

BONANZA CREEK ENERGY

WELD COUNTY

SEC 3-T4N-R62W

STATE SEVENTY HOLES 21-24-3HN

OWB

Plan: PROPOSAL 1

Standard Planning Report

10 August, 2022

Project: WELD COUNTY
Site: SEC 3-T4N-R62W
Well: STATE SEVENTY HOLES 21-24-3HN
Wellbore: OWB
Design: PROPOSAL 1

PROJECT DETAILS: WELD COUNTY
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.50°
Magnetic Field
Strength: 51875.2snT
Dip Angle: 66.64°
Date: 5/27/2022
Model: IGRF2020

WELL DETAILS: STATE SEVENTY HOLES 21-24-3HN

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1371911.09	3331347.32	40.348200°N	104.311160°W	

SECTION DETAILS

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	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	650.12	11.00	292.22	646.75	19.91	-48.75	2.00	292.22	-11.63	
4	5523.20	11.00	292.22	5430.26	371.62	-909.71	0.00	0.00	-216.96	
5	6469.43	90.00	177.24	6040.00	-203.98	-989.52	10.00	-114.58	363.94	LP-SSH 21-24-3HN
6	10919.17	90.00	177.24	6040.00	-4648.55	-775.03	0.00	0.00	4712.71	PBHL-SSH 21-24-3HN

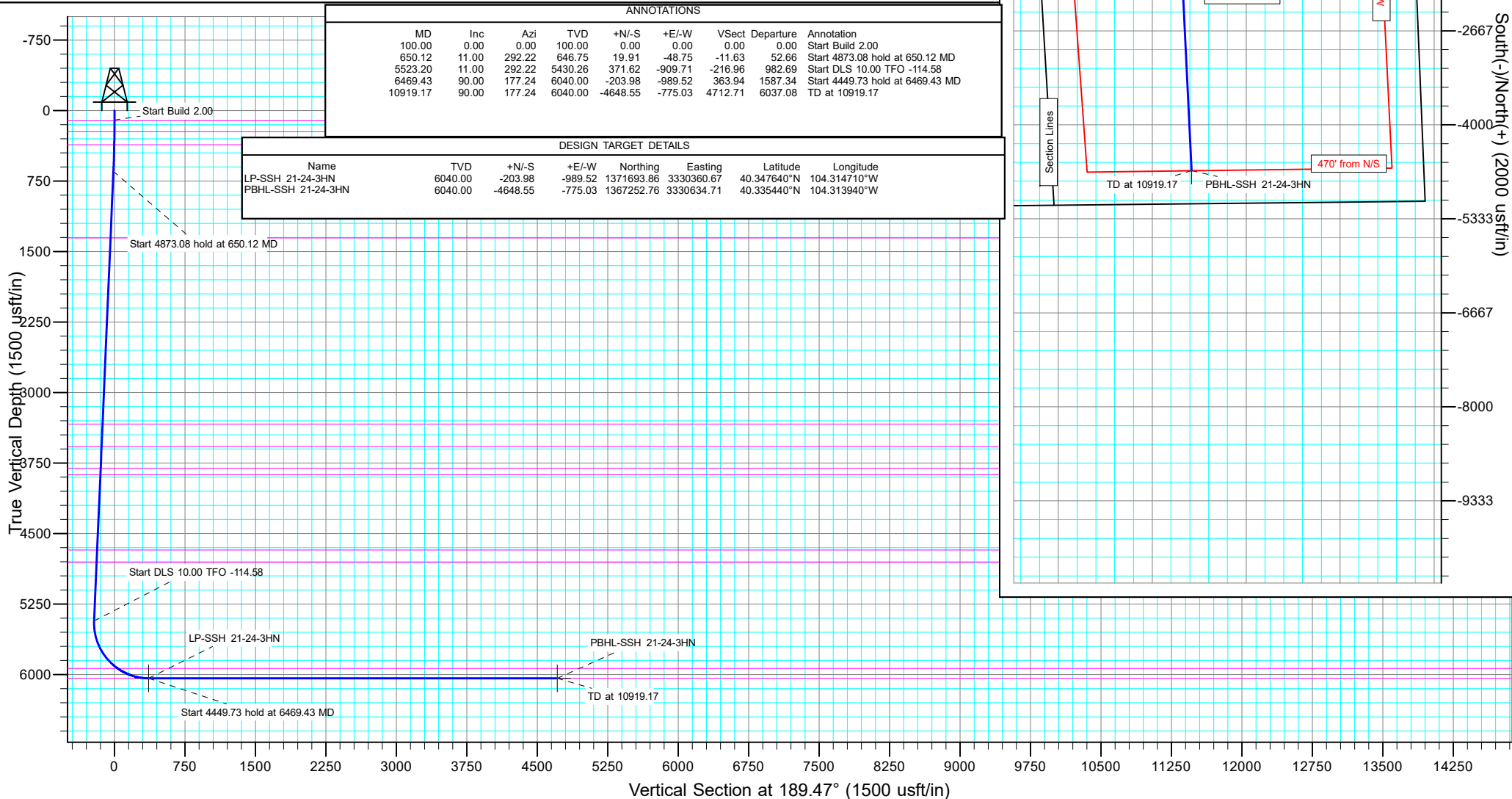
SHL:
286' FNL, 2329' FEL
Sec 3-T4N-R62W
LP:
470' FNL, 2028' FWL
Sec 3-T4N-R62W
BHL:
470' FSL, 1979' FWL
Sec 3-T4N-R62W

ANNOTATIONS

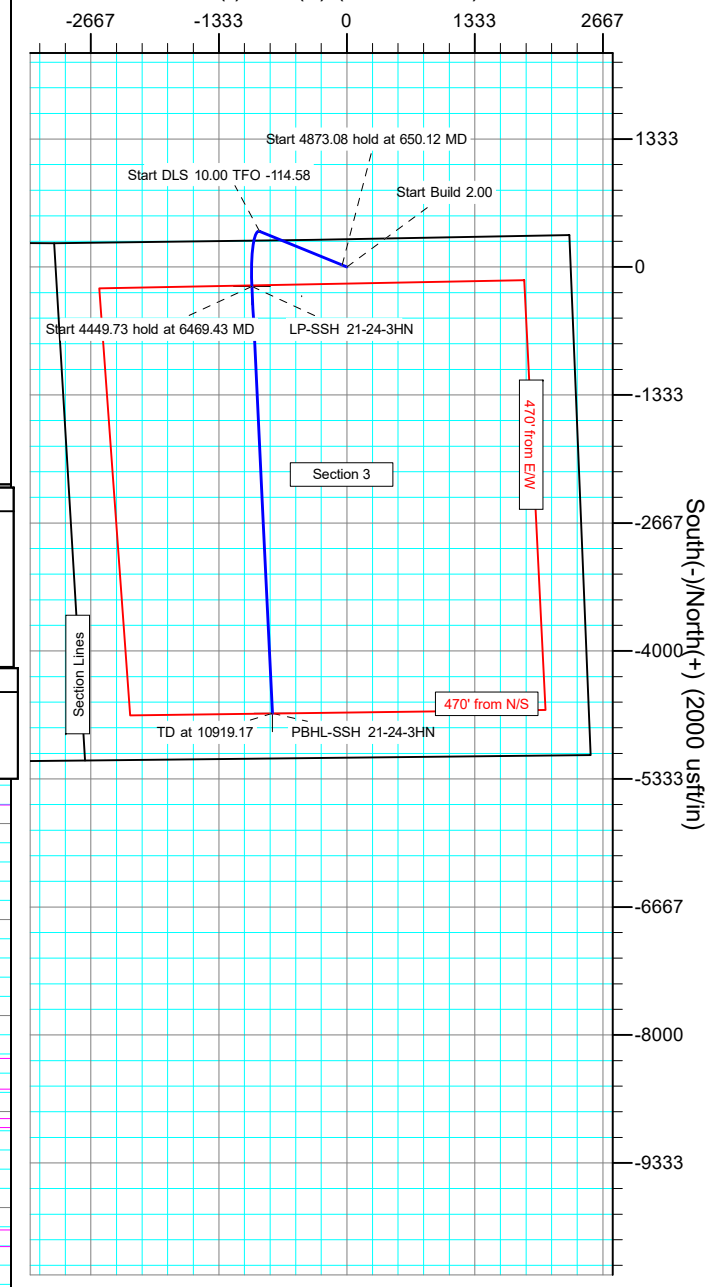
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
650.12	11.00	292.22	646.75	19.91	-48.75	-11.63	52.66	Start 4873.08 hold at 650.12 MD
5523.20	11.00	292.22	5430.26	371.62	-909.71	-216.96	982.69	Start DLS 10.00 TFO -114.58
6469.43	90.00	177.24	6040.00	-203.98	-989.52	363.94	1587.34	Start 4449.73 hold at 6469.43 MD
10919.17	90.00	177.24	6040.00	-4648.55	-775.03	4712.71	6037.08	TD at 10919.17

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP-SSH 21-24-3HN	6040.00	-203.98	-989.52	1371693.86	3330360.67	40.347640°N	104.314710°W
PBHL-SSH 21-24-3HN	6040.00	-4648.55	-775.03	1367252.76	3330634.71	40.335440°N	104.313940°W



West(-)/East(+) (2000 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES 21-24-3HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES 21-24-3HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 3-T4N-R62W			
Site Position:		Northing:	1,372,270.09 usft	Latitude:	40.349100°N
From:	Lat/Long	Easting:	3,333,658.88 usft	Longitude:	104.302850°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.77 °

Well	STATE SEVENTY HOLES 21-24-3HN					
Well Position	+N/-S	-327.78 usft	Northing:	1,371,911.09 usft	Latitude:	40.348200°N
	+E/-W	-2,316.29 usft	Easting:	3,331,347.32 usft	Longitude:	104.311160°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,549.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/27/2022	7.50	66.64	51,875.23913453

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	189.47

Plan Survey Tool Program	Date	8/10/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	10,919.17	PROPOSAL 1 (OWB)	MWD OWSG
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
650.12	11.00	292.22	646.75	19.91	-48.75	2.00	2.00	0.00	292.22	
5,523.20	11.00	292.22	5,430.26	371.62	-909.71	0.00	0.00	0.00	0.00	
6,469.44	90.00	177.24	6,040.00	-203.98	-989.52	10.00	8.35	-12.15	-114.58	LP-SSH 21-24-3HN
10,919.17	90.00	177.24	6,040.00	-4,648.55	-775.03	0.00	0.00	0.00	0.00	PBHL-SSH 21-24-3HI

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES 21-24-3HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES 21-24-3HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
Start Build 2.00									
109.00	0.18	292.22	109.00	0.01	-0.01	0.00	2.00	2.00	0.00
Laramie-Fox Hills Formation									
200.00	2.00	292.22	199.98	0.66	-1.62	-0.39	2.00	2.00	0.00
225.04	2.50	292.22	225.00	1.03	-2.53	-0.60	2.00	2.00	0.00
Pierre Formation									
300.00	4.00	292.22	299.84	2.64	-6.46	-1.54	2.00	2.00	0.00
365.38	5.31	292.22	365.00	4.65	-11.37	-2.71	2.00	2.00	0.00
Upper Pierre aquifer									
400.00	6.00	292.22	399.45	5.93	-14.53	-3.46	2.00	2.00	0.00
500.00	8.00	292.22	498.70	10.54	-25.81	-6.16	2.00	2.00	0.00
600.00	10.00	292.22	597.47	16.46	-40.29	-9.61	2.00	2.00	0.00
650.12	11.00	292.22	646.75	19.91	-48.75	-11.63	2.00	2.00	0.00
Start 4873.08 hold at 650.12 MD									
700.00	11.00	292.22	695.71	23.51	-57.56	-13.73	0.00	0.00	0.00
800.00	11.00	292.22	793.87	30.73	-75.23	-17.94	0.00	0.00	0.00
900.00	11.00	292.22	892.03	37.95	-92.90	-22.15	0.00	0.00	0.00
1,000.00	11.00	292.22	990.19	45.17	-110.56	-26.37	0.00	0.00	0.00
1,100.00	11.00	292.22	1,088.36	52.38	-128.23	-30.58	0.00	0.00	0.00
1,200.00	11.00	292.22	1,186.52	59.60	-145.90	-34.80	0.00	0.00	0.00
1,300.00	11.00	292.22	1,284.68	66.82	-163.57	-39.01	0.00	0.00	0.00
1,371.64	11.00	292.22	1,355.00	71.99	-176.22	-42.03	0.00	0.00	0.00
Base of Upper Pierre aquifer									
1,400.00	11.00	292.22	1,382.84	74.04	-181.23	-43.22	0.00	0.00	0.00
1,500.00	11.00	292.22	1,481.00	81.25	-198.90	-47.44	0.00	0.00	0.00
1,600.00	11.00	292.22	1,579.17	88.47	-216.57	-51.65	0.00	0.00	0.00
1,700.00	11.00	292.22	1,677.33	95.69	-234.24	-55.86	0.00	0.00	0.00
1,800.00	11.00	292.22	1,775.49	102.90	-251.91	-60.08	0.00	0.00	0.00
1,900.00	11.00	292.22	1,873.65	110.12	-269.57	-64.29	0.00	0.00	0.00
2,000.00	11.00	292.22	1,971.81	117.34	-287.24	-68.50	0.00	0.00	0.00
2,100.00	11.00	292.22	2,069.98	124.56	-304.91	-72.72	0.00	0.00	0.00
2,200.00	11.00	292.22	2,168.14	131.77	-322.58	-76.93	0.00	0.00	0.00
2,300.00	11.00	292.22	2,266.30	138.99	-340.24	-81.14	0.00	0.00	0.00
2,400.00	11.00	292.22	2,364.46	146.21	-357.91	-85.36	0.00	0.00	0.00
2,500.00	11.00	292.22	2,462.62	153.43	-375.58	-89.57	0.00	0.00	0.00
2,600.00	11.00	292.22	2,560.78	160.64	-393.25	-93.79	0.00	0.00	0.00
2,700.00	11.00	292.22	2,658.95	167.86	-410.92	-98.00	0.00	0.00	0.00
2,800.00	11.00	292.22	2,757.11	175.08	-428.58	-102.21	0.00	0.00	0.00
2,900.00	11.00	292.22	2,855.27	182.30	-446.25	-106.43	0.00	0.00	0.00
3,000.00	11.00	292.22	2,953.43	189.51	-463.92	-110.64	0.00	0.00	0.00
3,100.00	11.00	292.22	3,051.59	196.73	-481.59	-114.85	0.00	0.00	0.00
3,200.00	11.00	292.22	3,149.76	203.95	-499.25	-119.07	0.00	0.00	0.00
3,300.00	11.00	292.22	3,247.92	211.17	-516.92	-123.28	0.00	0.00	0.00
3,388.71	11.00	292.22	3,335.00	217.57	-532.60	-127.02	0.00	0.00	0.00
Larimer ("Parkman") sandstone									
3,400.00	11.00	292.22	3,346.08	218.38	-534.59	-127.49	0.00	0.00	0.00
3,500.00	11.00	292.22	3,444.24	225.60	-552.26	-131.71	0.00	0.00	0.00
3,600.00	11.00	292.22	3,542.40	232.82	-569.93	-135.92	0.00	0.00	0.00
3,633.21	11.00	292.22	3,575.00	235.21	-575.79	-137.32	0.00	0.00	0.00
Pierre Formation									
3,700.00	11.00	292.22	3,640.57	240.04	-587.59	-140.13	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES 21-24-3HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES 21-24-3HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,800.00	11.00	292.22	3,738.73	247.25	-605.26	-144.35	0.00	0.00	0.00	
3,867.51	11.00	292.22	3,805.00	252.13	-617.19	-147.19	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
3,900.00	11.00	292.22	3,836.89	254.47	-622.93	-148.56	0.00	0.00	0.00	
3,938.82	11.00	292.22	3,875.00	257.27	-629.79	-150.20	0.00	0.00	0.00	
Pierre Formation										
4,000.00	11.00	292.22	3,935.05	261.69	-640.60	-152.78	0.00	0.00	0.00	
4,100.00	11.00	292.22	4,033.21	268.91	-658.26	-156.99	0.00	0.00	0.00	
4,200.00	11.00	292.22	4,131.37	276.12	-675.93	-161.20	0.00	0.00	0.00	
4,300.00	11.00	292.22	4,229.54	283.34	-693.60	-165.42	0.00	0.00	0.00	
4,400.00	11.00	292.22	4,327.70	290.56	-711.27	-169.63	0.00	0.00	0.00	
4,500.00	11.00	292.22	4,425.86	297.77	-728.94	-173.84	0.00	0.00	0.00	
4,600.00	11.00	292.22	4,524.02	304.99	-746.60	-178.06	0.00	0.00	0.00	
4,700.00	11.00	292.22	4,622.18	312.21	-764.27	-182.27	0.00	0.00	0.00	
4,753.80	11.00	292.22	4,675.00	316.09	-773.78	-184.54	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
4,800.00	11.00	292.22	4,720.35	319.43	-781.94	-186.48	0.00	0.00	0.00	
4,886.24	11.00	292.22	4,805.00	325.65	-797.18	-190.12	0.00	0.00	0.00	
Pierre Formation										
4,900.00	11.00	292.22	4,818.51	326.64	-799.61	-190.70	0.00	0.00	0.00	
5,000.00	11.00	292.22	4,916.67	333.86	-817.27	-194.91	0.00	0.00	0.00	
5,100.00	11.00	292.22	5,014.83	341.08	-834.94	-199.13	0.00	0.00	0.00	
5,200.00	11.00	292.22	5,112.99	348.30	-852.61	-203.34	0.00	0.00	0.00	
5,300.00	11.00	292.22	5,211.16	355.51	-870.28	-207.55	0.00	0.00	0.00	
5,400.00	11.00	292.22	5,309.32	362.73	-887.95	-211.77	0.00	0.00	0.00	
5,500.00	11.00	292.22	5,407.48	369.95	-905.61	-215.98	0.00	0.00	0.00	
5,523.20	11.00	292.22	5,430.26	371.62	-909.71	-216.96	0.00	0.00	0.00	
Start DLS 10.00 TFO -114.58										
5,550.00	10.18	278.30	5,456.60	372.93	-914.42	-217.47	10.00	-3.07	-51.94	
5,600.00	10.45	250.14	5,505.82	372.03	-923.07	-215.16	10.00	0.53	-56.33	
5,650.00	12.81	228.04	5,554.82	366.78	-931.46	-208.60	10.00	4.73	-44.20	
5,700.00	16.39	214.05	5,603.21	357.22	-939.53	-197.85	10.00	7.16	-27.98	
5,750.00	20.56	205.27	5,650.63	343.43	-947.23	-182.98	10.00	8.33	-17.56	
5,800.00	25.02	199.42	5,696.72	325.51	-954.50	-164.10	10.00	8.93	-11.69	
5,850.00	29.65	195.27	5,741.13	303.59	-961.28	-141.37	10.00	9.25	-8.29	
5,900.00	34.37	192.17	5,783.52	277.85	-967.52	-114.95	10.00	9.45	-6.21	
5,950.00	39.15	189.74	5,823.57	248.48	-973.17	-85.05	10.00	9.57	-4.86	
6,000.00	43.98	187.76	5,860.97	215.70	-978.18	-51.90	10.00	9.65	-3.95	
6,050.00	48.83	186.10	5,895.44	179.76	-982.53	-15.73	10.00	9.71	-3.32	
6,100.00	53.71	184.67	5,926.71	140.94	-986.17	23.16	10.00	9.75	-2.86	
6,114.24	55.10	184.30	5,935.00	129.40	-987.08	34.69	10.00	9.77	-2.63	
Sharon Springs Member										
6,150.00	58.60	183.41	5,954.55	99.53	-989.09	64.48	10.00	9.78	-2.48	
6,200.00	63.50	182.28	5,978.75	55.85	-991.25	107.93	10.00	9.80	-2.27	
6,250.00	68.41	181.24	5,999.12	10.22	-992.64	153.16	10.00	9.82	-2.08	
6,300.00	73.32	180.26	6,015.51	-36.99	-993.25	199.84	10.00	9.83	-1.95	
6,350.00	78.24	179.34	6,027.79	-85.45	-993.08	247.60	10.00	9.84	-1.85	
6,400.00	83.16	178.45	6,035.86	-134.76	-992.13	296.09	10.00	9.84	-1.78	
6,450.00	88.09	177.57	6,039.68	-184.57	-990.40	344.94	10.00	9.85	-1.75	
6,469.44	90.00	177.24	6,040.00	-203.98	-989.52	363.94	10.00	9.85	-1.74	
Start 4449.73 hold at 6469.43 MD - Niobrara Formation										
6,500.00	90.00	177.24	6,040.00	-234.51	-988.04	393.81	0.00	0.00	0.00	
6,600.00	90.00	177.24	6,040.00	-334.40	-983.22	491.54	0.00	0.00	0.00	

Planning Report

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Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
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Well:	STATE SEVENTY HOLES 21-24-3HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,700.00	90.00	177.24	6,040.00	-434.28	-978.40	589.27	0.00	0.00	0.00
6,800.00	90.00	177.24	6,040.00	-534.17	-973.58	687.00	0.00	0.00	0.00
6,900.00	90.00	177.24	6,040.00	-634.05	-968.76	784.73	0.00	0.00	0.00
7,000.00	90.00	177.24	6,040.00	-733.93	-963.94	882.47	0.00	0.00	0.00
7,100.00	90.00	177.24	6,040.00	-833.82	-959.12	980.20	0.00	0.00	0.00
7,200.00	90.00	177.24	6,040.00	-933.70	-954.30	1,077.93	0.00	0.00	0.00
7,300.00	90.00	177.24	6,040.00	-1,033.58	-949.48	1,175.66	0.00	0.00	0.00
7,400.00	90.00	177.24	6,040.00	-1,133.47	-944.66	1,273.39	0.00	0.00	0.00
7,500.00	90.00	177.24	6,040.00	-1,233.35	-939.84	1,371.12	0.00	0.00	0.00
7,600.00	90.00	177.24	6,040.00	-1,333.24	-935.02	1,468.85	0.00	0.00	0.00
7,700.00	90.00	177.24	6,040.00	-1,433.12	-930.20	1,566.58	0.00	0.00	0.00
7,800.00	90.00	177.24	6,040.00	-1,533.00	-925.38	1,664.31	0.00	0.00	0.00
7,900.00	90.00	177.24	6,040.00	-1,632.89	-920.56	1,762.04	0.00	0.00	0.00
8,000.00	90.00	177.24	6,040.00	-1,732.77	-915.74	1,859.78	0.00	0.00	0.00
8,100.00	90.00	177.24	6,040.00	-1,832.65	-910.92	1,957.51	0.00	0.00	0.00
8,200.00	90.00	177.24	6,040.00	-1,932.54	-906.10	2,055.24	0.00	0.00	0.00
8,300.00	90.00	177.24	6,040.00	-2,032.42	-901.28	2,152.97	0.00	0.00	0.00
8,400.00	90.00	177.24	6,040.00	-2,132.31	-896.46	2,250.70	0.00	0.00	0.00
8,500.00	90.00	177.24	6,040.00	-2,232.19	-891.64	2,348.43	0.00	0.00	0.00
8,600.00	90.00	177.24	6,040.00	-2,332.07	-886.82	2,446.16	0.00	0.00	0.00
8,700.00	90.00	177.24	6,040.00	-2,431.96	-882.00	2,543.89	0.00	0.00	0.00
8,800.00	90.00	177.24	6,040.00	-2,531.84	-877.18	2,641.62	0.00	0.00	0.00
8,900.00	90.00	177.24	6,040.00	-2,631.72	-872.36	2,739.36	0.00	0.00	0.00
9,000.00	90.00	177.24	6,040.00	-2,731.61	-867.54	2,837.09	0.00	0.00	0.00
9,100.00	90.00	177.24	6,040.00	-2,831.49	-862.72	2,934.82	0.00	0.00	0.00
9,200.00	90.00	177.24	6,040.00	-2,931.38	-857.90	3,032.55	0.00	0.00	0.00
9,300.00	90.00	177.24	6,040.00	-3,031.26	-853.08	3,130.28	0.00	0.00	0.00
9,400.00	90.00	177.24	6,040.00	-3,131.14	-848.26	3,228.01	0.00	0.00	0.00
9,500.00	90.00	177.24	6,040.00	-3,231.03	-843.44	3,325.74	0.00	0.00	0.00
9,600.00	90.00	177.24	6,040.00	-3,330.91	-838.62	3,423.47	0.00	0.00	0.00
9,700.00	90.00	177.24	6,040.00	-3,430.79	-833.80	3,521.20	0.00	0.00	0.00
9,800.00	90.00	177.24	6,040.00	-3,530.68	-828.98	3,618.94	0.00	0.00	0.00
9,900.00	90.00	177.24	6,040.00	-3,630.56	-824.15	3,716.67	0.00	0.00	0.00
10,000.00	90.00	177.24	6,040.00	-3,730.45	-819.33	3,814.40	0.00	0.00	0.00
10,100.00	90.00	177.24	6,040.00	-3,830.33	-814.51	3,912.13	0.00	0.00	0.00
10,200.00	90.00	177.24	6,040.00	-3,930.21	-809.69	4,009.86	0.00	0.00	0.00
10,300.00	90.00	177.24	6,040.00	-4,030.10	-804.87	4,107.59	0.00	0.00	0.00
10,400.00	90.00	177.24	6,040.00	-4,129.98	-800.05	4,205.32	0.00	0.00	0.00
10,500.00	90.00	177.24	6,040.00	-4,229.86	-795.23	4,303.05	0.00	0.00	0.00
10,600.00	90.00	177.24	6,040.00	-4,329.75	-790.41	4,400.78	0.00	0.00	0.00
10,700.00	90.00	177.24	6,040.00	-4,429.63	-785.59	4,498.52	0.00	0.00	0.00
10,800.00	90.00	177.24	6,040.00	-4,529.52	-780.77	4,596.25	0.00	0.00	0.00
10,900.00	90.00	177.24	6,040.00	-4,629.40	-775.95	4,693.98	0.00	0.00	0.00
10,919.17	90.00	177.24	6,040.00	-4,648.55	-775.03	4,712.71	0.00	0.00	0.00
TD at 10919.17									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES 21-24-3HN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 25' @ 4574.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4574.00usft
Site:	SEC 3-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES 21-24-3HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP-SSH 21-24-3HN - plan hits target center - Point	0.00	0.00	6,040.00	-203.98	-989.52	1,371,693.86	3,330,360.67	40.347640°N	104.314710°W
PBHL-SSH 21-24-3HN - plan hits target center - Point	0.00	0.00	6,040.00	-4,648.55	-775.03	1,367,252.76	3,330,634.71	40.335440°N	104.313940°W

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
109.00	109.00	Laramie-Fox Hills Formation			
225.04	225.00	Pierre Formation			
365.38	365.00	Upper Pierre aquifer			
1,371.64	1,355.00	Base of Upper Pierre aquifer			
3,388.71	3,335.00	Larimer ("Parkman") sandstone			
3,633.21	3,575.00	Pierre Formation			
3,867.51	3,805.00	Terry ("Sussex") sandstone			
3,938.82	3,875.00	Pierre Formation			
4,753.80	4,675.00	Hygiene ("Shannon") sandstone			
4,886.24	4,805.00	Pierre Formation			
6,114.24	5,935.00	Sharon Springs Member			
6,469.44	6,040.00	Niobrara Formation			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	Start Build 2.00
650.12	646.75	19.91	-48.75	Start 4873.08 hold at 650.12 MD
5,523.20	5,430.26	371.62	-909.71	Start DLS 10.00 TFO -114.58
6,469.44	6,040.00	-203.98	-989.52	Start 4449.73 hold at 6469.43 MD
10,919.17	6,040.00	-4,648.55	-775.03	TD at 10919.17