

Well Name: Ehrlich 1A

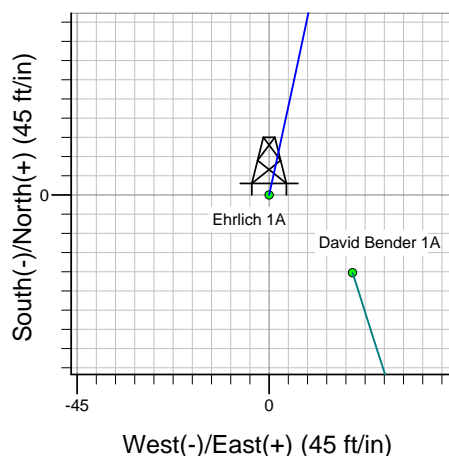
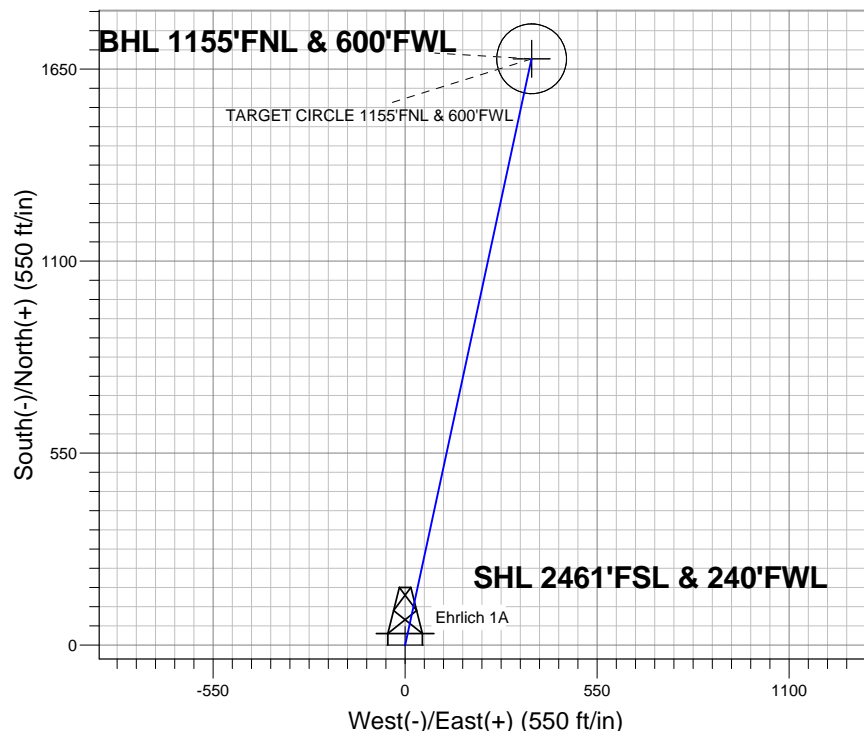
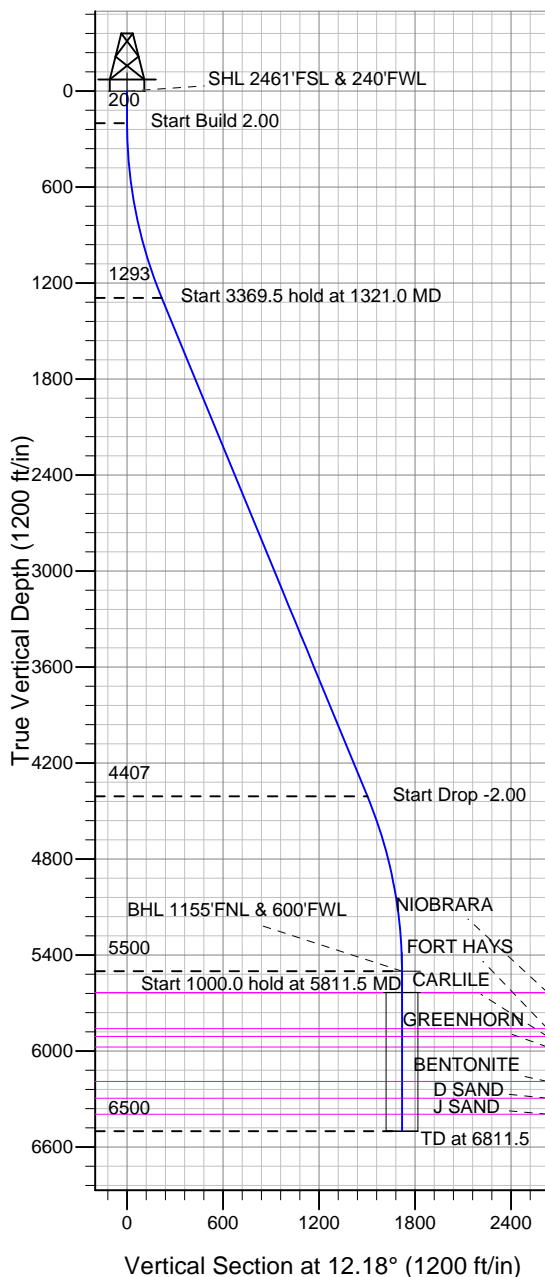
Surface Location: David Bender 1A Pad Sec.12-T4N-R60W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4462.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1365150.56	3403057.00	40.326720	-104.054310	

Est. RKB - 13' WELL @ 4475.0ft (Est. RKB - 13')

Aurora Power Resources, Inc.



Ehrlich 1A
Plan #1 (10-31-13)
9:14, November 01 2013



Azimuths to True North
Magnetic North: 8.15°

Magnetic Field
Strength: 52918.6snT
Dip Angle: 67.02°
Date: 10/31/2013
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SHL 2461'FSL & 240'FWL	1.0	0.0	0.0	40.326720	-104.054310	Point
BHL 1155'FNL & 600'FWL	5500.0	1679.5	362.4	40.331330	-104.053010	Point
TARGET CIRCLE 1155'FNL & 600'FWL	5634.0	1679.5	362.4	40.331330	-104.053010	Circle (Radius: 100.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1321.0	22.42	12.18	1292.6	211.7	45.7	2.00	12.18	216.5	
4	4690.5	22.42	12.18	4407.4	1467.8	316.8	0.00	0.00	1501.6	
5	5811.5	0.00	0.00	5500.0	1679.5	362.4	2.00	180.00	1718.1	BHL 1155'FNL & 600'FWL
6	6811.5	0.00	0.00	6500.0	1679.5	362.4	0.00	0.00	1718.1	



Aurora Power Resources, Inc.

Sec.12-T4N-R60W

David Bender 1A Pad Sec.12-T4N-R60W

Ehrlich 1A

Wellbore #1

Plan: Plan #1 (10-31-13)

Standard Planning Report

01 November, 2013

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,321.0	22.42	12.18	1,292.6	211.7	45.7	2.00	2.00	0.00	12.18	
4,690.5	22.42	12.18	4,407.4	1,467.8	316.8	0.00	0.00	0.00	0.00	
5,811.5	0.00	0.00	5,500.0	1,679.5	362.4	2.00	-2.00	0.00	180.00	BHL 1155'FNL & 60°
6,811.5	0.00	0.00	6,500.0	1,679.5	362.4	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich 1A
Company:	Aurora Power Resources, Inc.	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Project:	Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site:	David Bender 1A Pad Sec.12-T4N-R60W	North Reference:	True
Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-31-13)		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 2461'FSL & 240'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	2.00	12.18	300.0	1.7	0.4	1.7	2.00	2.00	0.00
400.0	4.00	12.18	399.8	6.8	1.5	7.0	2.00	2.00	0.00
500.0	6.00	12.18	499.5	15.3	3.3	15.7	2.00	2.00	0.00
500.6	6.01	12.18	500.0	15.4	3.3	15.8	2.00	2.00	0.00
8 5/8"									
600.0	8.00	12.18	598.7	27.3	5.9	27.9	2.00	2.00	0.00
700.0	10.00	12.18	697.5	42.5	9.2	43.5	2.00	2.00	0.00
800.0	12.00	12.18	795.6	61.2	13.2	62.6	2.00	2.00	0.00
900.0	14.00	12.18	893.1	83.2	18.0	85.1	2.00	2.00	0.00
1,000.0	16.00	12.18	989.6	108.5	23.4	111.0	2.00	2.00	0.00
1,100.0	18.00	12.18	1,085.3	137.1	29.6	140.2	2.00	2.00	0.00
1,200.0	20.00	12.18	1,179.8	168.9	36.4	172.8	2.00	2.00	0.00
1,300.0	22.00	12.18	1,273.2	203.9	44.0	208.6	2.00	2.00	0.00
1,321.0	22.42	12.18	1,292.6	211.7	45.7	216.5	2.00	2.00	0.00
1,400.0	22.42	12.18	1,365.6	241.1	52.0	246.7	0.00	0.00	0.00
1,500.0	22.42	12.18	1,458.1	278.4	60.1	284.8	0.00	0.00	0.00
1,600.0	22.42	12.18	1,550.5	315.7	68.1	322.9	0.00	0.00	0.00
1,700.0	22.42	12.18	1,643.0	353.0	76.2	361.1	0.00	0.00	0.00
1,800.0	22.42	12.18	1,735.4	390.2	84.2	399.2	0.00	0.00	0.00
1,900.0	22.42	12.18	1,827.8	427.5	92.3	437.4	0.00	0.00	0.00
2,000.0	22.42	12.18	1,920.3	464.8	100.3	475.5	0.00	0.00	0.00
2,100.0	22.42	12.18	2,012.7	502.1	108.4	513.6	0.00	0.00	0.00
2,200.0	22.42	12.18	2,105.2	539.4	116.4	551.8	0.00	0.00	0.00
2,300.0	22.42	12.18	2,197.6	576.6	124.4	589.9	0.00	0.00	0.00
2,400.0	22.42	12.18	2,290.1	613.9	132.5	628.1	0.00	0.00	0.00
2,500.0	22.42	12.18	2,382.5	651.2	140.5	666.2	0.00	0.00	0.00
2,600.0	22.42	12.18	2,474.9	688.5	148.6	704.3	0.00	0.00	0.00
2,700.0	22.42	12.18	2,567.4	725.8	156.6	742.5	0.00	0.00	0.00
2,800.0	22.42	12.18	2,659.8	763.0	164.7	780.6	0.00	0.00	0.00
2,900.0	22.42	12.18	2,752.3	800.3	172.7	818.7	0.00	0.00	0.00
3,000.0	22.42	12.18	2,844.7	837.6	180.8	856.9	0.00	0.00	0.00
3,100.0	22.42	12.18	2,937.1	874.9	188.8	895.0	0.00	0.00	0.00
3,200.0	22.42	12.18	3,029.6	912.2	196.9	933.2	0.00	0.00	0.00
3,300.0	22.42	12.18	3,122.0	949.4	204.9	971.3	0.00	0.00	0.00
3,400.0	22.42	12.18	3,214.5	986.7	212.9	1,009.4	0.00	0.00	0.00
3,500.0	22.42	12.18	3,306.9	1,024.0	221.0	1,047.6	0.00	0.00	0.00
3,600.0	22.42	12.18	3,399.4	1,061.3	229.0	1,085.7	0.00	0.00	0.00
3,700.0	22.42	12.18	3,491.8	1,098.6	237.1	1,123.9	0.00	0.00	0.00
3,800.0	22.42	12.18	3,584.2	1,135.8	245.1	1,162.0	0.00	0.00	0.00
3,900.0	22.42	12.18	3,676.7	1,173.1	253.2	1,200.1	0.00	0.00	0.00
4,000.0	22.42	12.18	3,769.1	1,210.4	261.2	1,238.3	0.00	0.00	0.00
4,100.0	22.42	12.18	3,861.6	1,247.7	269.3	1,276.4	0.00	0.00	0.00
4,200.0	22.42	12.18	3,954.0	1,285.0	277.3	1,314.5	0.00	0.00	0.00
4,300.0	22.42	12.18	4,046.4	1,322.2	285.4	1,352.7	0.00	0.00	0.00
4,400.0	22.42	12.18	4,138.9	1,359.5	293.4	1,390.8	0.00	0.00	0.00
4,500.0	22.42	12.18	4,231.3	1,396.8	301.4	1,429.0	0.00	0.00	0.00
4,600.0	22.42	12.18	4,323.8	1,434.1	309.5	1,467.1	0.00	0.00	0.00
4,690.5	22.42	12.18	4,407.4	1,467.8	316.8	1,501.6	0.00	0.00	0.00
4,700.0	22.23	12.18	4,416.2	1,471.3	317.5	1,505.2	2.00	-2.00	0.00

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
500.6	500.0	8 5/8"		8-5/8	12-1/4

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich 1A
Company:	Aurora Power Resources, Inc.	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Project:	Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site:	David Bender 1A Pad Sec.12-T4N-R60W	North Reference:	True
Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-31-13)		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	5,945.5	5,634.0	NIOBRARA		0.00	
	6,170.5	5,859.0	FORT HAYS		0.00	
	6,219.5	5,908.0	CARLILE		0.00	
	6,286.5	5,975.0	GREENHORN		0.00	
	6,500.5	6,189.0	BENTONITE		0.00	
	6,606.5	6,295.0	D SAND		0.00	
	6,706.5	6,395.0	J SAND		0.00	



Aurora Power Resources, Inc.

Sec.12-T4N-R60W

David Bender 1A Pad Sec.12-T4N-R60W

Ehrlich 1A

Wellbore #1

Plan #1 (10-31-13)

Anticollision Report

01 November, 2013

Company:	Aurora Power Resources, Inc.	Local Co-ordinate Reference:	Well Ehrlich 1A
Project:	Sec.12-T4N-R60W	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Reference Site:	David Bender 1A Pad Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (10-31-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (10-31-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 10/31/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	6,811.5	Plan #1 (10-31-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
David Bender 1A Pad Sec.12-T4N-R60W						
David Bender 1A - Wellbore #1 - Plan #1 (10-31-13)	200.0	200.0	26.7	26.0	39.593	CC, ES
David Bender 1A - Wellbore #1 - Plan #1 (10-31-13)	500.0	499.5	37.3	35.2	18.138	SF

Offset Design David Bender 1A Pad Sec.12-T4N-R60W - David Bender 1A - Wellbore #1 - Plan #1 (10-31-13)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	133.02	-18.2	19.5	26.7				
100.0	100.0	100.0	100.0	0.1	0.1	133.02	-18.2	19.5	26.7	26.5	0.22	118.778	
200.0	200.0	200.0	200.0	0.3	0.3	133.02	-18.2	19.5	26.7	26.0	0.67	39.593	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	123.94	-18.2	19.5	27.6	26.5	1.13	24.541	
400.0	399.8	399.8	399.8	0.8	0.8	131.97	-18.2	19.5	30.9	29.3	1.59	19.466	
500.0	499.5	499.5	499.5	1.0	1.0	141.89	-18.2	19.5	37.3	35.2	2.05	18.138	SF
600.0	598.7	598.7	598.7	1.3	1.2	150.89	-18.2	19.5	47.5	44.9	2.53	18.784	
700.0	697.5	697.5	697.5	1.6	1.5	157.86	-18.2	19.5	61.6	58.6	3.00	20.557	
800.0	795.6	795.6	795.6	2.0	1.7	162.93	-18.2	19.5	79.7	76.2	3.47	22.977	
900.0	893.1	893.1	893.1	2.4	1.9	166.55	-18.2	19.5	101.4	97.5	3.93	25.773	
1,000.0	989.6	989.6	989.6	2.9	2.1	169.17	-18.2	19.5	126.8	122.4	4.40	28.788	
1,100.0	1,085.3	1,081.1	1,081.1	3.5	2.3	170.86	-19.3	19.9	156.7	151.9	4.85	32.297	
1,200.0	1,179.8	1,169.4	1,169.3	4.1	2.5	171.77	-23.0	21.0	192.8	187.5	5.30	36.374	
1,300.0	1,273.2	1,254.3	1,254.0	4.7	2.6	172.19	-29.0	22.9	234.6	228.9	5.75	40.781	
1,400.0	1,365.6	1,336.1	1,335.4	5.4	2.8	172.39	-37.0	25.5	281.0	274.8	6.23	45.104	
1,500.0	1,458.1	1,415.6	1,414.2	6.2	3.0	172.38	-46.9	28.6	329.7	323.0	6.72	49.077	
1,600.0	1,550.5	1,492.9	1,490.4	6.9	3.2	172.23	-58.5	32.3	380.7	373.5	7.21	52.770	
1,700.0	1,643.0	1,567.8	1,564.1	7.6	3.4	171.99	-71.7	36.5	433.7	426.0	7.71	56.215	
1,800.0	1,735.4	1,640.5	1,635.2	8.3	3.6	171.71	-86.2	41.1	488.7	480.5	8.22	59.454	
1,900.0	1,827.8	1,710.9	1,703.6	9.1	3.9	171.40	-101.8	46.1	545.7	537.0	8.73	62.514	
2,000.0	1,920.3	1,779.0	1,769.4	9.8	4.1	171.07	-118.5	51.4	604.5	595.2	9.24	65.406	
2,100.0	2,012.7	1,844.9	1,832.7	10.5	4.4	170.74	-136.1	57.0	665.1	655.3	9.76	68.158	
2,200.0	2,105.2	1,900.0	1,885.3	11.3	4.7	170.46	-151.8	62.0	727.4	717.1	10.25	70.940	
2,300.0	2,197.6	1,970.3	1,951.8	12.0	5.1	170.09	-173.3	68.9	791.1	780.4	10.79	73.322	
2,400.0	2,290.1	2,030.5	2,008.4	12.8	5.4	169.78	-192.9	75.1	856.5	845.2	11.32	75.640	

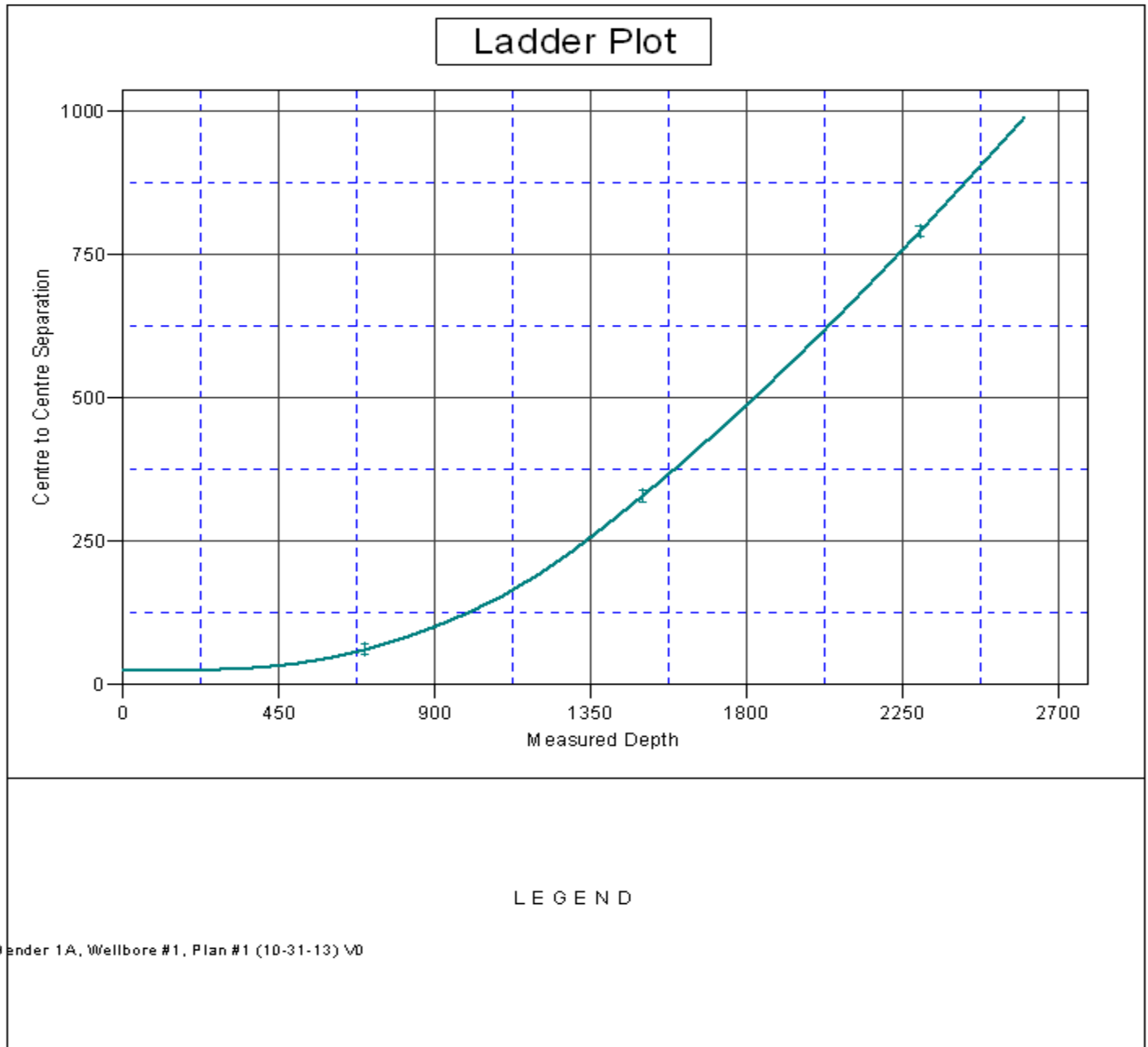
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Aurora Power Resources, Inc.	Local Co-ordinate Reference:	Well Ehrlich 1A
Project:	Sec.12-T4N-R60W	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Reference Site:	David Bender 1A Pad Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (10-31-13)	Offset TVD Reference:	Offset Datum

Offset Design David Bender 1A Pad Sec.12-T4N-R60W - David Bender 1A - Wellbore #1 - Plan #1 (10-31-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,500.0	2,382.5	2,104.5	2,077.7	13.5	5.9	169.42	-217.7	83.0	922.7	910.8	11.88	77.684	
2,600.0	2,474.9	2,179.4	2,147.7	14.2	6.3	169.10	-242.9	91.0	988.8	976.4	12.44	79.515	

Company:	Aurora Power Resources, Inc.	Local Co-ordinate Reference:	Well Ehrlich 1A
Project:	Sec.12-T4N-R60W	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Reference Site:	David Bender 1A Pad Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (10-31-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4475.0ft (Est. RKB - 13') Coordinates are relative to: Ehrlich 1A
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.93°



Company:	Aurora Power Resources, Inc.	Local Co-ordinate Reference:	Well Ehrlich 1A
Project:	Sec.12-T4N-R60W	TVD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Reference Site:	David Bender 1A Pad Sec.12-T4N-R60W	MD Reference:	WELL @ 4475.0ft (Est. RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ehrlich 1A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (10-31-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4475.0ft (Est. RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Ehrlich 1A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.93°

