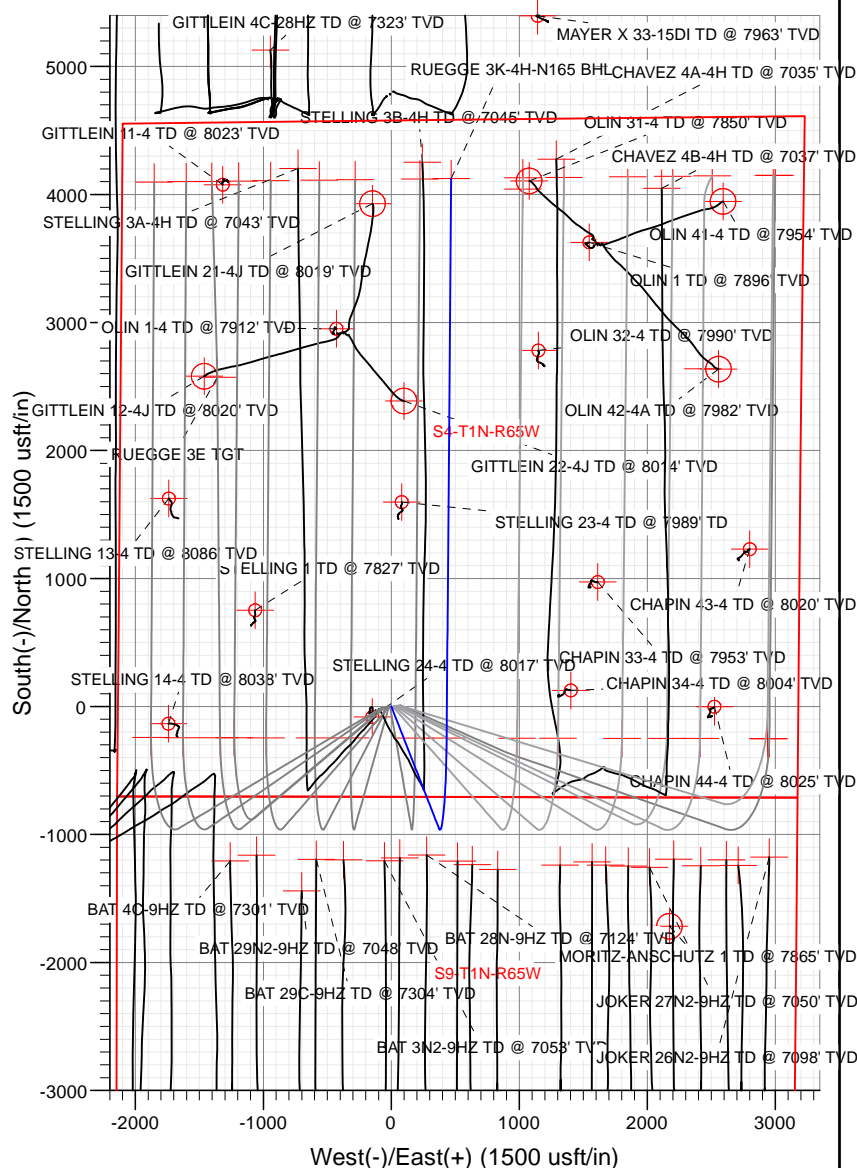
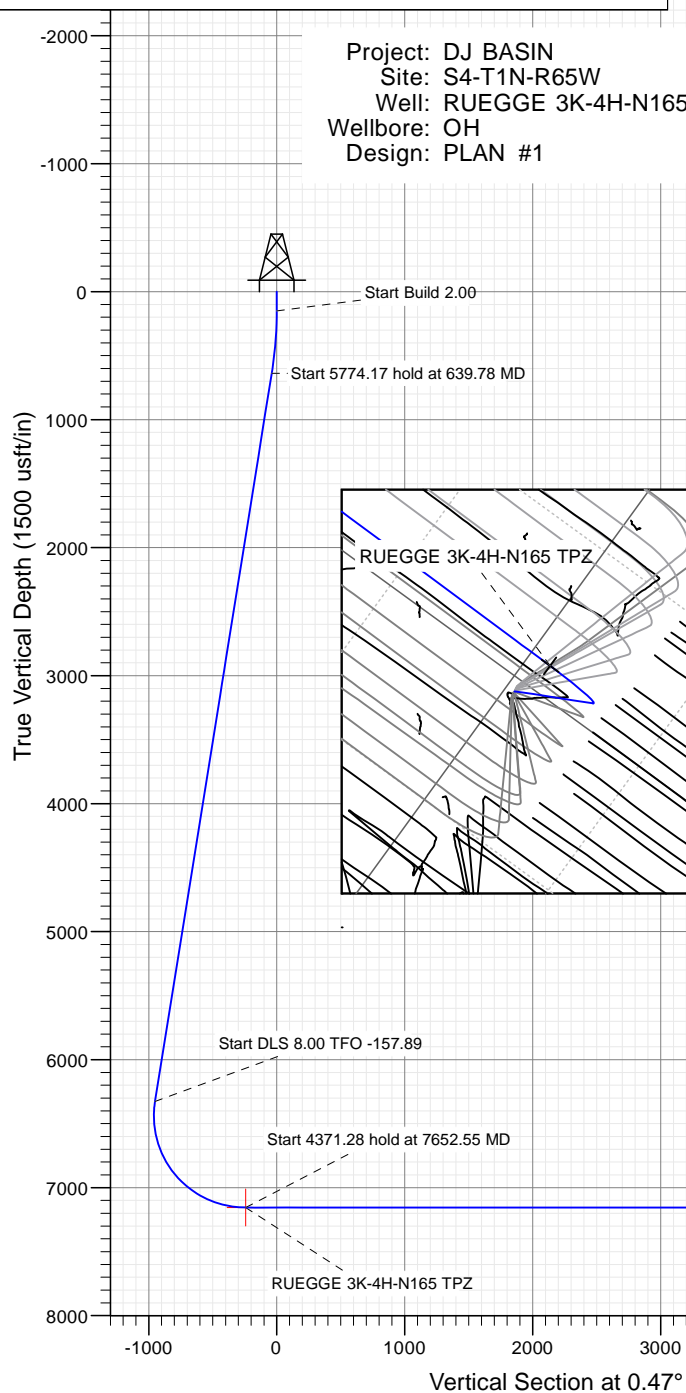




Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	639.78	9.80	158.65	637.40	-38.90	15.20	2.00	158.65	-38.77	
4	6413.95	9.80	158.65	6327.39	-953.89	372.81	0.00	0.00	-950.80	
5	7652.55	90.00	0.47	7155.00	-247.14	431.76	8.00	-157.89	-243.59	RUEGGE 3K-4H-N165 TPZ
6	12023.82	90.00	0.47	7155.00	-4123.99	467.87	0.00	0.00	-4127.69	RUEGGE 3K-4H-N165 BHL

PLAN #1 RUEGGE 3K-4H-N165 27 HB @ 4930.00psi Ground Level @ 4915.00 North American Datum 1983 Well RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-4H-N165 SHL True North						
Type User	Target No Target (Freehand)	Azimuth 0.47	Origin Slot	N/S 0.00	E/W 0.00	From To 0.00
Name		TVD	+N/S	+E/W	Latitude	Longitude
RUEGGE 3K-4H-N165 BHL		7155.00	4123.99	467.87	40.09678	-104.669102
RUEGGE 3K-4H-N165 TRG		7155.00	2927.14	431.76	40.07459	-104.66221

Project: DJ BASIN
Site: S4-T1N-R65W
Well: RUEGGE 3K-4H-N165
Wellbore: OH
Design: PLAN #1



Azimuths to True North
Magnetic North: 8.22°

Magnetic Field
Strength: 52188.7snT
Dip Angle: 66.50°
Date: 11/2/2017
Model: HDGM

WELL DETAILS: RUEGGE 3K-4H-N165

4915.00						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1271346.18	3232050.98	40.075257	-104.887674	3K-4H-N165 SHL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3K-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S4-T1N-R65W			
Site Position:		Northing:	1,271,333.68 usft	Latitude:	40.075225
From:	Map	Easting:	3,231,971.96 usft	Longitude:	-104.671056
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.54 °

Well	RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-4H-N165 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,271,346.18 usft	Latitude:	40.075257
	+E/-W	0.00 usft	Easting:	3,232,050.98 usft	Longitude:	-104.670774
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,915.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	11/2/2017	8.22	66.50	52,188.70000000

Design	PLAN #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	0.47	

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
639.78	9.80	158.65	637.40	-38.90	15.20	2.00	2.00	0.00	158.65	
6,413.95	9.80	158.65	6,327.39	-953.89	372.81	0.00	0.00	0.00	0.00	
7,652.55	90.00	0.47	7,155.00	-247.14	431.76	8.00	6.48	-12.77	-157.89	RUEGGE 3K-4H-N16
12,023.82	90.00	0.47	7,155.00	4,123.99	467.87	0.00	0.00	0.00	0.00	RUEGGE 3K-4H-N16

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3K-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	158.65	200.00	-0.41	0.16	-0.41	2.00	2.00	
300.00	3.00	158.65	299.93	-3.66	1.43	-3.64	2.00	2.00	
400.00	5.00	158.65	399.68	-10.15	3.97	-10.12	2.00	2.00	
500.00	7.00	158.65	499.13	-19.89	7.77	-19.82	2.00	2.00	
600.00	9.00	158.65	598.15	-32.85	12.84	-32.74	2.00	2.00	
639.78	9.80	158.65	637.40	-38.90	15.20	-38.77	2.00	2.00	
700.00	9.80	158.65	696.74	-48.44	18.93	-48.29	0.00	0.00	
800.00	9.80	158.65	795.28	-64.29	25.13	-64.08	0.00	0.00	
900.00	9.80	158.65	893.82	-80.14	31.32	-79.88	0.00	0.00	
1,000.00	9.80	158.65	992.37	-95.98	37.51	-95.67	0.00	0.00	
1,100.00	9.80	158.65	1,090.91	-111.83	43.71	-111.47	0.00	0.00	
1,200.00	9.80	158.65	1,189.45	-127.67	49.90	-127.26	0.00	0.00	
1,300.00	9.80	158.65	1,287.99	-143.52	56.09	-143.06	0.00	0.00	
1,400.00	9.80	158.65	1,386.53	-159.37	62.29	-158.85	0.00	0.00	
1,500.00	9.80	158.65	1,485.08	-175.21	68.48	-174.64	0.00	0.00	
1,600.00	9.80	158.65	1,583.62	-191.06	74.67	-190.44	0.00	0.00	
1,700.00	9.80	158.65	1,682.16	-206.90	80.86	-206.23	0.00	0.00	
1,800.00	9.80	158.65	1,780.70	-222.75	87.06	-222.03	0.00	0.00	
1,900.00	9.80	158.65	1,879.24	-238.60	93.25	-237.82	0.00	0.00	
2,000.00	9.80	158.65	1,977.79	-254.44	99.44	-253.62	0.00	0.00	
2,100.00	9.80	158.65	2,076.33	-270.29	105.64	-269.41	0.00	0.00	
2,200.00	9.80	158.65	2,174.87	-286.14	111.83	-285.21	0.00	0.00	
2,300.00	9.80	158.65	2,273.41	-301.98	118.02	-301.00	0.00	0.00	
2,400.00	9.80	158.65	2,371.96	-317.83	124.22	-316.80	0.00	0.00	
2,500.00	9.80	158.65	2,470.50	-333.67	130.41	-332.59	0.00	0.00	
2,600.00	9.80	158.65	2,569.04	-349.52	136.60	-348.39	0.00	0.00	
2,700.00	9.80	158.65	2,667.58	-365.37	142.80	-364.18	0.00	0.00	
2,800.00	9.80	158.65	2,766.12	-381.21	148.99	-379.98	0.00	0.00	
2,900.00	9.80	158.65	2,864.67	-397.06	155.18	-395.77	0.00	0.00	
3,000.00	9.80	158.65	2,963.21	-412.91	161.38	-411.57	0.00	0.00	
3,100.00	9.80	158.65	3,061.75	-428.75	167.57	-427.36	0.00	0.00	
3,200.00	9.80	158.65	3,160.29	-444.60	173.76	-443.16	0.00	0.00	
3,300.00	9.80	158.65	3,258.83	-460.44	179.96	-458.95	0.00	0.00	
3,400.00	9.80	158.65	3,357.38	-476.29	186.15	-474.75	0.00	0.00	
3,500.00	9.80	158.65	3,455.92	-492.14	192.34	-490.54	0.00	0.00	
3,600.00	9.80	158.65	3,554.46	-507.98	198.53	-506.34	0.00	0.00	
3,700.00	9.80	158.65	3,653.00	-523.83	204.73	-522.13	0.00	0.00	
3,800.00	9.80	158.65	3,751.54	-539.68	210.92	-537.93	0.00	0.00	
3,900.00	9.80	158.65	3,850.09	-555.52	217.11	-553.72	0.00	0.00	
4,000.00	9.80	158.65	3,948.63	-571.37	223.31	-569.52	0.00	0.00	
4,100.00	9.80	158.65	4,047.17	-587.21	229.50	-585.31	0.00	0.00	
4,200.00	9.80	158.65	4,145.71	-603.06	235.69	-601.11	0.00	0.00	
4,300.00	9.80	158.65	4,244.25	-618.91	241.89	-616.90	0.00	0.00	
4,400.00	9.80	158.65	4,342.80	-634.75	248.08	-632.70	0.00	0.00	
4,500.00	9.80	158.65	4,441.34	-650.60	254.27	-648.49	0.00	0.00	
4,600.00	9.80	158.65	4,539.88	-666.44	260.47	-664.29	0.00	0.00	
4,700.00	9.80	158.65	4,638.42	-682.29	266.66	-680.08	0.00	0.00	
4,800.00	9.80	158.65	4,736.97	-698.14	272.85	-695.88	0.00	0.00	
4,900.00	9.80	158.65	4,835.51	-713.98	279.05	-711.67	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3K-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.00	9.80	158.65	4,934.05	-729.83	285.24	-727.47	0.00	0.00	
5,100.00	9.80	158.65	5,032.59	-745.68	291.43	-743.26	0.00	0.00	
5,200.00	9.80	158.65	5,131.13	-761.52	297.63	-759.05	0.00	0.00	
5,300.00	9.80	158.65	5,229.68	-777.37	303.82	-774.85	0.00	0.00	
5,400.00	9.80	158.65	5,328.22	-793.21	310.01	-790.64	0.00	0.00	
5,500.00	9.80	158.65	5,426.76	-809.06	316.20	-806.44	0.00	0.00	
5,600.00	9.80	158.65	5,525.30	-824.91	322.40	-822.23	0.00	0.00	
5,700.00	9.80	158.65	5,623.84	-840.75	328.59	-838.03	0.00	0.00	
5,800.00	9.80	158.65	5,722.39	-856.60	334.78	-853.82	0.00	0.00	
5,900.00	9.80	158.65	5,820.93	-872.45	340.98	-869.62	0.00	0.00	
6,000.00	9.80	158.65	5,919.47	-888.29	347.17	-885.41	0.00	0.00	
6,100.00	9.80	158.65	6,018.01	-904.14	353.36	-901.21	0.00	0.00	
6,200.00	9.80	158.65	6,116.55	-919.98	359.56	-917.00	0.00	0.00	
6,300.00	9.80	158.65	6,215.10	-935.83	365.75	-932.80	0.00	0.00	
6,400.00	9.80	158.65	6,313.64	-951.68	371.94	-948.59	0.00	0.00	
6,413.95	9.80	158.65	6,327.39	-953.89	372.81	-950.80	0.00	0.00	
6,500.00	4.28	121.47	6,412.79	-962.39	378.22	-959.26	8.00	-6.41	
6,600.00	6.86	32.72	6,512.46	-959.31	384.64	-956.13	8.00	2.58	
6,700.00	14.27	15.09	6,610.71	-942.36	391.09	-939.12	8.00	7.41	
6,800.00	22.09	9.57	6,705.66	-911.88	397.43	-908.59	8.00	7.82	
6,900.00	30.00	6.85	6,795.43	-868.44	403.55	-865.10	8.00	7.91	
7,000.00	37.95	5.19	6,878.30	-812.91	409.33	-809.53	8.00	7.95	
7,100.00	45.91	4.04	6,952.64	-746.36	414.65	-742.93	8.00	7.96	
7,200.00	53.88	3.16	7,017.00	-670.08	419.41	-666.62	8.00	7.97	
7,300.00	61.86	2.44	7,070.14	-585.57	423.52	-582.07	8.00	7.98	
7,400.00	69.84	1.82	7,111.02	-494.46	426.89	-490.94	8.00	7.98	
7,500.00	77.82	1.27	7,138.85	-398.52	429.47	-394.99	8.00	7.98	
7,600.00	85.80	0.74	7,153.08	-299.64	431.20	-296.09	8.00	7.98	
7,652.55	90.00	0.47	7,155.00	-247.14	431.76	-243.59	8.00	7.98	
7,700.00	90.00	0.47	7,155.00	-199.69	432.15	-196.14	0.00	0.00	
7,800.00	90.00	0.47	7,155.00	-99.69	432.98	-96.14	0.00	0.00	
7,900.00	90.00	0.47	7,155.00	0.30	433.80	3.86	0.00	0.00	
8,000.00	90.00	0.47	7,155.00	100.30	434.63	103.86	0.00	0.00	
8,100.00	90.00	0.47	7,155.00	200.30	435.46	203.86	0.00	0.00	
8,200.00	90.00	0.47	7,155.00	300.29	436.28	303.86	0.00	0.00	
8,300.00	90.00	0.47	7,155.00	400.29	437.11	403.86	0.00	0.00	
8,400.00	90.00	0.47	7,155.00	500.29	437.94	503.86	0.00	0.00	
8,500.00	90.00	0.47	7,155.00	600.28	438.76	603.86	0.00	0.00	
8,600.00	90.00	0.47	7,155.00	700.28	439.59	703.86	0.00	0.00	
8,700.00	90.00	0.47	7,155.00	800.28	440.41	803.86	0.00	0.00	
8,800.00	90.00	0.47	7,155.00	900.27	441.24	903.86	0.00	0.00	
8,900.00	90.00	0.47	7,155.00	1,000.27	442.07	1,003.86	0.00	0.00	
9,000.00	90.00	0.47	7,155.00	1,100.27	442.89	1,103.86	0.00	0.00	
9,100.00	90.00	0.47	7,155.00	1,200.26	443.72	1,203.86	0.00	0.00	
9,200.00	90.00	0.47	7,155.00	1,300.26	444.54	1,303.86	0.00	0.00	
9,300.00	90.00	0.47	7,155.00	1,400.26	445.37	1,403.86	0.00	0.00	
9,400.00	90.00	0.47	7,155.00	1,500.25	446.20	1,503.86	0.00	0.00	
9,500.00	90.00	0.47	7,155.00	1,600.25	447.02	1,603.86	0.00	0.00	
9,600.00	90.00	0.47	7,155.00	1,700.25	447.85	1,703.86	0.00	0.00	
9,700.00	90.00	0.47	7,155.00	1,800.24	448.68	1,803.86	0.00	0.00	
9,800.00	90.00	0.47	7,155.00	1,900.24	449.50	1,903.86	0.00	0.00	
9,900.00	90.00	0.47	7,155.00	2,000.24	450.33	2,003.86	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3K-4H-N165 - Slot RUEGGE 3K-
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3K-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,000.00	90.00	0.47	7,155.00	2,100.23	451.15	2,103.86	0.00	0.00	
10,100.00	90.00	0.47	7,155.00	2,200.23	451.98	2,203.86	0.00	0.00	
10,200.00	90.00	0.47	7,155.00	2,300.22	452.81	2,303.86	0.00	0.00	
10,300.00	90.00	0.47	7,155.00	2,400.22	453.63	2,403.86	0.00	0.00	
10,400.00	90.00	0.47	7,155.00	2,500.22	454.46	2,503.86	0.00	0.00	
10,500.00	90.00	0.47	7,155.00	2,600.21	455.29	2,603.86	0.00	0.00	
10,600.00	90.00	0.47	7,155.00	2,700.21	456.11	2,703.86	0.00	0.00	
10,700.00	90.00	0.47	7,155.00	2,800.21	456.94	2,803.86	0.00	0.00	
10,800.00	90.00	0.47	7,155.00	2,900.20	457.76	2,903.86	0.00	0.00	
10,900.00	90.00	0.47	7,155.00	3,000.20	458.59	3,003.86	0.00	0.00	
11,000.00	90.00	0.47	7,155.00	3,100.20	459.42	3,103.86	0.00	0.00	
11,100.00	90.00	0.47	7,155.00	3,200.19	460.24	3,203.86	0.00	0.00	
11,200.00	90.00	0.47	7,155.00	3,300.19	461.07	3,303.86	0.00	0.00	
11,300.00	90.00	0.47	7,155.00	3,400.19	461.89	3,403.86	0.00	0.00	
11,400.00	90.00	0.47	7,155.00	3,500.18	462.72	3,503.86	0.00	0.00	
11,500.00	90.00	0.47	7,155.00	3,600.18	463.55	3,603.86	0.00	0.00	
11,600.00	90.00	0.47	7,155.00	3,700.18	464.37	3,703.86	0.00	0.00	
11,700.00	90.00	0.47	7,155.00	3,800.17	465.20	3,803.86	0.00	0.00	
11,800.00	90.00	0.47	7,155.00	3,900.17	466.03	3,903.86	0.00	0.00	
11,900.00	90.00	0.47	7,155.00	4,000.17	466.85	4,003.86	0.00	0.00	
12,000.00	90.00	0.47	7,155.00	4,100.16	467.68	4,103.86	0.00	0.00	
12,023.82	90.00	0.47	7,155.00	4,123.99	467.87	4,127.69	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RUEGGE 3K-4H-N165 1 - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,155.00	-247.14	431.76	1,271,103.09	3,232,485.03	40.074579	-104.669231
RUEGGE 3K-4H-N165 E - plan hits target center - Point	0.00	0.00	7,155.00	4,123.99	467.87	1,275,474.36	3,232,480.27	40.086578	-104.669102