



Edge Energy, LLC

Well Name:

SLB 16-9-8H

Project Name:

Sec. 16-T8N-R67W, Weld County CO

Pad Name:

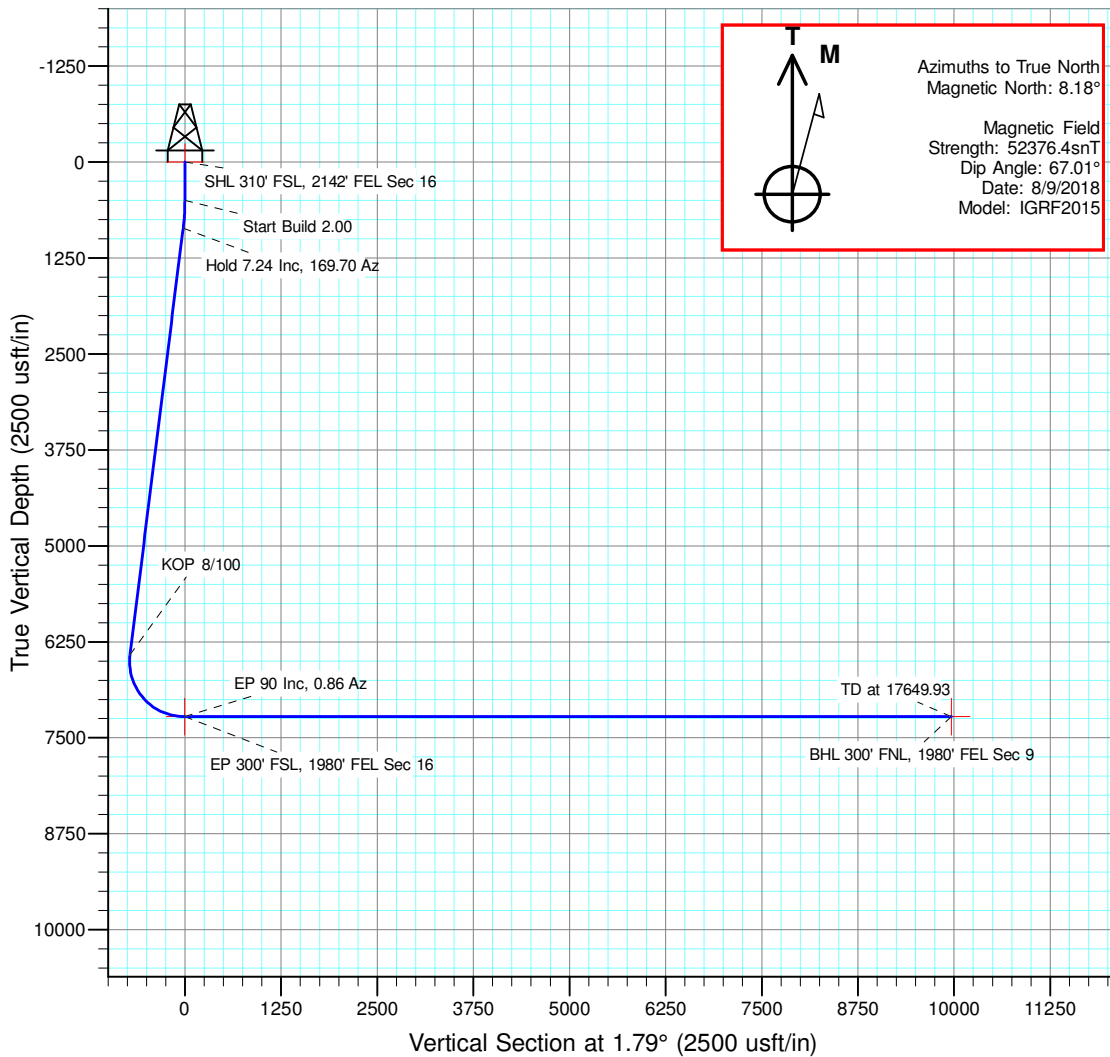
SLB 16

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	Start Build 2.00
862.07	7.24	169.70	861.10	-22.48	4.09	-22.34	22.85	Hold 7.24 Inc, 169.70 Az
6467.15	7.24	169.70	6421.48	-717.60	130.46	-713.18	729.36	KOP 8/100
7680.94	90.00	0.86	7226.00	-7.28	160.93	-2.26	1453.17	EP 90 Inc, 0.86 Az
17649.93	90.00	0.86	7226.00	9960.59	310.62	9965.43	11421.16	TD at 17649.93

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SHL 310' FSL, 2142' FEL Sec 16	0.00	0.00	0.00	1482115.953	3167940.762	40.655230	-104.894720	Point
BHL 300' FNL, 1980' FEL Sec 9	7226.00	9960.58	310.63	1492078.424	3168183.397	40.682570	-104.893600	Point
EP 300' FSL, 1980' FEL Sec 16	7226.00	-7.28	160.93	1482109.774	3168101.736	40.655210	-104.894140	Point

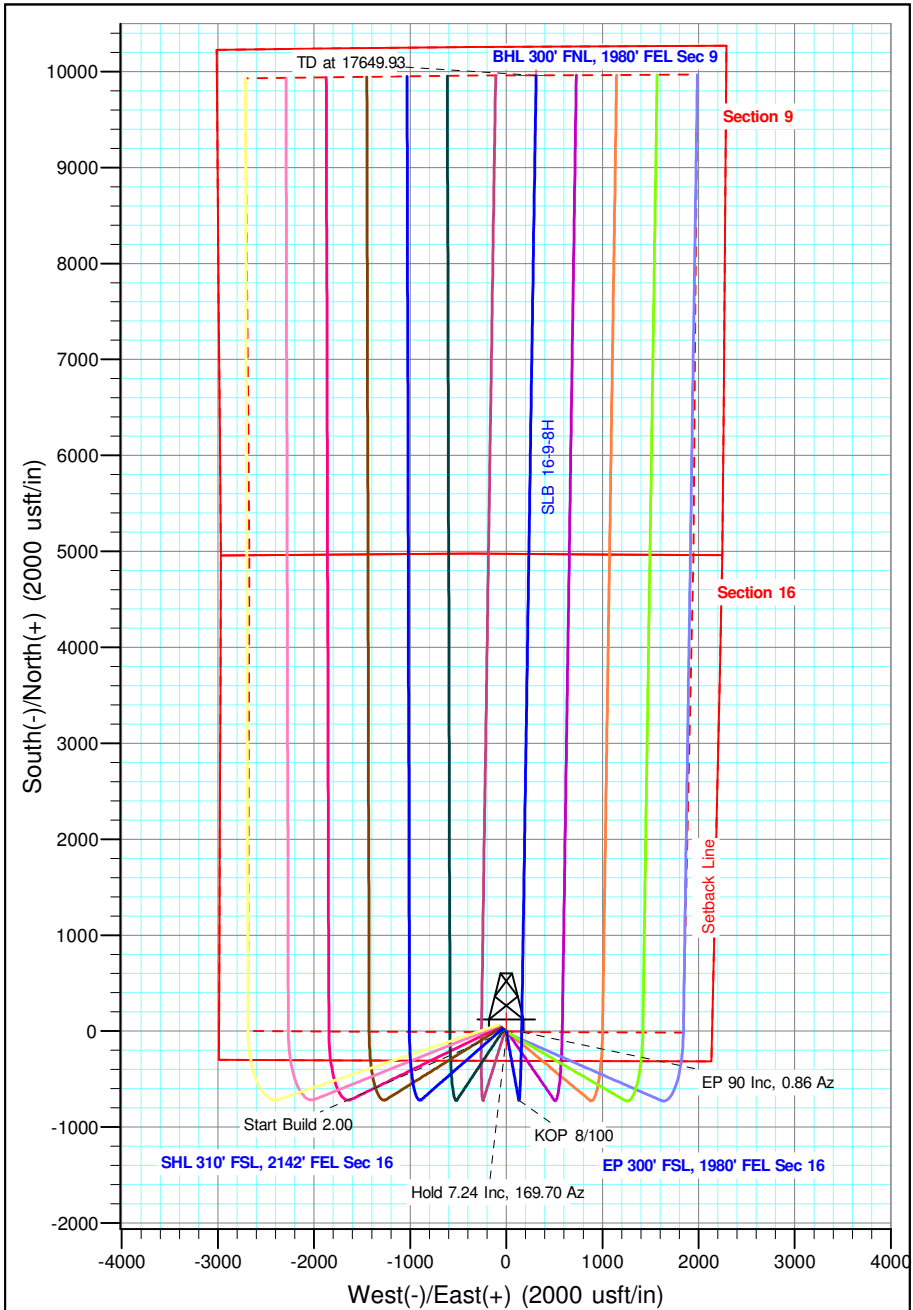


Geodetic Datum:

North American Datum 1983
US State Plane 1983, Colorado Northern Zone

Elevation:

Ground Elevation: 5251.00
KB Elevation: WELL @ 5266.00usft (Original Well Elev)





Edge Energy, LLC

Sec. 16-T8N-R67W, Weld County CO

SLB 16

SLB 16-9-8H

Wellbore #1

Plan: Design #1 9Auh18 mnh

Standard Planning Report - Geographic

10 August, 2018



Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SLB 16-9-8H
Company:	Edge Energy, LLC	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Project:	Sec. 16-T8N-R67W, Weld County CO	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site:	SLB 16	North Reference:	True
Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 9Auh18 mnh		

Project	Sec. 16-T8N-R67W, Weld County CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	SLB 16			
Site Position:		Northing:	1,482,180.969 usft	Latitude: 40.655410
From:	Lat/Long	Easting:	3,167,857.078 usft	Longitude: -104.895020
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.39 °

Well	SLB 16-9-8H					
Well Position	+N/-S	0.00 usft	Northing:	1,482,115.953 usft	Latitude:	40.655230
	+E/-W	0.00 usft	Easting:	3,167,940.762 usft	Longitude:	-104.894720
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,251.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/9/2018	8.18	67.01	52,376.36002721

Design	Design #1 9Auh18 mnh			
Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	1.79

Plan Survey Tool Program	Date	8/10/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,649.23 Design #1 9Auh18 mnh (Wellbor	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
862.07	7.24	169.70	861.10	-22.48	4.09	2.00	2.00	0.00	169.70	
6,467.15	7.24	169.70	6,421.48	-717.60	130.46	0.00	0.00	0.00	0.00	
7,680.94	90.00	0.86	7,226.00	-7.28	160.93	8.00	6.82	-13.91	-168.75	EP 300' FSL, 1980' FI
17,649.93	90.00	0.86	7,226.00	9,960.58	310.63	0.00	0.00	0.00	0.00	BHL 300' FNL, 1980' I



Microsoft
Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SLB 16-9-8H
Company:	Edge Energy, LLC	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Project:	Sec. 16-T8N-R67W, Weld County CO	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site:	SLB 16	North Reference:	True
Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 9Auh18 mnh		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	1,482,115.953	3,167,940.762	40.655230	-104.894720	
500.00	0.00	0.00	500.00	0.00	0.00	1,482,115.953	3,167,940.762	40.655230	-104.894720	
Start Build 2.00										
600.00	2.00	169.70	599.98	-1.72	0.31	1,482,114.238	3,167,941.085	40.655225	-104.894719	
700.00	4.00	169.70	699.84	-6.87	1.25	1,482,109.096	3,167,942.057	40.655211	-104.894716	
800.00	6.00	169.70	799.45	-15.44	2.81	1,482,100.532	3,167,943.674	40.655188	-104.894710	
862.07	7.24	169.70	861.10	-22.48	4.09	1,482,093.500	3,167,945.002	40.655168	-104.894706	
Hold 7.24 Inc, 169.70 Az										
900.00	7.24	169.70	898.73	-27.19	4.94	1,482,088.802	3,167,945.889	40.655155	-104.894702	
1,000.00	7.24	169.70	997.94	-39.59	7.20	1,482,076.416	3,167,948.229	40.655121	-104.894694	
1,100.00	7.24	169.70	1,097.14	-51.99	9.45	1,482,064.030	3,167,950.568	40.655087	-104.894686	
1,200.00	7.24	169.70	1,196.34	-64.39	11.71	1,482,051.644	3,167,952.907	40.655053	-104.894678	
1,300.00	7.24	169.70	1,295.54	-76.79	13.96	1,482,039.258	3,167,955.247	40.655019	-104.894670	
1,400.00	7.24	169.70	1,394.75	-89.19	16.22	1,482,026.872	3,167,957.586	40.654985	-104.894662	
1,500.00	7.24	169.70	1,493.95	-101.59	18.47	1,482,014.486	3,167,959.925	40.654951	-104.894654	
1,600.00	7.24	169.70	1,593.15	-114.00	20.73	1,482,002.100	3,167,962.264	40.654917	-104.894646	
1,700.00	7.24	169.70	1,692.35	-126.40	22.98	1,481,989.715	3,167,964.604	40.654883	-104.894637	
1,800.00	7.24	169.70	1,791.56	-138.80	25.23	1,481,977.329	3,167,966.943	40.654849	-104.894629	
1,900.00	7.24	169.70	1,890.76	-151.20	27.49	1,481,964.943	3,167,969.282	40.654815	-104.894621	
2,000.00	7.24	169.70	1,989.96	-163.60	29.74	1,481,952.557	3,167,971.622	40.654781	-104.894613	
2,100.00	7.24	169.70	2,089.16	-176.00	32.00	1,481,940.171	3,167,973.961	40.654747	-104.894605	
2,200.00	7.24	169.70	2,188.37	-188.41	34.25	1,481,927.785	3,167,976.300	40.654713	-104.894597	
2,300.00	7.24	169.70	2,287.57	-200.81	36.51	1,481,915.399	3,167,978.639	40.654679	-104.894589	
2,400.00	7.24	169.70	2,386.77	-213.21	38.76	1,481,903.013	3,167,980.979	40.654645	-104.894581	
2,500.00	7.24	169.70	2,485.97	-225.61	41.02	1,481,890.627	3,167,983.318	40.654611	-104.894572	
2,600.00	7.24	169.70	2,585.18	-238.01	43.27	1,481,878.241	3,167,985.657	40.654577	-104.894564	
2,700.00	7.24	169.70	2,684.38	-250.41	45.53	1,481,865.855	3,167,987.997	40.654543	-104.894556	
2,800.00	7.24	169.70	2,783.58	-262.82	47.78	1,481,853.470	3,167,990.336	40.654509	-104.894548	
2,900.00	7.24	169.70	2,882.78	-275.22	50.04	1,481,841.084	3,167,992.675	40.654475	-104.894540	
3,000.00	7.24	169.70	2,981.98	-287.62	52.29	1,481,828.698	3,167,995.014	40.654441	-104.894532	
3,100.00	7.24	169.70	3,081.19	-300.02	54.55	1,481,816.312	3,167,997.354	40.654407	-104.894524	
3,200.00	7.24	169.70	3,180.39	-312.42	56.80	1,481,803.926	3,167,999.693	40.654373	-104.894516	
3,300.00	7.24	169.70	3,279.59	-324.82	59.05	1,481,791.540	3,168,002.032	40.654338	-104.894507	
3,400.00	7.24	169.70	3,378.79	-337.23	61.31	1,481,779.154	3,168,004.372	40.654304	-104.894499	
3,500.00	7.24	169.70	3,478.00	-349.63	63.56	1,481,766.768	3,168,006.711	40.654270	-104.894491	
3,600.00	7.24	169.70	3,577.20	-362.03	65.82	1,481,754.382	3,168,009.050	40.654236	-104.894483	
3,700.00	7.24	169.70	3,676.40	-374.43	68.07	1,481,741.996	3,168,011.389	40.654202	-104.894475	
3,800.00	7.24	169.70	3,775.60	-386.83	70.33	1,481,729.610	3,168,013.729	40.654168	-104.894467	
3,900.00	7.24	169.70	3,874.81	-399.23	72.58	1,481,717.225	3,168,016.068	40.654134	-104.894459	
4,000.00	7.24	169.70	3,974.01	-411.63	74.84	1,481,704.839	3,168,018.407	40.654100	-104.894451	
4,100.00	7.24	169.70	4,073.21	-424.04	77.09	1,481,692.453	3,168,020.747	40.654066	-104.894442	
4,200.00	7.24	169.70	4,172.41	-436.44	79.35	1,481,680.067	3,168,023.086	40.654032	-104.894434	
4,300.00	7.24	169.70	4,271.62	-448.84	81.60	1,481,667.681	3,168,025.425	40.653998	-104.894426	
4,400.00	7.24	169.70	4,370.82	-461.24	83.86	1,481,655.295	3,168,027.764	40.653964	-104.894418	
4,500.00	7.24	169.70	4,470.02	-473.64	86.11	1,481,642.909	3,168,030.104	40.653930	-104.894410	
4,600.00	7.24	169.70	4,569.22	-486.04	88.37	1,481,630.523	3,168,032.443	40.653896	-104.894402	
4,700.00	7.24	169.70	4,668.43	-498.45	90.62	1,481,618.137	3,168,034.782	40.653862	-104.894394	
4,800.00	7.24	169.70	4,767.63	-510.85	92.88	1,481,605.751	3,168,037.122	40.653828	-104.894386	
4,900.00	7.24	169.70	4,866.83	-523.25	95.13	1,481,593.365	3,168,039.461	40.653794	-104.894377	
5,000.00	7.24	169.70	4,966.03	-535.65	97.38	1,481,580.980	3,168,041.800	40.653760	-104.894369	
5,100.00	7.24	169.70	5,065.24	-548.05	99.64	1,481,568.594	3,168,044.139	40.653726	-104.894361	
5,200.00	7.24	169.70	5,164.44	-560.45	101.89	1,481,556.208	3,168,046.479	40.653692	-104.894353	
5,300.00	7.24	169.70	5,263.64	-572.86	104.15	1,481,543.822	3,168,048.818	40.653658	-104.894345	
5,400.00	7.24	169.70	5,362.84	-585.26	106.40	1,481,531.436	3,168,051.157	40.653624	-104.894337	



Microsoft
Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SLB 16-9-8H
Company:	Edge Energy, LLC	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Project:	Sec. 16-T8N-R67W, Weld County CO	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site:	SLB 16	North Reference:	True
Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 9Auh18 mnh		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,500.00	7.24	169.70	5,462.05	-597.66	108.66	1,481,519.050	3,168,053.496	40.653590	-104.894329
5,600.00	7.24	169.70	5,561.25	-610.06	110.91	1,481,506.664	3,168,055.836	40.653556	-104.894321
5,700.00	7.24	169.70	5,660.45	-622.46	113.17	1,481,494.278	3,168,058.175	40.653522	-104.894312
5,800.00	7.24	169.70	5,759.65	-634.86	115.42	1,481,481.892	3,168,060.514	40.653487	-104.894304
5,900.00	7.24	169.70	5,858.85	-647.26	117.68	1,481,469.506	3,168,062.854	40.653453	-104.894296
6,000.00	7.24	169.70	5,958.06	-659.67	119.93	1,481,457.120	3,168,065.193	40.653419	-104.894288
6,100.00	7.24	169.70	6,057.26	-672.07	122.19	1,481,444.734	3,168,067.532	40.653385	-104.894280
6,200.00	7.24	169.70	6,156.46	-684.47	124.44	1,481,432.349	3,168,069.871	40.653351	-104.894272
6,300.00	7.24	169.70	6,255.66	-696.87	126.70	1,481,419.963	3,168,072.211	40.653317	-104.894264
6,400.00	7.24	169.70	6,354.87	-709.27	128.95	1,481,407.577	3,168,074.550	40.653283	-104.894256
6,467.15	7.24	169.70	6,421.48	-717.60	130.46	1,481,399.260	3,168,076.121	40.653260	-104.894250
KOP 8/100									
6,500.00	4.69	163.42	6,454.15	-720.93	131.22	1,481,395.940	3,168,076.897	40.653251	-104.894247
6,600.00	3.80	22.63	6,554.04	-721.79	133.66	1,481,395.091	3,168,079.348	40.653249	-104.894239
6,700.00	11.61	7.74	6,653.06	-708.74	136.30	1,481,408.155	3,168,081.892	40.653285	-104.894229
6,800.00	19.57	4.83	6,749.31	-682.04	139.06	1,481,434.878	3,168,084.478	40.653358	-104.894219
6,900.00	27.56	3.56	6,840.90	-642.20	141.92	1,481,474.740	3,168,087.058	40.653467	-104.894209
7,000.00	35.55	2.83	6,926.04	-589.99	144.80	1,481,526.965	3,168,089.581	40.653611	-104.894198
7,100.00	43.54	2.34	7,003.09	-526.44	147.65	1,481,590.537	3,168,091.998	40.653785	-104.894188
7,200.00	51.54	1.98	7,070.54	-452.77	150.41	1,481,664.217	3,168,094.261	40.653987	-104.894178
7,300.00	59.53	1.69	7,127.09	-370.43	153.04	1,481,746.573	3,168,096.326	40.654213	-104.894169
7,400.00	67.53	1.44	7,171.62	-281.02	155.48	1,481,836.001	3,168,098.155	40.654459	-104.894160
7,500.00	75.53	1.22	7,203.27	-186.27	157.68	1,481,930.760	3,168,099.710	40.654719	-104.894152
7,600.00	83.53	1.02	7,221.43	-88.04	159.60	1,482,029.007	3,168,100.961	40.654988	-104.894145
7,680.94	90.00	0.86	7,226.00	-7.28	160.93	1,482,109.774	3,168,101.735	40.655210	-104.894140
EP 90 Inc, 0.86 Az									
7,700.00	90.00	0.86	7,226.00	11.78	161.21	1,482,128.830	3,168,101.892	40.655262	-104.894139
7,800.00	90.00	0.86	7,226.00	111.77	162.72	1,482,228.827	3,168,102.711	40.655537	-104.894134
7,900.00	90.00	0.86	7,226.00	211.75	164.22	1,482,328.824	3,168,103.530	40.655811	-104.894128
8,000.00	90.00	0.86	7,226.00	311.74	165.72	1,482,428.820	3,168,104.349	40.656086	-104.894123
8,100.00	90.00	0.86	7,226.00	411.73	167.22	1,482,528.817	3,168,105.168	40.656360	-104.894118
8,200.00	90.00	0.86	7,226.00	511.72	168.72	1,482,628.814	3,168,105.987	40.656635	-104.894112
8,300.00	90.00	0.86	7,226.00	611.71	170.22	1,482,728.810	3,168,106.806	40.656909	-104.894107
8,400.00	90.00	0.86	7,226.00	711.70	171.73	1,482,828.807	3,168,107.626	40.657184	-104.894101
8,500.00	90.00	0.86	7,226.00	811.69	173.23	1,482,928.804	3,168,108.445	40.657458	-104.894096
8,600.00	90.00	0.86	7,226.00	911.68	174.73	1,483,028.800	3,168,109.264	40.657732	-104.894090
8,700.00	90.00	0.86	7,226.00	1,011.66	176.23	1,483,128.797	3,168,110.083	40.658007	-104.894085
8,800.00	90.00	0.86	7,226.00	1,111.65	177.73	1,483,228.793	3,168,110.902	40.658281	-104.894080
8,900.00	90.00	0.86	7,226.00	1,211.64	179.23	1,483,328.790	3,168,111.721	40.658556	-104.894074
9,000.00	90.00	0.86	7,226.00	1,311.63	180.74	1,483,428.787	3,168,112.541	40.658830	-104.894069
9,100.00	90.00	0.86	7,226.00	1,411.62	182.24	1,483,528.783	3,168,113.360	40.659105	-104.894063
9,200.00	90.00	0.86	7,226.00	1,511.61	183.74	1,483,628.780	3,168,114.179	40.659379	-104.894058
9,300.00	90.00	0.86	7,226.00	1,611.60	185.24	1,483,728.777	3,168,114.998	40.659654	-104.894053
9,400.00	90.00	0.86	7,226.00	1,711.59	186.74	1,483,828.773	3,168,115.817	40.659928	-104.894047
9,500.00	90.00	0.86	7,226.00	1,811.57	188.24	1,483,928.770	3,168,116.636	40.660203	-104.894042
9,600.00	90.00	0.86	7,226.00	1,911.56	189.75	1,484,028.767	3,168,117.455	40.660477	-104.894036
9,700.00	90.00	0.86	7,226.00	2,011.55	191.25	1,484,128.763	3,168,118.275	40.660751	-104.894031
9,800.00	90.00	0.86	7,226.00	2,111.54	192.75	1,484,228.760	3,168,119.094	40.661026	-104.894026
9,900.00	90.00	0.86	7,226.00	2,211.53	194.25	1,484,328.757	3,168,119.913	40.661300	-104.894020
10,000.00	90.00	0.86	7,226.00	2,311.52	195.75	1,484,428.754	3,168,120.732	40.661575	-104.894015
10,100.00	90.00	0.86	7,226.00	2,411.51	197.25	1,484,528.751	3,168,121.551	40.661849	-104.894009
10,200.00	90.00	0.86	7,226.00	2,511.50	198.76	1,484,628.747	3,168,122.370	40.662124	-104.894004
10,300.00	90.00	0.86	7,226.00	2,611.48	200.26	1,484,728.744	3,168,123.190	40.662398	-104.893998
10,400.00	90.00	0.86	7,226.00	2,711.47	201.76	1,484,828.741	3,168,124.009	40.662673	-104.893993



Microsoft
Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SLB 16-9-8H
Company:	Edge Energy, LLC	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Project:	Sec. 16-T8N-R67W, Weld County CO	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site:	SLB 16	North Reference:	True
Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 9Auh18 mnh		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,500.00	90.00	0.86	7,226.00	2,811.46	203.26	1,484,928.737	3,168,124.828	40.662947	-104.893988
10,600.00	90.00	0.86	7,226.00	2,911.45	204.76	1,485,028.734	3,168,125.647	40.663222	-104.893982
10,700.00	90.00	0.86	7,226.00	3,011.44	206.26	1,485,128.731	3,168,126.466	40.663496	-104.893977
10,800.00	90.00	0.86	7,226.00	3,111.43	207.77	1,485,228.727	3,168,127.285	40.663770	-104.893971
10,900.00	90.00	0.86	7,226.00	3,211.42	209.27	1,485,328.724	3,168,128.105	40.664045	-104.893966
11,000.00	90.00	0.86	7,226.00	3,311.41	210.77	1,485,428.721	3,168,128.924	40.664319	-104.893961
11,100.00	90.00	0.86	7,226.00	3,411.39	212.27	1,485,528.717	3,168,129.743	40.664594	-104.893955
11,200.00	90.00	0.86	7,226.00	3,511.38	213.77	1,485,628.714	3,168,130.562	40.664868	-104.893950
11,300.00	90.00	0.86	7,226.00	3,611.37	215.28	1,485,728.710	3,168,131.381	40.665143	-104.893944
11,400.00	90.00	0.86	7,226.00	3,711.36	216.78	1,485,828.707	3,168,132.200	40.665417	-104.893939
11,500.00	90.00	0.86	7,226.00	3,811.35	218.28	1,485,928.704	3,168,133.019	40.665692	-104.893933
11,600.00	90.00	0.86	7,226.00	3,911.34	219.78	1,486,028.700	3,168,133.839	40.665966	-104.893928
11,700.00	90.00	0.86	7,226.00	4,011.33	221.28	1,486,128.697	3,168,134.658	40.666240	-104.893923
11,800.00	90.00	0.86	7,226.00	4,111.32	222.78	1,486,228.694	3,168,135.477	40.666515	-104.893917
11,900.00	90.00	0.86	7,226.00	4,211.30	224.29	1,486,328.690	3,168,136.296	40.666789	-104.893912
12,000.00	90.00	0.86	7,226.00	4,311.29	225.79	1,486,428.687	3,168,137.115	40.667064	-104.893906
12,100.00	90.00	0.86	7,226.00	4,411.28	227.29	1,486,528.684	3,168,137.934	40.667338	-104.893901
12,200.00	90.00	0.86	7,226.00	4,511.27	228.79	1,486,628.680	3,168,138.754	40.667613	-104.893896
12,300.00	90.00	0.86	7,226.00	4,611.26	230.29	1,486,728.677	3,168,139.573	40.667887	-104.893890
12,400.00	90.00	0.86	7,226.00	4,711.25	231.79	1,486,828.674	3,168,140.392	40.668162	-104.893885
12,500.00	90.00	0.86	7,226.00	4,811.24	233.30	1,486,928.670	3,168,141.211	40.668436	-104.893879
12,600.00	90.00	0.86	7,226.00	4,911.23	234.80	1,487,028.667	3,168,142.030	40.668711	-104.893874
12,700.00	90.00	0.86	7,226.00	5,011.21	236.30	1,487,128.663	3,168,142.849	40.668985	-104.893868
12,800.00	90.00	0.86	7,226.00	5,111.20	237.80	1,487,228.660	3,168,143.668	40.669259	-104.893863
12,900.00	90.00	0.86	7,226.00	5,211.19	239.30	1,487,328.657	3,168,144.488	40.669534	-104.893858
13,000.00	90.00	0.86	7,226.00	5,311.18	240.80	1,487,428.653	3,168,145.307	40.669808	-104.893852
13,100.00	90.00	0.86	7,226.00	5,411.17	242.31	1,487,528.650	3,168,146.126	40.670083	-104.893847
13,200.00	90.00	0.86	7,226.00	5,511.16	243.81	1,487,628.647	3,168,146.945	40.670357	-104.893841
13,300.00	90.00	0.86	7,226.00	5,611.15	245.31	1,487,728.643	3,168,147.764	40.670632	-104.893836
13,400.00	90.00	0.86	7,226.00	5,711.13	246.81	1,487,828.640	3,168,148.583	40.670906	-104.893831
13,500.00	90.00	0.86	7,226.00	5,811.12	248.31	1,487,928.637	3,168,149.403	40.671181	-104.893825
13,600.00	90.00	0.86	7,226.00	5,911.11	249.81	1,488,028.633	3,168,150.222	40.671455	-104.893820
13,700.00	90.00	0.86	7,226.00	6,011.10	251.32	1,488,128.630	3,168,151.041	40.671729	-104.893814
13,800.00	90.00	0.86	7,226.00	6,111.09	252.82	1,488,228.626	3,168,151.860	40.672004	-104.893809
13,900.00	90.00	0.86	7,226.00	6,211.08	254.32	1,488,328.623	3,168,152.679	40.672278	-104.893803
14,000.00	90.00	0.86	7,226.00	6,311.07	255.82	1,488,428.620	3,168,153.498	40.672553	-104.893798
14,100.00	90.00	0.86	7,226.00	6,411.06	257.32	1,488,528.616	3,168,154.318	40.672827	-104.893793
14,200.00	90.00	0.86	7,226.00	6,511.04	258.82	1,488,628.613	3,168,155.137	40.673102	-104.893787
14,300.00	90.00	0.86	7,226.00	6,611.03	260.33	1,488,728.610	3,168,155.956	40.673376	-104.893782
14,400.00	90.00	0.86	7,226.00	6,711.02	261.83	1,488,828.606	3,168,156.775	40.673651	-104.893776
14,500.00	90.00	0.86	7,226.00	6,811.01	263.33	1,488,928.603	3,168,157.594	40.673925	-104.893771
14,600.00	90.00	0.86	7,226.00	6,911.00	264.83	1,489,028.600	3,168,158.413	40.674200	-104.893766
14,700.00	90.00	0.86	7,226.00	7,010.99	266.33	1,489,128.596	3,168,159.232	40.674474	-104.893760
14,800.00	90.00	0.86	7,226.00	7,110.98	267.83	1,489,228.593	3,168,160.052	40.674748	-104.893755
14,900.00	90.00	0.86	7,226.00	7,210.97	269.34	1,489,328.590	3,168,160.871	40.675023	-104.893749
15,000.00	90.00	0.86	7,226.00	7,310.95	270.84	1,489,428.586	3,168,161.690	40.675297	-104.893744
15,100.00	90.00	0.86	7,226.00	7,410.94	272.34	1,489,528.583	3,168,162.509	40.675572	-104.893738
15,200.00	90.00	0.86	7,226.00	7,510.93	273.84	1,489,628.579	3,168,163.328	40.675846	-104.893733
15,300.00	90.00	0.86	7,226.00	7,610.92	275.34	1,489,728.576	3,168,164.147	40.676121	-104.893728
15,400.00	90.00	0.86	7,226.00	7,710.91	276.84	1,489,828.573	3,168,164.967	40.676395	-104.893722
15,500.00	90.00	0.86	7,226.00	7,810.90	278.35	1,489,928.569	3,168,165.786	40.676670	-104.893717
15,600.00	90.00	0.86	7,226.00	7,910.89	279.85	1,490,028.566	3,168,166.605	40.676944	-104.893711
15,700.00	90.00	0.86	7,226.00	8,010.88	281.35	1,490,128.563	3,168,167.424	40.677219	-104.893706
15,800.00	90.00	0.86	7,226.00	8,110.86	282.85	1,490,228.559	3,168,168.243	40.677493	-104.893701
15,900.00	90.00	0.86	7,226.00	8,210.85	284.35	1,490,328.556	3,168,169.062	40.677767	-104.893695

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SLB 16-9-8H
Company:	Edge Energy, LLC	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Project:	Sec. 16-T8N-R67W, Weld County CO	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site:	SLB 16	North Reference:	True
Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 9Auh18 mnH		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,000.00	90.00	0.86	7,226.00	8,310.84	285.85	1,490,428.553	3,168,169.881	40.678042	-104.893690
16,100.00	90.00	0.86	7,226.00	8,410.83	287.36	1,490,528.549	3,168,170.701	40.678316	-104.893684
16,200.00	90.00	0.86	7,226.00	8,510.82	288.86	1,490,628.546	3,168,171.520	40.678591	-104.893679
16,300.00	90.00	0.86	7,226.00	8,610.81	290.36	1,490,728.542	3,168,172.339	40.678865	-104.893673
16,400.00	90.00	0.86	7,226.00	8,710.80	291.86	1,490,828.539	3,168,173.158	40.679140	-104.893668
16,500.00	90.00	0.86	7,226.00	8,810.79	293.36	1,490,928.536	3,168,173.977	40.679414	-104.893663
16,600.00	90.00	0.86	7,226.00	8,910.77	294.86	1,491,028.532	3,168,174.796	40.679689	-104.893657
16,700.00	90.00	0.86	7,226.00	9,010.76	296.37	1,491,128.529	3,168,175.616	40.679963	-104.893652
16,800.00	90.00	0.86	7,226.00	9,110.75	297.87	1,491,228.526	3,168,176.435	40.680237	-104.893646
16,900.00	90.00	0.86	7,226.00	9,210.74	299.37	1,491,328.522	3,168,177.254	40.680512	-104.893641
17,000.00	90.00	0.86	7,226.00	9,310.73	300.87	1,491,428.519	3,168,178.073	40.680786	-104.893635
17,100.00	90.00	0.86	7,226.00	9,410.72	302.37	1,491,528.516	3,168,178.892	40.681061	-104.893630
17,200.00	90.00	0.86	7,226.00	9,510.71	303.87	1,491,628.512	3,168,179.711	40.681335	-104.893625
17,300.00	90.00	0.86	7,226.00	9,610.70	305.38	1,491,728.509	3,168,180.530	40.681610	-104.893619
17,400.00	90.00	0.86	7,226.00	9,710.68	306.88	1,491,828.506	3,168,181.350	40.681884	-104.893614
17,500.00	90.00	0.86	7,226.00	9,810.67	308.38	1,491,928.502	3,168,182.169	40.682159	-104.893608
17,600.00	90.00	0.86	7,226.00	9,910.66	309.88	1,492,028.499	3,168,182.988	40.682433	-104.893603
17,649.93	90.00	0.86	7,226.00	9,960.58	310.63	1,492,078.425	3,168,183.397	40.682570	-104.893600
TD at 17649.93									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 310' FSL, 2142' FEI	0.00	0.00	0.00	0.00	0.00	1,482,115.953	3,167,940.762	40.655230	-104.894720
- plan hits target center									
- Point									
BHL 300' FNL, 1980' FE	0.00	0.00	7,226.00	9,960.58	310.63	1,492,078.425	3,168,183.397	40.682570	-104.893600
- plan hits target center									
- Point									
EP 300' FSL, 1980' FEL	0.00	0.00	7,226.00	-7.28	160.93	1,482,109.774	3,168,101.735	40.655210	-104.894140
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
862.07	861.10	-22.48	4.09	Hold 7.24 Inc, 169.70 Az
6,467.15	6,421.48	-717.60	130.46	KOP 8/100
7,680.94	7,226.00	-7.28	160.93	EP 90 Inc, 0.86 Az
17,649.93	7,226.00	9,960.58	310.63	TD at 17649.93



Edge Energy, LLC

Sec. 16-T8N-R67W, Weld County CO

SLB 16

SLB 16-9-8H

Wellbore #1

Design #1 9Auh18 mnH

Anticollision Summary Report

10 August, 2018



Microsoft
Anticollision Summary Report

Company:	Edge Energy, LLC	Local Co-ordinate Reference:	Well SLB 16-9-8H
Project:	Sec. 16-T8N-R67W, Weld County CO	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Reference Site:	SLB 16	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Single User Db
Reference Design:	Design #1 9Auh18 mnh	Offset TVD Reference:	Offset Datum

Reference	Design #1 9Auh18 mnh		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	8/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,649.23	Design #1 9Auh18 mnh (Wellbore #1)	MWD	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SLB 16						
SLB 16-9-10H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	30.91	27.74	9.743	CC
SLB 16-9-10H - Wellbore #1 - Design #1 8Aug18 mnh	600.00	598.92	31.39	27.53	8.143	ES
SLB 16-9-10H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,718.26	837.51	469.08	2.273	SF
SLB 16-9-11H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	44.17	41.00	13.924	CC
SLB 16-9-11H - Wellbore #1 - Design #1 8Aug18 mnh	600.00	598.47	44.66	40.81	11.588	ES
SLB 16-9-11H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,729.17	1,259.91	891.60	3.421	SF
SLB 16-9-12H - Wellbore #1 - Design #1 8Aug18 mnh	416.33	417.33	59.60	57.02	23.135	CC
SLB 16-9-12H - Wellbore #1 - Design #1 8Aug18 mnh	600.00	598.98	60.02	56.16	15.561	ES
SLB 16-9-12H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,889.17	1,677.79	1,309.56	4.556	SF
SLB 16-9-1H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	499.00	105.97	102.80	33.441	CC, ES
SLB 16-9-1H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	18,046.86	3,024.59	2,657.30	8.235	SF
SLB 16-9-2H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	92.75	89.57	29.235	CC, ES
SLB 16-9-2H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,948.50	2,601.97	2,234.55	7.082	SF
SLB 16-9-3H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	75.09	71.92	23.669	CC, ES
SLB 16-9-3H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,783.67	2,184.71	1,817.07	5.943	SF
SLB 16-9-4H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	61.89	58.72	19.510	CC, ES
SLB 16-9-4H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,748.73	1,761.49	1,393.39	4.785	SF
SLB 16-9-5H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	46.37	43.20	14.618	CC, ES
SLB 16-9-5H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,628.76	1,344.80	976.57	3.652	SF
SLB 16-9-6H - Wellbore #1 - Design #1 8Aug18 mnh	500.00	500.00	31.15	27.98	9.820	CC, ES
SLB 16-9-6H - Wellbore #1 - Design #1 8Aug18 mnh	17,649.93	17,646.76	923.82	554.55	2.502	SF
SLB 16-9-7H - Wellbore #1 - Design #1 9Aug18 mnh	500.00	500.00	15.58	12.40	4.910	CC
SLB 16-9-7H - Wellbore #1 - Design #1 9Aug18 mnh	600.00	600.24	16.21	12.35	4.204	ES
SLB 16-9-7H - Wellbore #1 - Design #1 9Aug18 mnh	17,649.93	17,571.73	429.11	65.27	1.179	Level 2, SF
SLB 16-9-9H - Wellbore #1 - Design #1 9Aug18 mnh	500.00	500.00	13.28	10.10	4.185	CC
SLB 16-9-9H - Wellbore #1 - Design #1 9Aug18 mnh	600.00	599.57	13.70	9.84	3.553	ES
SLB 16-9-9H - Wellbore #1 - Design #1 9Aug18 mnh	17,649.93	17,609.68	422.98	56.60	1.154	Level 2, SF



Microsoft
Anticollision Summary Report

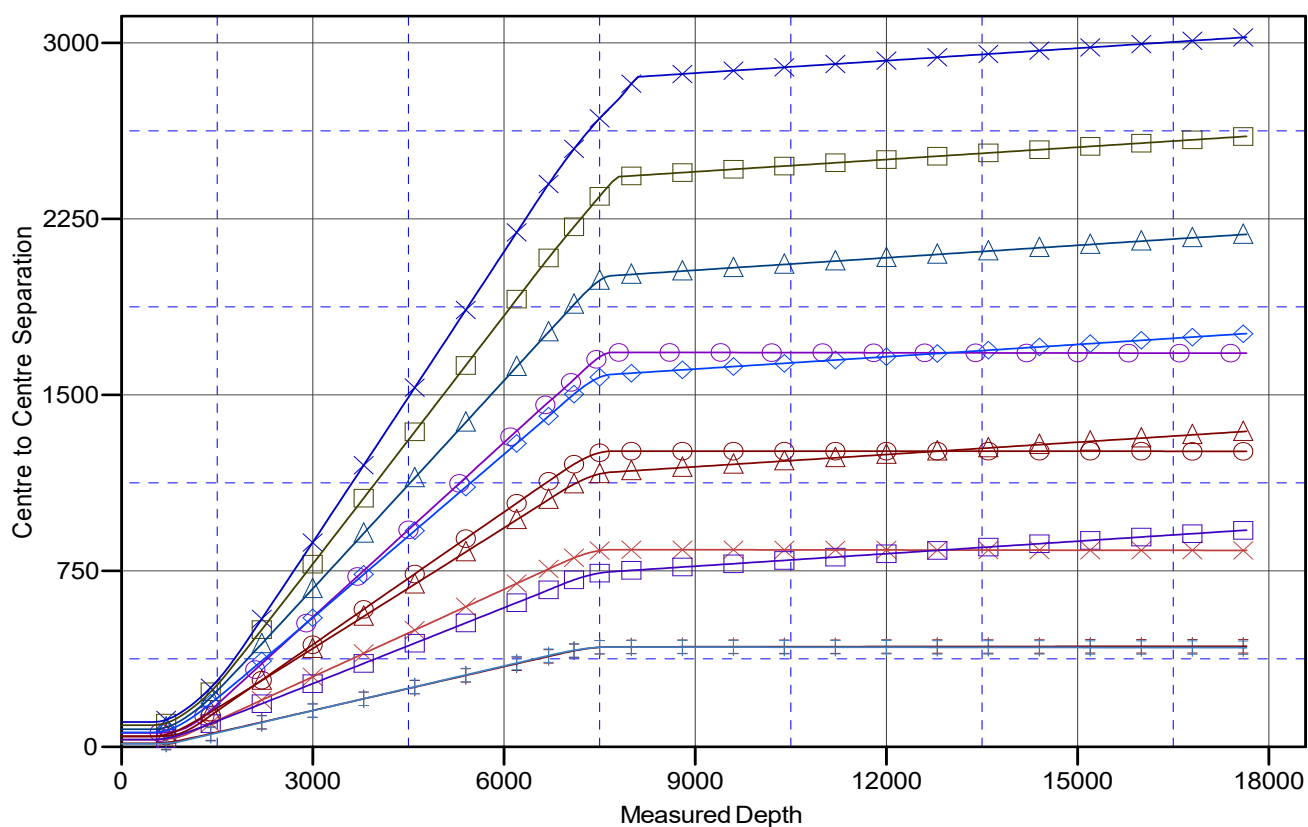
Company: Edge Energy, LLC
Project: Sec. 16-T8N-R67W, Weld County CO
Reference Site: SLB 16
Site Error: 0.00 usft
Reference Well: SLB 16-9-8H
Well Error: 0.00 usft
Reference Wellbore Wellbore #1
Reference Design: Design #1 9Auh18 mnH

Local Co-ordinate Reference: Well SLB 16-9-8H
TVD Reference: WELL @ 5266.00usft (Original Well Elev)
MD Reference: WELL @ 5266.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 5266.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: SLB 16-9-8H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.39°

Ladder Plot



LEGEND

SLB 16-9-10H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-11H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-12H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-1H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-2H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-3H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-4H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-5H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-6H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-7H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-8H, Wellbore #1, Design #1 9Aug18 mnH V0

Company:	Edge Energy, LLC	Local Co-ordinate Reference:	Well SLB 16-9-8H
Project:	Sec. 16-T8N-R67W, Weld County CO	TVD Reference:	WELL @ 5266.00usft (Original Well Elev)
Reference Site:	SLB 16	MD Reference:	WELL @ 5266.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	SLB 16-9-8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Single User Db
Reference Design:	Design #1 9Auh18 mnH	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5266.00usft (Original Well E

Offset Depths are relative to Offset Datum

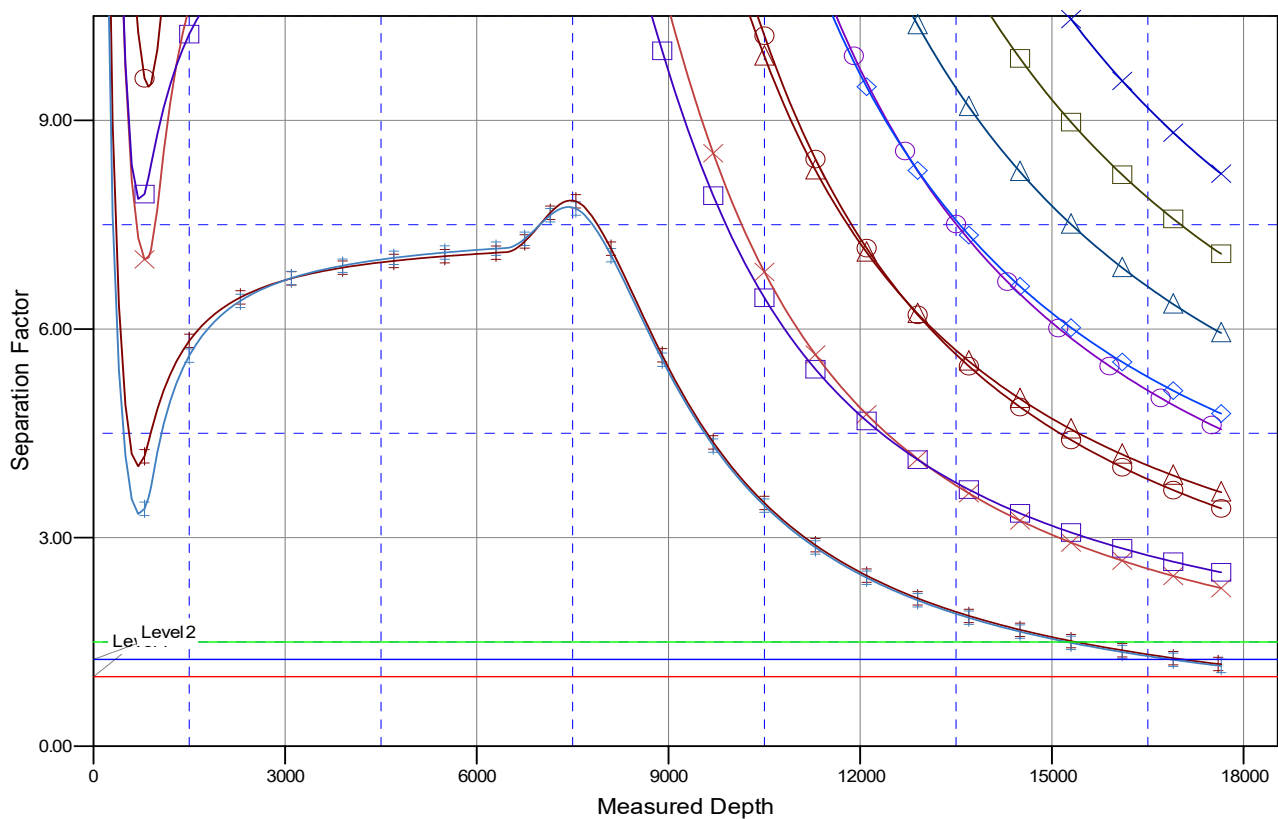
Central Meridian is -105.500000

Coordinates are relative to: SLB 16-9-8H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.39°

Separation Factor Plot



LEGEND

SLB 16-9-10H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-2H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-4H, Wellbore #1, Design #1 8Aug18 mnH V0
SLB 16-9-11H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-3H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-7H, Wellbore #1, Design #1 9Aug18 mnH V0
SLB 16-9-12H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-4H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-8H, Wellbore #1, Design #1 9Aug18 mnH V0
SLB 16-9-1H, Wellbore #1, Design #1 8Aug18 mnH V0	SLB 16-9-5H, Wellbore #1, Design #1 8Aug18 mnH V0	