

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_RIVERBEND 4-13 PAD

Riverbend 7-14

Riverbend 7-14

Plan: Riverbend 7-14 (wp01)

Standard Planning Report

11 July, 2011



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_RIVERBEND 4-13 PAD
 Well: Riverbend 7-14
 Wellbore: Riverbend 7-14
 Section:
 SHL:
 Design: Riverbend 7-14 (wp01)
 Latitude: 40.055907
 Longitude: -104.847381
 GL: 4952.00
 KB: 15' RKB + 4952' GL @ 4967.00ft

TVDPPath	MDPath	Formation
4052.00	4354.29	PK Depth
4643.00	5006.46	SX Depth
7175.00	7744.69	NIO Depth
7522.00	8092.22	CD Depth
7607.00	8177.22	GH Depth



Azimuths to True North
 Magnetic North: 8.87°

Magnetic Field
 Strength: 52932.6snT
 Dip Angle: 66.76°
 Date: 7/11/2011
 Model: IGRF2010

WELL DETAILS: Riverbend 7-14

+N/-S	+E/-W	Northing	Ground Level: Easting	4952.00 Latitude	Longitude	Slot
0.00	0.00	1263884.58	3182682.02	40.055907	-104.847381	

CASING DETAILS

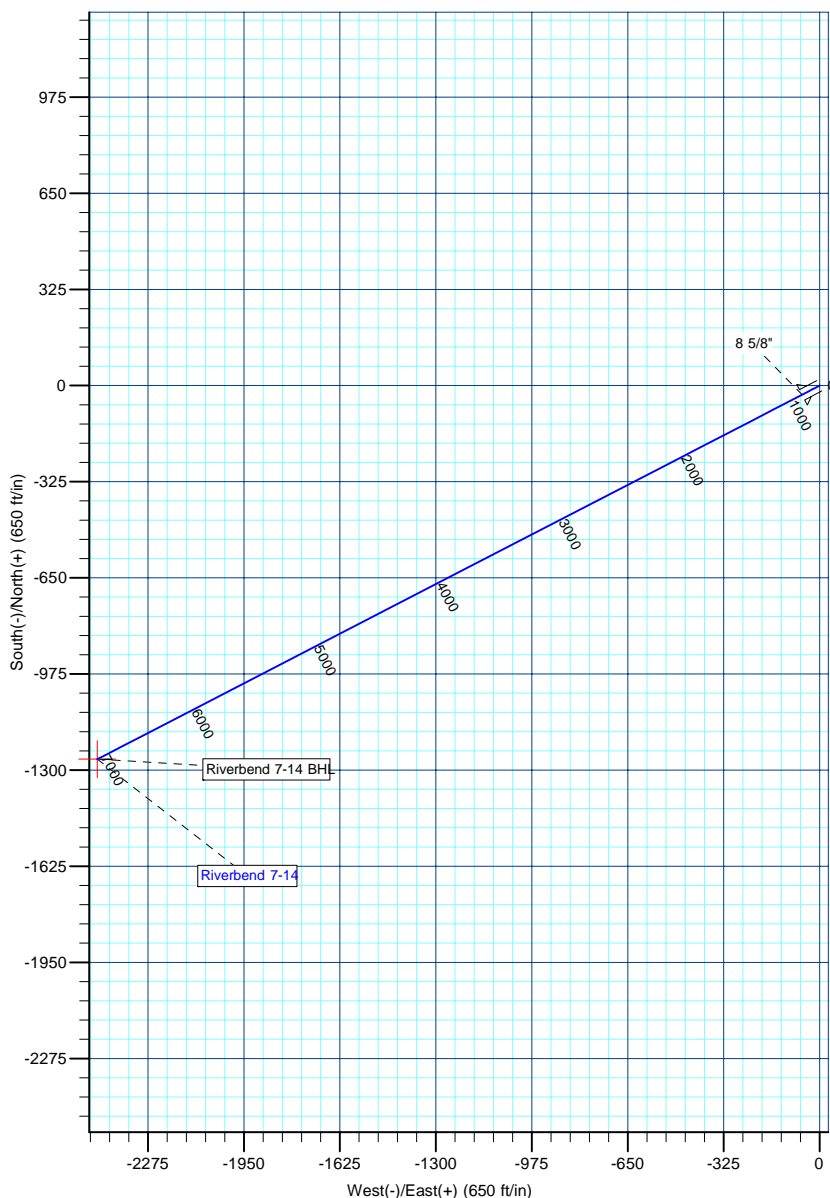
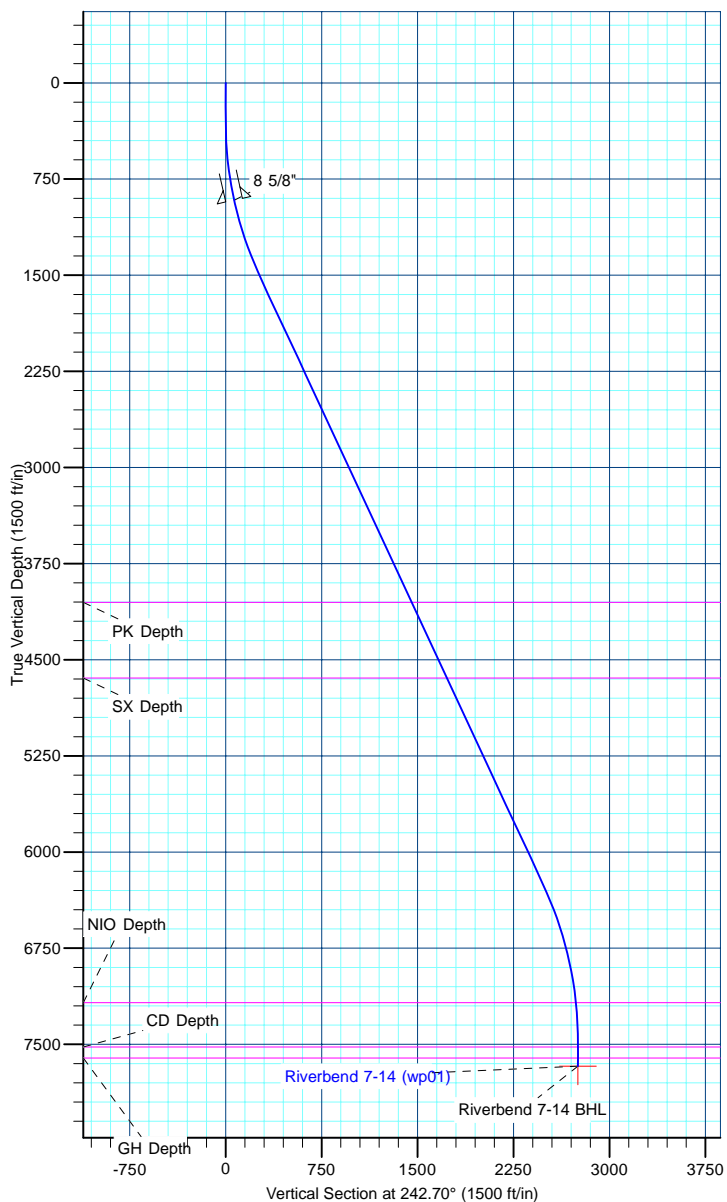
TVD	MD	Name	Size
915.00	919.82	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Riverbend 7-14 BHL	7672.00	-1262.81	-2446.66	1262603.80	3180244.72	40.052440	-104.856121	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1550.64	25.01	242.70	1511.29	-123.23	-238.75	2.00	242.70	268.68
6791.59	25.01	242.70	6260.71	-1139.58	-2207.91	0.00	0.00	2484.65
8042.22	0.00	0.00	7472.00	-1262.81	-2446.66	2.00	180.00	2753.33
8242.22	0.00	0.00	7672.00	-1262.81	-2446.66	0.00	0.00	2753.33



Database:	edm5000p	Local Co-ordinate Reference:	Well Riverbend 7-14
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 4952' GL @ 4967.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 4952' GL @ 4967.00ft
Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 7-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 7-14		
Design:	Riverbend 7-14 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_RIVERBEND 4-13 PAD											
Site Position:			Northing:			1,263,964.36 ft			Latitude:			40.056126					
From:			Lat/Long			Easting:			3,182,681.16 ft			Longitude:			-104.847382		
Position Uncertainty:			0.00 ft			Slot Radius:			0 "			Grid Convergence:			0.42		

Well	Riverbend 7-14					
Well Position	+N-S	-79.79 ft	Northing:	1,263,884.58 ft	Latitude:	40.055907
	+E-W	0.28 ft	Easting:	3,182,682.02 ft	Longitude:	-104.847381
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,952.00 ft

Wellbore	Riverbend 7-14				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/11/2011	8.87	66.76	52,933

Design	Riverbend 7-14 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	242.70

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.64	25.01	242.70	1,511.29	-123.23	-238.75	2.00	2.00	0.00	242.70	
6,791.59	25.01	242.70	6,260.71	-1,139.58	-2,207.91	0.00	0.00	0.00	0.00	
8,042.22	0.00	0.00	7,472.00	-1,262.81	-2,446.66	2.00	-2.00	0.00	180.00	
8,242.22	0.00	0.00	7,672.00	-1,262.81	-2,446.66	0.00	0.00	0.00	0.00	Riverbend 7-14 BHI

Database:	edm5000p	Local Co-ordinate Reference:	Well Riverbend 7-14
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 4952' GL @ 4967.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 4952' GL @ 4967.00ft
Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 7-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 7-14		
Design:	Riverbend 7-14 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
400.00	2.00	242.70	399.98	-0.80	-1.55	1.75	2.00	2.00	0.00
500.00	4.00	242.70	499.84	-3.20	-6.20	6.98	2.00	2.00	0.00
600.00	6.00	242.70	599.45	-7.20	-13.95	15.69	2.00	2.00	0.00
700.00	8.00	242.70	698.70	-12.79	-24.77	27.88	2.00	2.00	0.00
800.00	10.00	242.70	797.47	-19.96	-38.67	43.52	2.00	2.00	0.00
900.00	12.00	242.70	895.62	-28.71	-55.63	62.60	2.00	2.00	0.00
919.82	12.40	242.70	915.00	-30.63	-59.35	66.79	2.00	2.00	0.00
8 5/8"									
1,000.00	14.00	242.70	993.06	-39.03	-75.62	85.10	2.00	2.00	0.00
1,100.00	16.00	242.70	1,089.64	-50.90	-98.62	110.98	2.00	2.00	0.00
1,200.00	18.00	242.70	1,185.27	-64.31	-124.60	140.21	2.00	2.00	0.00
1,300.00	20.00	242.70	1,279.82	-79.24	-153.52	172.77	2.00	2.00	0.00
1,400.00	22.00	242.70	1,373.17	-95.68	-185.37	208.60	2.00	2.00	0.00
1,500.00	24.00	242.70	1,465.21	-113.60	-220.09	247.67	2.00	2.00	0.00
1,550.64	25.01	242.70	1,511.29	-123.23	-238.75	268.68	2.00	2.00	0.00
Start 5240.95 hold at 1550.64 MD									
1,600.00	25.01	242.70	1,556.02	-132.80	-257.30	289.55	0.00	0.00	0.00
1,700.00	25.01	242.70	1,646.64	-152.19	-294.87	331.83	0.00	0.00	0.00
1,800.00	25.01	242.70	1,737.27	-171.59	-332.44	374.11	0.00	0.00	0.00
1,900.00	25.01	242.70	1,827.89	-190.98	-370.02	416.40	0.00	0.00	0.00
2,000.00	25.01	242.70	1,918.51	-210.37	-407.59	458.68	0.00	0.00	0.00
2,100.00	25.01	242.70	2,009.13	-229.76	-445.16	500.96	0.00	0.00	0.00
2,200.00	25.01	242.70	2,099.75	-249.16	-482.73	543.24	0.00	0.00	0.00
2,300.00	25.01	242.70	2,190.37	-268.55	-520.31	585.52	0.00	0.00	0.00
2,400.00	25.01	242.70	2,280.99	-287.94	-557.88	627.81	0.00	0.00	0.00
2,500.00	25.01	242.70	2,371.62	-307.33	-595.45	670.09	0.00	0.00	0.00
2,600.00	25.01	242.70	2,462.24	-326.73	-633.02	712.37	0.00	0.00	0.00
2,700.00	25.01	242.70	2,552.86	-346.12	-670.60	754.65	0.00	0.00	0.00
2,800.00	25.01	242.70	2,643.48	-365.51	-708.17	796.93	0.00	0.00	0.00
2,900.00	25.01	242.70	2,734.10	-384.90	-745.74	839.21	0.00	0.00	0.00
3,000.00	25.01	242.70	2,824.72	-404.30	-783.31	881.50	0.00	0.00	0.00
3,100.00	25.01	242.70	2,915.34	-423.69	-820.89	923.78	0.00	0.00	0.00
3,200.00	25.01	242.70	3,005.97	-443.08	-858.46	966.06	0.00	0.00	0.00
3,300.00	25.01	242.70	3,096.59	-462.47	-896.03	1,008.34	0.00	0.00	0.00
3,400.00	25.01	242.70	3,187.21	-481.87	-933.60	1,050.62	0.00	0.00	0.00
3,500.00	25.01	242.70	3,277.83	-501.26	-971.18	1,092.91	0.00	0.00	0.00
3,600.00	25.01	242.70	3,368.45	-520.65	-1,008.75	1,135.19	0.00	0.00	0.00
3,700.00	25.01	242.70	3,459.07	-540.05	-1,046.32	1,177.47	0.00	0.00	0.00
3,800.00	25.01	242.70	3,549.69	-559.44	-1,083.89	1,219.75	0.00	0.00	0.00
3,900.00	25.01	242.70	3,640.31	-578.83	-1,121.47	1,262.03	0.00	0.00	0.00
4,000.00	25.01	242.70	3,730.94	-598.22	-1,159.04	1,304.32	0.00	0.00	0.00
4,100.00	25.01	242.70	3,821.56	-617.62	-1,196.61	1,346.60	0.00	0.00	0.00
4,200.00	25.01	242.70	3,912.18	-637.01	-1,234.18	1,388.88	0.00	0.00	0.00
4,300.00	25.01	242.70	4,002.80	-656.40	-1,271.76	1,431.16	0.00	0.00	0.00
4,354.29	25.01	242.70	4,052.00	-666.93	-1,292.16	1,454.12	0.00	0.00	0.00
PK Depth									
4,400.00	25.01	242.70	4,093.42	-675.79	-1,309.33	1,473.44	0.00	0.00	0.00
4,500.00	25.01	242.70	4,184.04	-695.19	-1,346.90	1,515.73	0.00	0.00	0.00
4,600.00	25.01	242.70	4,274.66	-714.58	-1,384.47	1,558.01	0.00	0.00	0.00

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Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 7-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 7-14		
Design:	Riverbend 7-14 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.00	25.01	242.70	4,365.29	-733.97	-1,422.05	1,600.29	0.00	0.00	0.00
4,800.00	25.01	242.70	4,455.91	-753.36	-1,459.62	1,642.57	0.00	0.00	0.00
4,900.00	25.01	242.70	4,546.53	-772.76	-1,497.19	1,684.85	0.00	0.00	0.00
5,000.00	25.01	242.70	4,637.15	-792.15	-1,534.76	1,727.14	0.00	0.00	0.00
5,006.46	25.01	242.70	4,643.00	-793.40	-1,537.19	1,729.87	0.00	0.00	0.00
SX Depth									
5,100.00	25.01	242.70	4,727.77	-811.54	-1,572.34	1,769.42	0.00	0.00	0.00
5,200.00	25.01	242.70	4,818.39	-830.93	-1,609.91	1,811.70	0.00	0.00	0.00
5,300.00	25.01	242.70	4,909.01	-850.33	-1,647.48	1,853.98	0.00	0.00	0.00
5,400.00	25.01	242.70	4,999.64	-869.72	-1,685.05	1,896.26	0.00	0.00	0.00
5,500.00	25.01	242.70	5,090.26	-889.11	-1,722.63	1,938.55	0.00	0.00	0.00
5,600.00	25.01	242.70	5,180.88	-908.50	-1,760.20	1,980.83	0.00	0.00	0.00
5,700.00	25.01	242.70	5,271.50	-927.90	-1,797.77	2,023.11	0.00	0.00	0.00
5,800.00	25.01	242.70	5,362.12	-947.29	-1,835.34	2,065.39	0.00	0.00	0.00
5,900.00	25.01	242.70	5,452.74	-966.68	-1,872.92	2,107.67	0.00	0.00	0.00
6,000.00	25.01	242.70	5,543.36	-986.07	-1,910.49	2,149.96	0.00	0.00	0.00
6,100.00	25.01	242.70	5,633.99	-1,005.47	-1,948.06	2,192.24	0.00	0.00	0.00
6,200.00	25.01	242.70	5,724.61	-1,024.86	-1,985.63	2,234.52	0.00	0.00	0.00
6,300.00	25.01	242.70	5,815.23	-1,044.25	-2,023.21	2,276.80	0.00	0.00	0.00
6,400.00	25.01	242.70	5,905.85	-1,063.64	-2,060.78	2,319.08	0.00	0.00	0.00
6,500.00	25.01	242.70	5,996.47	-1,083.04	-2,098.35	2,361.37	0.00	0.00	0.00
6,600.00	25.01	242.70	6,087.09	-1,102.43	-2,135.92	2,403.65	0.00	0.00	0.00
6,700.00	25.01	242.70	6,177.71	-1,121.82	-2,173.50	2,445.93	0.00	0.00	0.00
6,791.59	25.01	242.70	6,260.71	-1,139.58	-2,207.91	2,484.65	0.00	0.00	0.00
Start Drop -2.00									
6,800.00	24.84	242.70	6,268.34	-1,141.21	-2,211.06	2,488.20	2.00	-2.00	0.00
6,900.00	22.84	242.70	6,359.80	-1,159.75	-2,246.98	2,528.62	2.00	-2.00	0.00
7,000.00	20.84	242.70	6,452.62	-1,176.81	-2,280.04	2,565.83	2.00	-2.00	0.00
7,100.00	18.84	242.70	6,546.67	-1,192.38	-2,310.21	2,599.78	2.00	-2.00	0.00
7,200.00	16.84	242.70	6,641.86	-1,206.44	-2,337.44	2,630.42	2.00	-2.00	0.00
7,300.00	14.84	242.70	6,738.05	-1,218.96	-2,361.70	2,657.72	2.00	-2.00	0.00
7,400.00	12.84	242.70	6,835.14	-1,229.93	-2,382.96	2,681.65	2.00	-2.00	0.00
7,500.00	10.84	242.70	6,933.01	-1,239.35	-2,401.20	2,702.17	2.00	-2.00	0.00
7,600.00	8.84	242.70	7,031.53	-1,247.19	-2,416.39	2,719.27	2.00	-2.00	0.00
7,700.00	6.84	242.70	7,130.59	-1,253.45	-2,428.52	2,732.92	2.00	-2.00	0.00
7,744.69	5.95	242.70	7,175.00	-1,255.73	-2,432.94	2,737.89	2.00	-2.00	0.00
NIO Depth									
7,800.00	4.84	242.70	7,230.06	-1,258.12	-2,437.57	2,743.10	2.00	-2.00	0.00
7,900.00	2.84	242.70	7,329.83	-1,261.19	-2,443.52	2,749.80	2.00	-2.00	0.00
8,000.00	0.84	242.70	7,429.78	-1,262.67	-2,446.38	2,753.02	2.00	-2.00	0.00
8,042.22	0.00	0.00	7,472.00	-1,262.81	-2,446.66	2,753.33	2.00	-2.00	0.00
Start 200.00 hold at 8042.22 MD									
8,092.22	0.00	0.00	7,522.00	-1,262.81	-2,446.66	2,753.33	0.00	0.00	0.00
CD Depth									
8,100.00	0.00	0.00	7,529.78	-1,262.81	-2,446.66	2,753.33	0.00	0.00	0.00
8,177.22	0.00	0.00	7,607.00	-1,262.81	-2,446.66	2,753.33	0.00	0.00	0.00
GH Depth									
8,200.00	0.00	0.00	7,629.78	-1,262.81	-2,446.66	2,753.33	0.00	0.00	0.00
8,242.22	0.00	0.00	7,672.00	-1,262.81	-2,446.66	2,753.33	0.00	0.00	0.00
TD at 8242.22 - Riverbend 7-14 BHL									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 4952' GL @ 4967.00ft
Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 7-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 7-14		
Design:	Riverbend 7-14 (wp01)		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Riverbend 7-14 BHL	0.00	0.00	7,672.00	-1,262.81	-2,446.66	1,262,603.79	3,180,244.73	40.052440	-104.856121
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)		Name	(")	(")
919.82	915.00	8 5/8"		8-5/8	11

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
4,354.29	4,052.00	PK Depth				
5,006.46	4,643.00	SX Depth				
7,744.69	7,175.00	NIO Depth				
8,092.22	7,522.00	CD Depth				
8,177.22	7,607.00	GH Depth				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,550.64	1,511.29	-123.23	-238.75	Start 5240.95 hold at 1550.64 MD	
6,791.59	6,260.71	-1,139.58	-2,207.91	Start Drop -2.00	
8,042.22	7,472.00	-1,262.81	-2,446.66	Start 200.00 hold at 8042.22 MD	
8,242.22	7,672.00	-1,262.81	-2,446.66	TD at 8242.22	