1101.00	Wiper trip to 900ft. Stop 5ft off bottom for survey			318.00	8.80
20:47		1150.00	Touch bottom and pull up post wiper trip. Survey	65.86	342.38		
22:14		1245.00	Survey	75.96	348.29		8.70
22:16		1245.00	Correct for azimuth, build to aim for 80 deg at 1450ft			314.00	8.70
23:30		1345.00	Survey	78.42	1.21	314.00	8.80
23:40		1345.00	Build to 80 deg and rotate to intermediate TD			296.00	8.80
00:58	23/01/2012	1444.00	Survey	82.80	1.16		
01:03		1444.00	Intermediate TD. POOH. Change Bit to 6.25". Change Motor Bend to 1.15. Case +Cement				





**Drilling Log**

Measured Depth ft	Bit Depth ft (MD +30 ft)	Inclination Angle degrees	Azimuth degrees	True Vertical Depth ft	North/South ft	East/West ft	Vertical Section ft	Dogleg Severity %/100ft	Reference	Description	Time	Date
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		KB	09:30	22/01/2012
340.00	370.00	1.47	0.00	339.96	4.36	0.00	4.36	0.43	Out of Casing	vertical	10:17	
440.00	470.00	3.81	347.52	439.85	8.89	-0.72	8.92	2.40	Hole Bottom	vertical	10:49	
475.00	505.00	7.31	299.48	474.70	11.12	-2.91	11.50	15.82		build	11:19	
525.00	555.00	11.87	298.32	523.98	15.13	-10.21	18.25	9.13		build	12:08	
575.00	605.00	16.88	313.82	572.42	22.60	-19.98	30.17	12.55		build	12:56	
625.00	655.00	21.78	312.70	619.59	33.93	-32.05	46.67	9.83		build	13:25	
725.00	755.00	30.73	311.59	709.18	63.53	-64.86	90.79	8.96		build	14:44	
830.00	860.00	44.07	308.17	792.42	104.09	-113.85	154.26	12.85		build	15:59	
948.00	978.00	58.07	323.60	866.65	170.32	-176.37	245.18	15.57		build	17:15	
1115.00	1145.00	65.85	342.38	945.64	301.09	-242.04	386.31	10.94		build	20:46	
1215.00	1245.00	75.96	348.29	978.34	392.38	-265.78	473.92	11.55		build	22:14	
1315.00	1345.00	78.42	1.21	1000.60	489.25	-274.63	561.06	12.83		build	23:30	
1371.00	1401.00	81.34	10.94	1010.46	543.99	-268.78	606.77	17.88	Through Plug - Air switch	build	16:00	24/01/2012



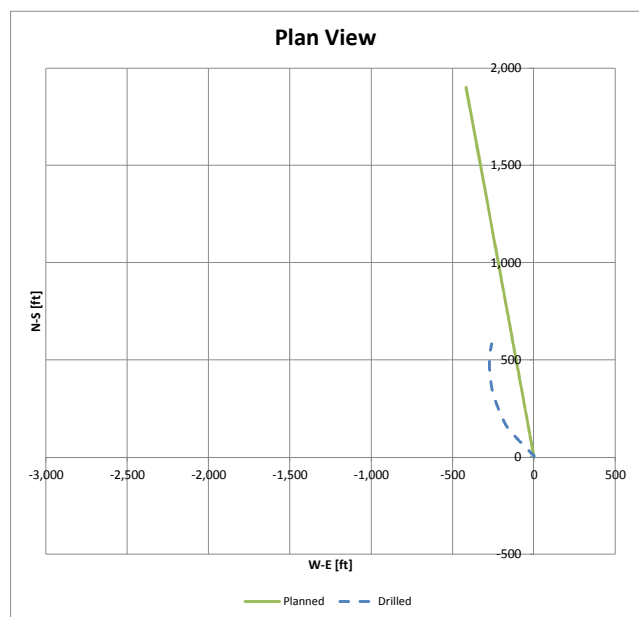
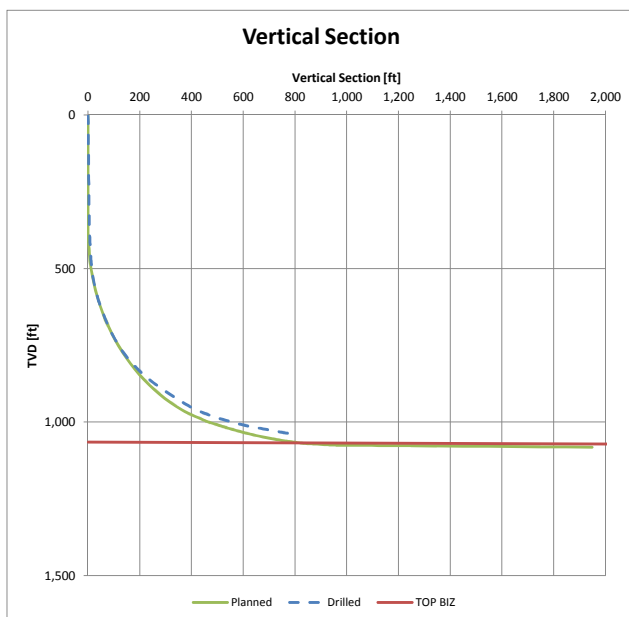
# Directional Drilling Morning Report

DATE: 25/01/2012  
TIME: 07:44

<b>Customer:</b>	Advanced Drilling Technologies	<b>Motor Bend Angle:</b>	2.77 & 1.15
<b>Project:</b>	Polaris Operational Trials	<b>Local Co-ordinate Reference:</b>	GPS
<b>Site:</b>	Davis	<b>TVD Reference:</b>	Minimum Curvature Calculation
<b>Well:</b>	Davis 32-07H	<b>MD Reference:</b>	Pason Bit Depth
<b>Bit &amp; Nozzle Size:</b>	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32"), 6 x 5"	<b>North Reference:</b>	Gyro True North
<b>Drill Motor:</b>	Hunting 5", 7/8, 4.5, 0.46RPG	<b>Survey Calculation Method:</b>	Minimum Curvature

## Event Log

Time	Date	Measured Depth [ft]	Description	Inclination	Azimuth	Pump Rate [GPM]	Mud Weight [PPG]
12:45	24/01/2012	51.00	RIH	N/A	N/A		
15:30		1351.00	Clear casing, build to pull azimuth towards 347			228.00	
16:04		1401.00	Survey	81.34	10.94	N/A	N/A
16:09		1401.00	Unable to unload fluid, trip back to 800 before switching to mist	N/A	N/A		
17:30		800.00	Blow out fluid column using mist mix - 1 compressor used (900 cfm) equivalent mud weight 0.01 - 0	N/A	N/A	N/A	N/A
18:00		800.00	RIH Using air (1 compressor) to blow out remaining fluid column	N/A	N/A	N/A	N/A
18:20		960.00	Rotate orienter whilst RIH to prevent mud motor stall				
19:00		1400.00	Continue to rotate orienter to go straight 50 ft				
19:37		1441.00	Clear hole and survey	83.45	13.55		
20:17		1450.00	Rotate orienter to drill straight 150 ft	N/A	N/A		
21:53		1500.00	Trip back to 1500 to release pressure and clean hole, back on bottom @ 22:11				
22:41		1600.00	Survey	82.00	11.20		
22:50		1600.00	Drop to get closer to zone and turn into planned lateral				
23:10		1642.00	Loss of power and comms to tool. POOH				
07:30	25/01/2012	0.00	Second Tool rigged up ready to RIH				





**Drilling Log**

Measured Depth ft	Bit Depth ft (MD +30 ft)	Inclination Angle degrees	Azimuth degrees	True Vertical Depth ft	North/South ft	East/West ft	Vertical Section ft	Dogleg Severity °/100ft	Reference	Description	Time	Date
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		KB		
340.00	370.00	1.47	0.00	339.96	4.36	0.00	4.36	0.43	Out of Casing	vertical		
440.00	470.00	3.81	347.52	439.85	8.89	-0.72	8.92	2.40	Hole Bottom	vertical		
475.00	505.00	7.31	299.48	474.70	11.12	-2.91	11.50	15.82		build	11:19	
525.00	555.00	11.87	298.32	523.98	15.13	-10.21	18.25	9.13		build	12:08	
575.00	605.00	16.88	313.82	572.42	22.60	-19.98	30.17	12.55		build	12:56	
625.00	655.00	21.78	312.70	619.59	33.93	-32.05	46.67	9.83		build	13:25	
725.00	755.00	30.73	311.59	709.18	63.53	-64.86	90.79	8.96		build	14:44	
830.00	860.00	44.07	308.17	792.42	104.09	-113.85	154.26	12.85		build	15:59	
948.00	978.00	58.07	323.60	866.65	170.32	-176.37	245.18	15.57		build	17:15	
1115.00	1145.00	65.85	342.38	945.64	301.09	-242.04	386.31	10.94		build	20:46	
1215.00	1245.00	75.96	348.29	978.34	392.38	-265.78	473.92	11.55		build	22:14	
1315.00	1345.00	78.42	1.21	1000.60	489.25	-274.63	561.06	12.83		build	23:30	
1371.00	1401.00	81.34	10.94	1010.46	543.99	-268.78	606.77	17.88	Through Plug Air switch	build	16:00	
1411.00	1441.00	83.45	13.55	1015.76	582.73	-260.37	638.25	8.35	First survey with air	Straight	19:37	
1570.00	1600.00	82.00	11.20	1035.89	736.77	-226.57	770.82	1.73		Straight	22:41	



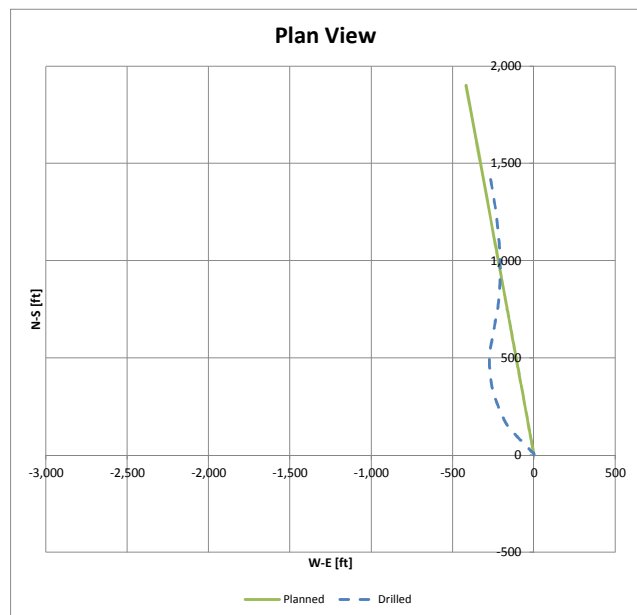
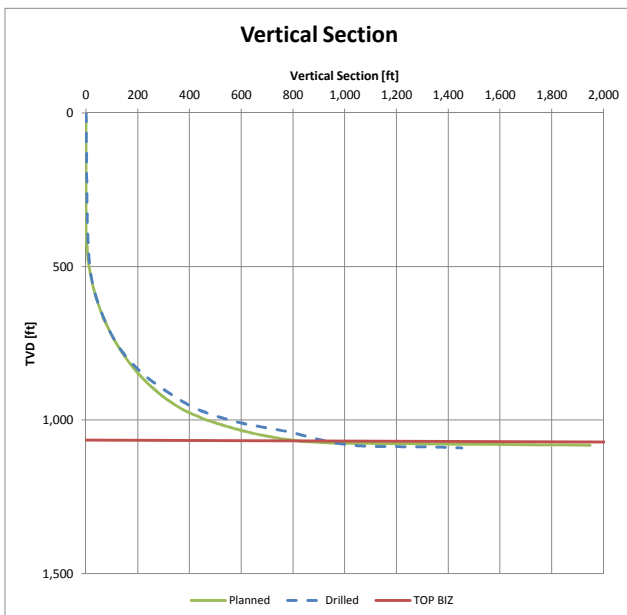
# Directional Drilling Morning Report

DATE: 26/01/2012  
TIME: 04:48

Customer:	Advanced Drilling Technologies	Motor Bend Angle:	2.77 & 1.15
Project:	Polaris Operational Trials	Local Co-ordinate Reference:	GPS
Site:	Davis	TVD Reference:	Minimum Curvature Calculation
Well:	Davis 32-07H	MD Reference:	Pason Bit Depth
Bit & Nozzle Size:	8.5" PDC (6 x 10/32"), 6.25" PDC (3 x 12/32", 6 x 5/16")	North Reference:	Gyro True North
Drill Motor:	Hunting 5", 7/8, 4.5, 0.46RPG	Survey Calculation Method:	Minimum Curvature

## Event Log

Time	Date	Measured Depth [ft]	Description	Inclination	Azimuth	Pump Rate [GPM]	Mud Weight [PPG]
07:50	25/01/2012		RIH				
11:23		1636.00	Back on bottom. Survey	79.51	9.57		
11:45		1636.00	Drill to 1750ft. Aim to be in zone at end of leg				
13:00		1748.00	Survey	77.87	1.90		
13:09		1748.00	Build to 89.6 degrees to enter straight lateral				
14:14		1851.00	Survey	84.70	359.25		
14:35		1851.00	Continue build to 89.6 degrees and hold while correcting azimuth				
15:30		1955.00	Wiper trip to 1760ft				
17:07		1955.00	Survey	88.83	354.62		
17:17		1955.00	Walk 50ft west @ 270 deg then rotate straight for 100 ft				
19:31		2104.00	Survey	90.40	351.82		
19:46		2104.00	Walk 50 ft West @ 220 deg then rotate straight for 50 ft				
20:17		2130.00	Wiper trip to 1351ft				
02:51	26/01/2012	2199.00	Survey	88.28	348.02		
02:55		2199.00	Build for 50ft then rototate 50ft				
04:43		2300.00	Survey at TD	88.32	348.94		
04:45			POOH, Rig Down				







Drilling Log

Measured Depth ft	Bit Depth ft (MD +30 ft)	Inclination Angle degrees	Azimuth degrees	True Vertical Depth ft	North/South ft	East/West ft	Vertical Section ft	Dogleg Severity °/100ft	Reference	Description	Time	Date
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIH	KB	09:30	22/01/2012
340.00	370.00	1.47	0.00	339.96	4.36	0.00	4.36	0.43	Out of Casing	vertical	10:17	
440.00	470.00	3.81	347.52	439.85	8.89	-0.72	8.92	2.40	Hole Bottom	vertical	10:49	
475.00	505.00	7.31	299.48	474.70	11.12	-2.91	11.50	15.82		build	11:19	
525.00	555.00	11.87	298.32	523.98	15.13	-10.21	18.25	9.13		build	12:08	
575.00	605.00	16.88	313.82	572.42	22.60	-19.98	30.17	12.55		build	12:56	
625.00	655.00	21.78	312.70	619.59	33.93	-32.05	46.67	9.83		build	13:25	
725.00	755.00	30.73	311.59	709.18	63.53	-64.86	90.79	8.96		build	14:44	
830.00	860.00	44.07	308.17	792.42	104.09	-113.85	154.26	12.85		build	15:59	
948.00	978.00	58.07	323.60	866.65	170.32	-176.37	245.18	15.57		build	17:15	
1115.00	1145.00	65.85	342.38	945.64	301.09	-242.04	386.31	10.94		build	20:46	
1215.00	1245.00	75.96	348.29	978.34	392.38	-265.78	473.92	11.55		build	22:14	
1315.00	1345.00	78.42	1.21	1000.60	489.25	-274.63	561.06	12.83		build	23:30	
1371.00	1401.00	81.34	10.94	1010.46	543.99	-268.78	606.77	17.88	Through Plug Air switch	build	16:00	24/01/2012
1411.00	1441.00	83.45	13.55	1015.76	582.73	-260.37	638.25	8.35	First survey with air	Straight	19:37	
1570.00	1600.00	82.00	11.20	1035.89	736.77	-226.57	770.82	1.73		Straight	22:41	
1606.00	1636.00	79.51	9.57	1041.68	771.72	-220.16	802.51	8.23		walk	11:23	25/01/2012
1718.00	1748.00	77.87	1.90	1063.67	880.90	-209.17	905.39	6.87	In Zone	walk	13:00	
1821.00	1851.00	84.70	359.25	1079.27	982.64	-208.17	1004.44	7.10		build	14:15	
1925.00	1955.00	88.83	354.62	1085.14	1086.27	-213.73	1107.10	5.96		Straight	17:09	
2074.00	2104.00	90.40	351.82	1086.14	1234.21	-231.32	1255.70	2.15		Straight	19:31	
2169.00	2199.00	88.28	348.02	1087.24	1327.71	-247.94	1350.66	4.58		Straight	02:54	26/01/2012
2270.00	2300.00	88.32	348.94	1090.23	1426.63	-268.10	1451.60	0.91	TD	TD	04:43	