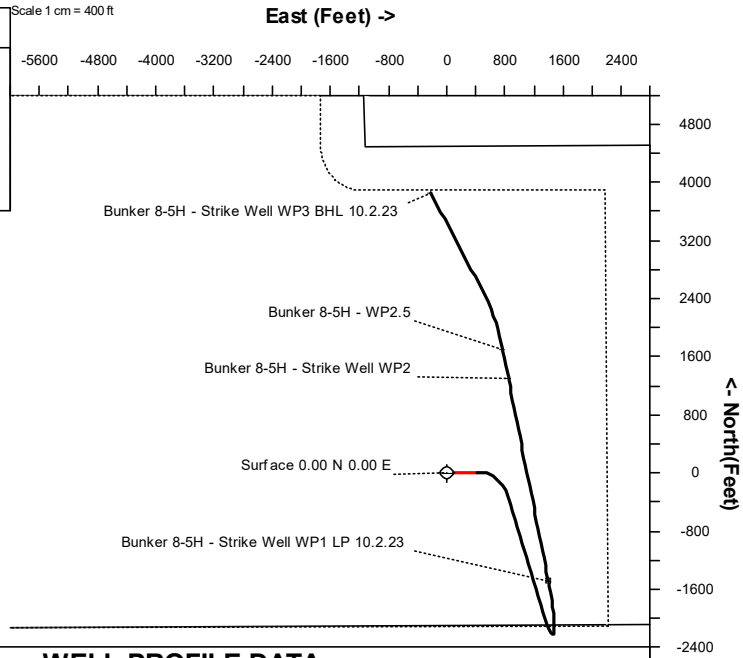


Magpie Operating

Location	DJ Basin	Slot	Bunker 8-5H
Field	Loveland Field	Well	Bunker 8-5H
Installation	Bunker 8 Pad	Wellbore	Bunker 8-5H_Strike Well_10.2.23 (PWB)

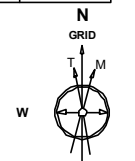
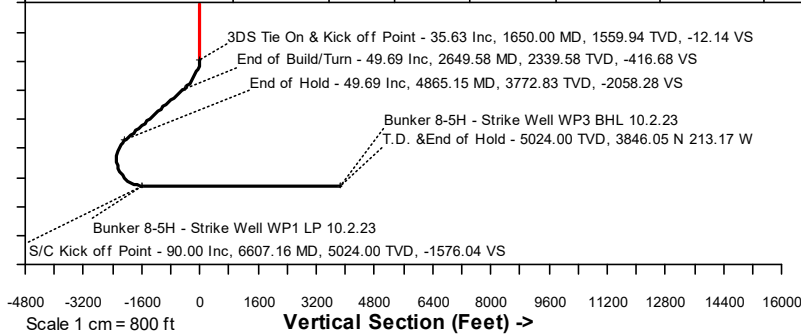
Created by	johnny.musso
Date plotted	2-Oct-2023
Plot reference is Bunker 8-5H_Strike Well_10.2.23 (PWB).	
Ref wellpath is Bunker 8-5H (PWP#1).	
Coordinates are in Feet reference Bunker 8-5H.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig Datum: Planned Datum #1	
Rig Datum to Mean Sea Level: 5014.00 ft.	
Plot North is aligned to GRID North.	



WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
KOP	1650.00	35.63	88.45	1559.94	N 11.60	E 428.77		-12.14
End of Build/Turn	2649.58	49.69	163.15	2339.58	S 369.77	E 857.84	5.00	-416.68
End of Hold	4865.15	49.69	163.15	3772.83	S 1986.74	E 1347.71	0.00	-2058.28
Target Bunker...0.2.23	6607.16	90.00	348.83	5024.00	S 1500.83	E 1400.63	8.00	-1576.04
Target Bunker...II WP2	9452.49	90.00	348.83	5024.00	N 1290.58	E 849.36	0.00	1241.59
End of Turn	9459.28	90.00	349.22	5024.00	N 1297.25	E 848.07	5.80	1248.33
Target Bunker... WP2.5	9869.71	90.00	349.22	5024.00	N 1700.44	E 771.32	0.00	1655.15
End of Turn	10712.74	90.00	332.36	5024.00	N 2493.67	E 494.97	2.00	2462.46
T.D. & Target Bun...23	12239.31	90.00	332.36	5024.00	N 3846.05	W 213.17	0.00	3851.95

<- True Vertical Depth (Feet) 1 cm = 800 ft



Jan-27-2021
EMA-2017 Dip: 06.55 deg Field: 51905.5 nT
Lat: N40 22 9.2280 Long: W 105 15.2280 Elev: 4997.00 ft
Magnetic North is 8.19 deg East of True North
GRID North is 0.30 deg East of True North
To correct azimuth from True to GRID subtract 0.30 deg
To correct azimuth from Magnetic to GRID add 7.89 deg

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-5H Strike Well 10.2.23 (PWB)

Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
Bunker 8-5H	40.36956000	-105.03200772	1377815.3258	3130398.6150	120.22N	0.00E	0.00

Declination		
Date	Source	Time
Aug-16-2023	IGRF-13	12:51
Aug-16-2023	IGRF-13	13:29
Aug-16-2023	IGRF-13	13:37
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:23
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:27
Aug-18-2023	IGRF-13 [1900.0-2025.0]	10:19
Aug-18-2023	IGRF-13 [1900.0-2025.0]	12:03
Jan-27-2021	EMM-2017	11:46
Nov-23-2021	EMM-2017	14:06
Nov-23-2021	EMM-2017	14:10
Aug-11-2023	IGRF-13	07:40
Aug-11-2023	IGRF-13	07:56
Aug-11-2023	IGRF-13	10:05

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Bunker 8 Pad	40.36923000	-105.03201000	1377695.1087	3130398.6150	NAD83 Colorado State Planes, North Zone, US Foot	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
1650.00	35.62	88.45	1559.94	-3454.06	11.60N	428.77E		-12.14
2649.58	49.69	163.15	2339.58	-2674.42	369.77S	857.84E	5.00	-416.68
4865.15	49.69	163.15	3772.83	-1241.17	1986.74S	1347.71E	==>	-2058.28
6607.16	90.00	348.83	5024.00	10.00	1500.83S	1400.63E	8.00	-1576.04
9452.49	90.00	348.83	5024.00	10.00	1290.58N	849.36E	==>	1241.59
9459.28	90.00	349.22	5024.00	10.00	1297.25N	848.07E	5.80	1248.33
9869.71	90.00	349.22	5024.00	10.00	1700.44N	771.32E	==>	1655.15
10712.74	90.00	332.36	5024.00	10.00	2493.67N	494.97E	2.00	2462.46
12239.31	90.00	332.36	5024.00	10.00	3846.05N	213.17W	==>	3851.95

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	
25.00	0.00	0.00	25.00	0.00N	0.00E	==>	0.00	Slot Datum
225.00	0.00	0.00	225.00	0.00N	0.00E	==>	0.00	
325.00	2.50	88.45	324.97	0.06N	2.18E	2.50	-0.06	
425.00	5.00	88.45	424.75	0.24N	8.72E	2.50	-0.25	
525.00	7.50	88.45	524.14	0.53N	19.60E	2.50	-0.56	
625.00	10.00	88.45	622.97	0.94N	34.81E	2.50	-0.99	
725.00	12.50	88.45	721.04	1.47N	54.31E	2.50	-1.54	
825.00	15.00	88.45	818.17	2.11N	78.06E	2.50	-2.21	
925.00	17.50	88.45	914.17	2.87N	106.03E	2.50	-3.00	
1025.00	20.00	88.45	1008.85	3.74N	138.16E	2.50	-3.91	
1125.00	22.50	88.45	1102.05	4.72N	174.39E	2.50	-4.94	
1225.00	25.00	88.45	1193.57	5.81N	214.65E	2.50	-6.08	
1325.00	27.50	88.45	1283.25	7.00N	258.86E	2.50	-7.33	
1425.00	30.00	88.45	1370.92	8.31N	306.93E	2.50	-8.69	
1525.00	32.50	88.45	1456.40	9.71N	358.79E	2.50	-10.16	
1625.00	35.00	88.45	1539.54	11.21N	414.32E	2.50	-11.74	
1650.00	35.62	88.45	1559.94	11.60N	428.77E	==>	-12.14	Sidetrack Tie
1750.00	34.52	96.94	1641.83	8.96N	486.05E	5.00	-17.95	
1850.00	34.04	105.78	1724.51	2.08S	541.14E	5.00	-32.03	
1950.00	34.20	114.70	1807.35	21.45S	593.64E	5.00	-54.27	
2050.00	34.99	123.40	1889.72	49.00S	643.13E	5.00	-84.51	
2150.00	36.37	131.65	1971.00	84.51S	689.25E	5.00	-122.52	
2250.00	38.28	139.28	2050.56	127.71S	731.64E	5.00	-168.01	

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5014.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 356.83 degrees
Bottom hole distance is 3851.95 Feet on azimuth 356.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 2-Oct-2023

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-5H Strike Well 10.2.23 (PWB)

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
2350.00	40.64	146.22	2127.80	178.28S	769.98E	5.00	-220.62	
2450.00	43.37	152.48	2202.14	235.83S	803.97E	5.00	-279.97	
2550.00	46.41	158.10	2273.00	299.93S	833.37E	5.00	-345.59	
2650.00	49.69	163.15	2339.85	370.08S	857.93E	==>	-416.99	
2750.00	49.69	163.15	2404.54	443.06S	880.04E	==>	-491.09	
2850.00	49.69	163.15	2469.23	516.05S	902.15E	==>	-565.18	
2950.00	49.69	163.15	2533.92	589.03S	924.26E	==>	-639.28	
3050.00	49.69	163.15	2598.61	662.01S	946.37E	==>	-713.37	
3150.00	49.69	163.15	2663.30	734.99S	968.48E	==>	-787.46	
3250.00	49.69	163.15	2727.99	807.97S	990.60E	==>	-861.56	
3350.00	49.69	163.15	2792.68	880.96S	1012.71E	==>	-935.65	
3450.00	49.69	163.15	2857.37	953.94S	1034.82E	==>	-1009.74	
3550.00	49.69	163.15	2922.06	1026.92S	1056.93E	==>	-1083.84	
3650.00	49.69	163.15	2986.75	1099.90S	1079.04E	==>	-1157.93	
3750.00	49.69	163.15	3051.44	1172.88S	1101.15E	==>	-1232.03	
3850.00	49.69	163.15	3116.13	1245.87S	1123.26E	==>	-1306.12	
3950.00	49.69	163.15	3180.82	1318.85S	1145.37E	==>	-1380.21	
4050.00	49.69	163.15	3245.51	1391.83S	1167.48E	==>	-1454.31	
4150.00	49.69	163.15	3310.20	1464.81S	1189.59E	==>	-1528.40	
4250.00	49.69	163.15	3374.89	1537.79S	1211.70E	==>	-1602.49	
4350.00	49.69	163.15	3439.58	1610.78S	1233.81E	==>	-1676.59	
4450.00	49.69	163.15	3504.27	1683.76S	1255.92E	==>	-1750.68	
4550.00	49.69	163.15	3568.96	1756.74S	1278.03E	==>	-1824.77	
4650.00	49.69	163.15	3633.65	1829.72S	1300.14E	==>	-1898.87	
4750.00	49.69	163.15	3698.34	1902.70S	1322.25E	==>	-1972.96	
4850.00	49.69	163.15	3763.03	1975.69S	1344.36E	==>	-2047.06	
4950.00	42.99	161.64	3831.37	2045.23S	1366.23E	8.00	-2117.70	
5050.00	35.13	159.28	3908.96	2104.59S	1387.18E	8.00	-2178.14	
5150.00	27.34	155.78	3994.41	2152.52S	1406.82E	8.00	-2227.08	
5250.00	19.69	149.79	4086.05	2188.08S	1424.74E	8.00	-2263.57	
5350.00	12.47	136.98	4182.10	2210.57S	1440.61E	8.00	-2286.91	
5450.00	7.14	100.01	4280.70	2219.56S	1454.12E	8.00	-2296.63	
5550.00	8.58	39.50	4379.91	2214.88S	1465.00E	8.00	-2292.56	
5650.00	14.96	14.73	4477.82	2196.61S	1473.04E	8.00	-2274.76	
5750.00	22.39	5.29	4572.50	2165.11S	1478.09E	8.00	-2243.59	
5850.00	30.10	0.44	4662.14	2120.99S	1480.04E	8.00	-2199.65	
5950.00	37.93	357.44	4744.96	2065.12S	1478.86E	8.00	-2143.80	
6050.00	45.81	355.35	4819.38	1998.58S	1474.58E	8.00	-2077.12	
6150.00	53.71	353.75	4883.93	1922.66S	1467.27E	8.00	-2000.91	
6250.00	61.64	352.44	4937.36	1838.84S	1457.07E	8.00	-1916.66	
6350.00	69.57	351.32	4978.63	1748.76S	1444.19E	8.00	-1826.01	
6450.00	77.51	350.31	5006.94	1654.17S	1428.88E	8.00	-1730.71	
6550.00	85.46	349.36	5021.74	1556.90S	1411.43E	8.00	-1632.63	
6607.16	90.00	348.83	5024.00	1500.83S	1400.63E	8.00	-1576.04	Bunker 8-5H - Strike Well WP1 LP 10.2.23
6650.00	90.00	348.83	5024.00	1458.81S	1392.33E	==>	-1533.63	
6750.00	90.00	348.83	5024.00	1360.70S	1372.95E	==>	-1434.60	
6850.00	90.00	348.83	5024.00	1262.60S	1353.58E	==>	-1335.57	
6950.00	90.00	348.83	5024.00	1164.49S	1334.21E	==>	-1236.54	
7050.00	90.00	348.83	5024.00	1066.39S	1314.83E	==>	-1137.52	
7150.00	90.00	348.83	5024.00	968.28S	1295.46E	==>	-1038.49	
7250.00	90.00	348.83	5024.00	870.18S	1276.08E	==>	-939.46	
7350.00	90.00	348.83	5024.00	772.07S	1256.71E	==>	-840.44	
7450.00	90.00	348.83	5024.00	673.97S	1237.33E	==>	-741.41	
7550.00	90.00	348.83	5024.00	575.86S	1217.96E	==>	-642.38	
7650.00	90.00	348.83	5024.00	477.76S	1198.58E	==>	-543.35	
7750.00	90.00	348.83	5024.00	379.65S	1179.21E	==>	-444.33	
7850.00	90.00	348.83	5024.00	281.55S	1159.84E	==>	-345.30	
7950.00	90.00	348.83	5024.00	183.44S	1140.46E	==>	-246.27	
8050.00	90.00	348.83	5024.00	85.34S	1121.09E	==>	-147.25	
8150.00	90.00	348.83	5024.00	12.77N	1101.71E	==>	-48.22	

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5014.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 356.83 degrees
Bottom hole distance is 3851.95 Feet on azimuth 356.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 2-Oct-2023

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-5H Strike Well 10.2.23 (PWB)

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
8250.00	90.00	348.83	5024.00	110.88N	1082.34E	==>	50.81	
8350.00	90.00	348.83	5024.00	208.98N	1062.96E	==>	149.83	
8450.00	90.00	348.83	5024.00	307.09N	1043.59E	==>	248.86	
8550.00	90.00	348.83	5024.00	405.19N	1024.21E	==>	347.89	
8650.00	90.00	348.83	5024.00	503.30N	1004.84E	==>	446.92	
8750.00	90.00	348.83	5024.00	601.40N	985.47E	==>	545.94	
8850.00	90.00	348.83	5024.00	699.51N	966.09E	==>	644.97	
8950.00	90.00	348.83	5024.00	797.61N	946.72E	==>	744.00	
9050.00	90.00	348.83	5024.00	895.72N	927.34E	==>	843.02	
9150.00	90.00	348.83	5024.00	993.82N	907.97E	==>	942.05	
9250.00	90.00	348.83	5024.00	1091.93N	888.59E	==>	1041.08	
9350.00	90.00	348.83	5024.00	1190.03N	869.22E	==>	1140.11	
9450.00	90.00	348.83	5024.00	1288.14N	849.84E	==>	1239.13	
9452.49	90.00	348.83	5024.00	1290.58N	849.36E	==>	1241.59	Bunker 8-5H - Strike Well WP2
9550.00	90.00	349.22	5024.00	1386.37N	831.11E	==>	1338.25	
9650.00	90.00	349.22	5024.00	1484.60N	812.41E	==>	1437.37	
9750.00	90.00	349.22	5024.00	1582.84N	793.71E	==>	1536.49	
9850.00	90.00	349.22	5024.00	1681.07N	775.01E	==>	1635.61	
9869.71	90.00	349.22	5024.00	1700.44N	771.32E	==>	1655.15	Bunker 8-5H - WP2.5
9950.00	90.00	347.62	5024.00	1779.09N	755.21E	2.00	1734.57	
10050.00	90.00	345.62	5024.00	1876.37N	732.06E	2.00	1832.98	
10150.00	90.00	343.62	5024.00	1972.78N	705.54E	2.00	1930.71	
10250.00	90.00	341.62	5024.00	2068.21N	675.66E	2.00	2027.65	
10350.00	90.00	339.62	5024.00	2162.54N	642.47E	2.00	2123.67	
10450.00	90.00	337.62	5024.00	2255.65N	606.02E	2.00	2218.65	
10550.00	90.00	335.62	5024.00	2347.43N	566.33E	2.00	2312.49	
10650.00	90.00	333.62	5024.00	2437.77N	523.47E	2.00	2405.07	
10750.00	90.00	332.36	5024.00	2526.68N	477.69E	==>	2496.37	
10850.00	90.00	332.36	5024.00	2615.27N	431.30E	==>	2587.39	
10950.00	90.00	332.36	5024.00	2703.86N	384.91E	==>	2678.41	
11050.00	90.00	332.36	5024.00	2792.45N	338.53E	==>	2769.43	
11150.00	90.00	332.36	5024.00	2881.04N	292.14E	==>	2860.45	
11250.00	90.00	332.36	5024.00	2969.63N	245.75E	==>	2951.48	
11350.00	90.00	332.36	5024.00	3058.22N	199.36E	==>	3042.50	
11450.00	90.00	332.36	5024.00	3146.81N	152.97E	==>	3133.52	
11550.00	90.00	332.36	5024.00	3235.40N	106.58E	==>	3224.54	
11650.00	90.00	332.36	5024.00	3323.99N	60.20E	==>	3315.56	
11750.00	90.00	332.36	5024.00	3412.58N	13.81E	==>	3406.58	
11850.00	90.00	332.36	5024.00	3501.16N	32.58W	==>	3497.60	
11950.00	90.00	332.36	5024.00	3589.75N	78.97W	==>	3588.62	
12050.00	90.00	332.36	5024.00	3678.34N	125.36W	==>	3679.64	
12150.00	90.00	332.36	5024.00	3766.93N	171.74W	==>	3770.67	
12179.48	90.00	332.36	5024.00	3793.05N	185.42W	==>	3797.50	
12239.31	90.00	332.36	5024.00	3846.05N	213.17W	==>	3851.95	Bunker 8-5H - Strike Well WP3 BHL 10.2.23

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5014.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 356.83 degrees
Bottom hole distance is 3851.95 Feet on azimuth 356.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 2-Oct-2023

SYSDRILL
Well Design Combined Report
Wellbore: Bunker 8-5H_Strike Well_10.2.23 (PWB)

Casings		
Casing Name	Shoe MD [ft]	Shoe TVD [ft]
9 5/8in Surface Casing	1650.00	1559.94
4 1/2in Production Casing	12179.48	5024.00

Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Bunker 8-5H - Strike Well WP2	1290.58N	849.36E	5024.00	40.37309012	-105.02893500	1379105.85	3131247.94
Bunker 8-5H - WP2.5	1700.44N	771.32E	5024.00	40.37421628	-105.02920727	1379515.69	3131169.90
Bunker 8-5H - Strike Well WP1 LP 10.2.23	1500.83S	1400.63E	5024.00	40.36542000	-105.02701000	1376314.56	3131799.18
Bunker 8-5H - Strike Well WP3 BHL 10.2.23	3846.05N	213.17W	5024.00	40.38012000	-105.03270000	1381661.21	3130185.45

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
1157662	Approved Permit Ensign	1650.00	1559.94	ISCWSA MWD	Rev 4 + AX + SAG + FLT	
1170816	Planned	12239.31	5024.00	ISCWSA MWD	Rev 4	

Notes

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5014.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 356.83 degrees
Bottom hole distance is 3851.95 Feet on azimuth 356.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
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