

BONANZA CREEK ENERGY

WELD COUNTY

SEC 5-T4N-R62W

STATE SEVENTY HOLES U-5-17XRLN

OWB

Plan: PROPOSAL 1

Standard Planning Report

13 December, 2021

Project: WELD COUNTY
Site: SEC 5-T4N-R62W
Well: STATE SEVENTY HOLES U-5-17XRLN
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: 7.58°

Magnetic Field
Strength: 51922.8nT
Dip Angle: 66.65°
Date: 11/29/2021
Model: IGRF2020

WELL DETAILS: STATE SEVENTY HOLES U-5-17XRLN

+N/-S	+E/-W	Northing	Easting	4535.00	Latitude	Longitude	Spot
0.00	0.00	1371471.90	3320420.57		40.347390°N	104.350380°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	1501.89	28.04	64.93	1446.61	142.48	304.54	2.00	64.93	-78.67	
4	6151.47	28.04	64.93	5550.50	1068.62	2284.17	0.00	0.00	-590.06	
5	7153.17	90.00	176.99	6155.00	521.11	2611.72	10.00	109.68	11.92	SEVENTY HOLES U-5-LP
6	12581.52	90.00	176.99	6155.00	-4899.76	2896.66	0.00	0.00	5380.20	SEVENTY HOLES U-5-MID PNT
7	12584.97	90.00	177.06	6155.00	-4903.20	2896.84	2.00	90.00	5383.61	SEVENTY HOLES U-5-MID PNT 1
8	17867.25	90.00	177.06	6155.00	-10178.53	3167.77	0.00	0.00	10606.49	SEVENTY HOLES U-5-MID PNT 1
9	18081.63	90.00	181.35	6155.00	-10392.84	3170.75	2.00	90.00	10817.07	SEVENTY HOLES U-5-PBHL
10	22688.37	90.00	181.35	6155.00	-14998.30	3062.40	0.00	0.00	15307.76	SEVENTY HOLES U-5-PBHL

SHL:
584' FNL, 2631' FWL
Sec 5-T4N-R62W

LP:
50' FNL, 24' FEL
Sec 5-T4N-R62W

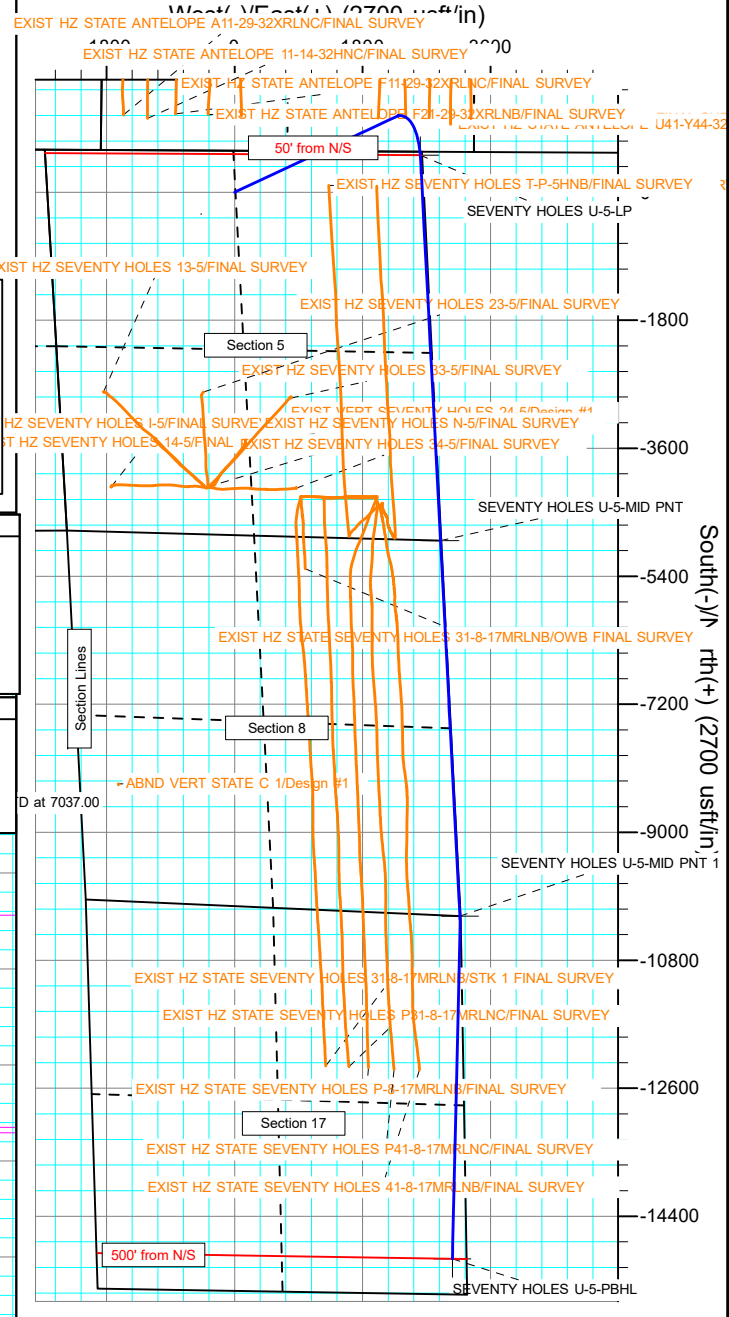
BHL:
500' FSL, 200' FEL
Sec 17-T4N-R62W

ANNOTATIONS

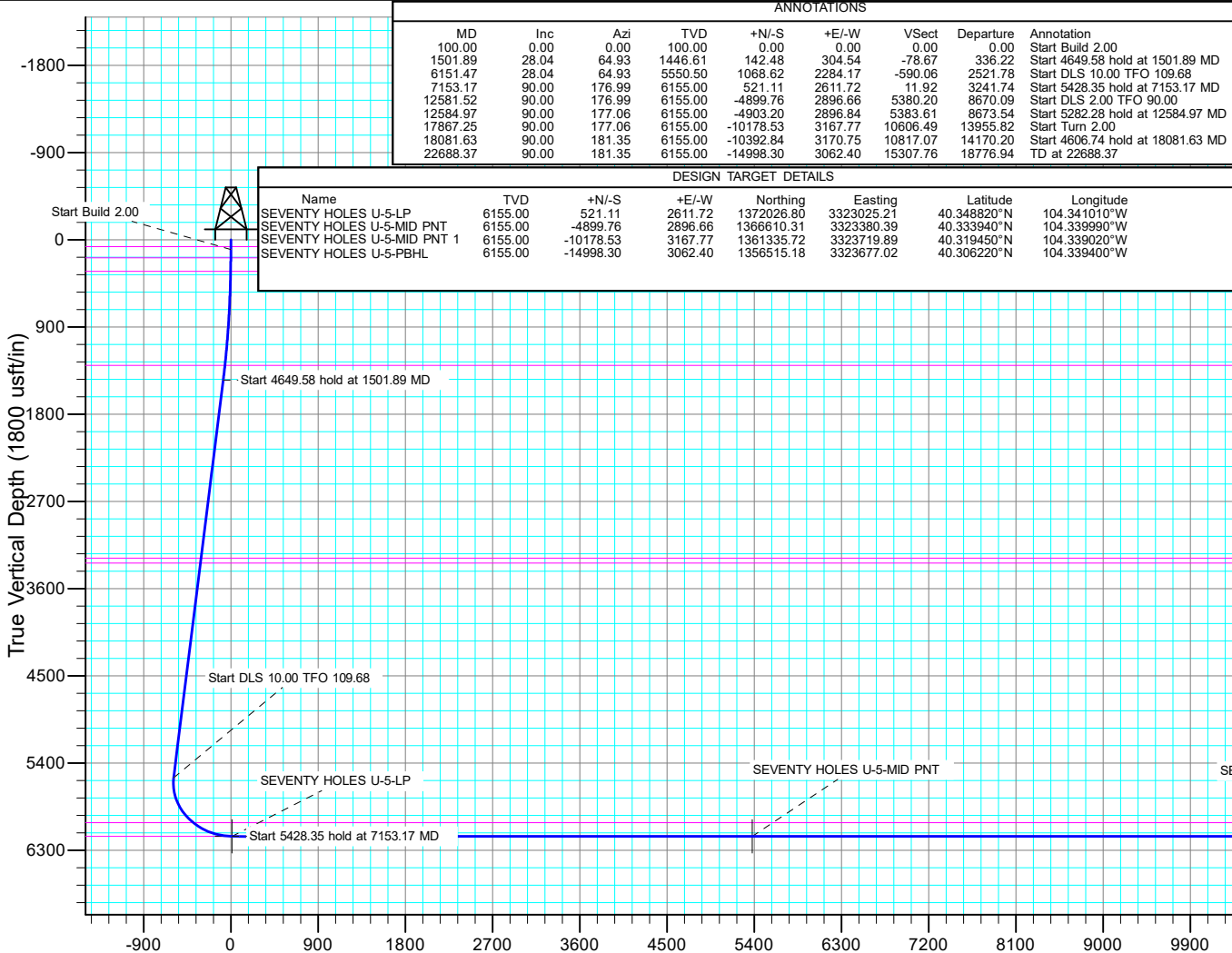
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
1501.89	28.04	64.93	1446.61	142.48	304.54	-78.67	336.22	Start 4649.58 hold at 1501.89 MD
6151.47	28.04	64.93	5550.50	1068.62	2284.17	-590.06	2521.78	Start DLS 10.00 TFO 109.68
7153.17	90.00	176.99	6155.00	521.11	2611.72	11.92	3241.74	Start 5428.35 hold at 7153.17 MD
12581.52	90.00	176.99	6155.00	-4899.76	2896.66	5380.20	8670.09	Start DLS 2.00 TFO 90.00
12584.97	90.00	177.06	6155.00	-4903.20	2896.84	5383.61	8673.54	Start 5282.28 hold at 12584.97 MD
17867.25	90.00	177.06	6155.00	-10178.53	3167.77	10606.49	13955.82	Start Turn 2.00
18081.63	90.00	181.35	6155.00	-10392.84	3170.75	10817.07	14170.20	Start 4606.74 hold at 18081.63 MD
22688.37	90.00	181.35	6155.00	-14998.30	3062.40	15307.76	18776.94	TD at 22688.37

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SEVENTY HOLES U-5-LP	6155.00	521.11	2611.72	1372026.80	3323025.21	40.348820°N	104.341010°W
SEVENTY HOLES U-5-MID PNT	6155.00	-4899.76	2896.66	1366610.31	3323380.39	40.333940°N	104.339990°W
SEVENTY HOLES U-5-MID PNT 1	6155.00	-10178.53	3167.77	1361335.72	3323719.89	40.319450°N	104.339020°W
SEVENTY HOLES U-5-PBHL	6155.00	-14998.30	3062.40	1356515.18	3323677.02	40.306220°N	104.339400°W



South(-)/North(+) (2700 usft/in)



Vertical Section at 168.46° (1800 usft/in)

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES U-5-17XRLN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 24' @ 4559.00usft
Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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 5-T4N-R62W			
Site Position:		Northing:	1,366,684.19 usft	Latitude:	40.334330°N
From:	Lat/Long	Easting:	3,318,123.97 usft	Longitude:	104.358840°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	STATE SEVENTY HOLES U-5-17XRLN					
Well Position	+N/-S	4,757.96 usft	Northing:	1,371,471.90 usft	Latitude:	40.347390°N
	+E/-W	2,358.13 usft	Easting:	3,320,420.57 usft	Longitude:	104.350380°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,535.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	11/29/2021	7.58	66.65	51,922.82497172

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	168.46	

Plan Survey Tool Program	Date	12/13/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	22,687.67	PROPOSAL 1 (OWB)	MWD OWSG	
				OWSG MWD - Standard	

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Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

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	
1,501.89	28.04	64.93	1,446.61	142.48	304.54	2.00	2.00	0.00	64.93	
6,151.47	28.04	64.93	5,550.50	1,068.62	2,284.17	0.00	0.00	0.00	0.00	
7,153.17	90.00	176.99	6,155.00	521.11	2,611.72	10.00	6.19	11.19	109.68	SEVENTY HOLES U-
12,581.52	90.00	176.99	6,155.00	-4,899.76	2,896.66	0.00	0.00	0.00	0.00	SEVENTY HOLES U-
12,584.97	90.00	177.06	6,155.00	-4,903.20	2,896.84	2.00	0.00	2.00	90.00	SEVENTY HOLES U-
17,867.25	90.00	177.06	6,155.00	-10,178.53	3,167.77	0.00	0.00	0.00	0.00	SEVENTY HOLES U-
18,081.63	90.00	181.35	6,155.00	-10,392.84	3,170.75	2.00	0.00	2.00	90.00	SEVENTY HOLES U-
22,688.37	90.00	181.35	6,155.00	-14,998.30	3,062.40	0.00	0.00	0.00	0.00	SEVENTY HOLES U-

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Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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
69.00	0.00	0.00	69.00	0.00	0.00	0.00	0.00	0.00	0.00
Laramie-Fox Hills									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
185.01	1.70	64.93	185.00	0.53	1.14	-0.30	2.00	2.00	0.00
Pierre Shale									
200.00	2.00	64.93	199.98	0.74	1.58	-0.41	2.00	2.00	0.00
300.00	4.00	64.93	299.84	2.96	6.32	-1.63	2.00	2.00	0.00
325.23	4.50	64.93	325.00	3.75	8.02	-2.07	2.00	2.00	0.00
Upper Pierre Aquifer (Pawnee)									
400.00	6.00	64.93	399.45	6.65	14.21	-3.67	2.00	2.00	0.00
500.00	8.00	64.93	498.70	11.81	25.25	-6.52	2.00	2.00	0.00
600.00	10.00	64.93	597.47	18.44	39.42	-10.18	2.00	2.00	0.00
700.00	12.00	64.93	695.62	26.53	56.70	-14.65	2.00	2.00	0.00
800.00	14.00	64.93	793.06	36.06	77.08	-19.91	2.00	2.00	0.00
900.00	16.00	64.93	889.64	47.03	100.52	-25.97	2.00	2.00	0.00
1,000.00	18.00	64.93	985.27	59.42	127.00	-32.81	2.00	2.00	0.00
1,100.00	20.00	64.93	1,079.82	73.21	156.49	-40.43	2.00	2.00	0.00
1,200.00	22.00	64.93	1,173.17	88.40	188.95	-48.81	2.00	2.00	0.00
1,300.00	24.00	64.93	1,265.21	104.95	224.34	-57.95	2.00	2.00	0.00
1,332.69	24.65	64.93	1,295.00	110.66	236.53	-61.10	2.00	2.00	0.00
Pierre Shale									
1,400.00	26.00	64.93	1,355.84	122.86	262.62	-67.84	2.00	2.00	0.00
1,501.89	28.04	64.93	1,446.61	142.48	304.54	-78.67	2.00	2.00	0.00
Start 4649.58 hold at 1501.89 MD									
1,600.00	28.04	64.93	1,533.20	162.02	346.31	-89.46	0.00	0.00	0.00
1,700.00	28.04	64.93	1,621.46	181.94	388.89	-100.46	0.00	0.00	0.00
1,800.00	28.04	64.93	1,709.73	201.86	431.46	-111.46	0.00	0.00	0.00
1,900.00	28.04	64.93	1,797.99	221.77	474.04	-122.46	0.00	0.00	0.00
2,000.00	28.04	64.93	1,886.26	241.69	516.62	-133.46	0.00	0.00	0.00
2,100.00	28.04	64.93	1,974.52	261.61	559.19	-144.45	0.00	0.00	0.00
2,200.00	28.04	64.93	2,062.78	281.53	601.77	-155.45	0.00	0.00	0.00
2,300.00	28.04	64.93	2,151.05	301.45	644.35	-166.45	0.00	0.00	0.00
2,400.00	28.04	64.93	2,239.31	321.37	686.92	-177.45	0.00	0.00	0.00
2,500.00	28.04	64.93	2,327.57	341.29	729.50	-188.45	0.00	0.00	0.00
2,600.00	28.04	64.93	2,415.84	361.21	772.08	-199.45	0.00	0.00	0.00
2,700.00	28.04	64.93	2,504.10	381.13	814.65	-210.45	0.00	0.00	0.00
2,800.00	28.04	64.93	2,592.36	401.04	857.23	-221.44	0.00	0.00	0.00
2,900.00	28.04	64.93	2,680.63	420.96	899.81	-232.44	0.00	0.00	0.00
3,000.00	28.04	64.93	2,768.89	440.88	942.38	-243.44	0.00	0.00	0.00
3,100.00	28.04	64.93	2,857.16	460.80	984.96	-254.44	0.00	0.00	0.00
3,200.00	28.04	64.93	2,945.42	480.72	1,027.54	-265.44	0.00	0.00	0.00
3,300.00	28.04	64.93	3,033.68	500.64	1,070.11	-276.44	0.00	0.00	0.00
3,400.00	28.04	64.93	3,121.95	520.56	1,112.69	-287.44	0.00	0.00	0.00
3,500.00	28.04	64.93	3,210.21	540.48	1,155.27	-298.43	0.00	0.00	0.00
3,584.73	28.04	64.93	3,285.00	557.36	1,191.34	-307.75	0.00	0.00	0.00
Parkman									
3,600.00	28.04	64.93	3,298.47	560.40	1,197.84	-309.43	0.00	0.00	0.00
3,641.38	28.04	64.93	3,335.00	568.64	1,215.46	-313.98	0.00	0.00	0.00
Pierre Shale									
3,700.00	28.04	64.93	3,386.74	580.32	1,240.42	-320.43	0.00	0.00	0.00
3,800.00	28.04	64.93	3,475.00	600.23	1,283.00	-331.43	0.00	0.00	0.00

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Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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)
3,900.00	28.04	64.93	3,563.26	620.15	1,325.57	-342.43	0.00	0.00	0.00
4,000.00	28.04	64.93	3,651.53	640.07	1,368.15	-353.43	0.00	0.00	0.00
4,100.00	28.04	64.93	3,739.79	659.99	1,410.72	-364.43	0.00	0.00	0.00
4,200.00	28.04	64.93	3,828.06	679.91	1,453.30	-375.42	0.00	0.00	0.00
4,300.00	28.04	64.93	3,916.32	699.83	1,495.88	-386.42	0.00	0.00	0.00
4,400.00	28.04	64.93	4,004.58	719.75	1,538.45	-397.42	0.00	0.00	0.00
4,500.00	28.04	64.93	4,092.85	739.67	1,581.03	-408.42	0.00	0.00	0.00
4,600.00	28.04	64.93	4,181.11	759.59	1,623.61	-419.42	0.00	0.00	0.00
4,700.00	28.04	64.93	4,269.37	779.50	1,666.18	-430.42	0.00	0.00	0.00
4,800.00	28.04	64.93	4,357.64	799.42	1,708.76	-441.42	0.00	0.00	0.00
4,900.00	28.04	64.93	4,445.90	819.34	1,751.34	-452.41	0.00	0.00	0.00
5,000.00	28.04	64.93	4,534.17	839.26	1,793.91	-463.41	0.00	0.00	0.00
5,100.00	28.04	64.93	4,622.43	859.18	1,836.49	-474.41	0.00	0.00	0.00
5,200.00	28.04	64.93	4,710.69	879.10	1,879.07	-485.41	0.00	0.00	0.00
5,300.00	28.04	64.93	4,798.96	899.02	1,921.64	-496.41	0.00	0.00	0.00
5,400.00	28.04	64.93	4,887.22	918.94	1,964.22	-507.41	0.00	0.00	0.00
5,500.00	28.04	64.93	4,975.48	938.86	2,006.80	-518.41	0.00	0.00	0.00
5,600.00	28.04	64.93	5,063.75	958.78	2,049.37	-529.40	0.00	0.00	0.00
5,700.00	28.04	64.93	5,152.01	978.69	2,091.95	-540.40	0.00	0.00	0.00
5,800.00	28.04	64.93	5,240.27	998.61	2,134.53	-551.40	0.00	0.00	0.00
5,900.00	28.04	64.93	5,328.54	1,018.53	2,177.10	-562.40	0.00	0.00	0.00
6,000.00	28.04	64.93	5,416.80	1,038.45	2,219.68	-573.40	0.00	0.00	0.00
6,100.00	28.04	64.93	5,505.07	1,058.37	2,262.26	-584.40	0.00	0.00	0.00
6,151.47	28.04	64.93	5,550.50	1,068.62	2,284.17	-590.06	0.00	0.00	0.00
Start DLS 10.00 TFO 109.68									
6,200.00	26.76	75.12	5,593.60	1,076.27	2,305.07	-593.37	10.00	-2.62	20.99
6,250.00	26.27	86.27	5,638.37	1,079.88	2,327.01	-592.52	10.00	-0.99	22.32
6,300.00	26.65	97.48	5,683.16	1,079.14	2,349.19	-587.36	10.00	0.77	22.40
6,350.00	27.88	108.07	5,727.63	1,074.05	2,371.43	-577.92	10.00	2.45	21.19
6,400.00	29.84	117.62	5,771.44	1,064.65	2,393.58	-564.28	10.00	3.92	19.09
6,450.00	32.40	125.94	5,814.26	1,051.02	2,415.46	-546.54	10.00	5.12	16.64
6,500.00	35.43	133.07	5,855.77	1,033.24	2,436.91	-524.84	10.00	6.07	14.27
6,550.00	38.83	139.16	5,895.64	1,011.47	2,457.76	-499.34	10.00	6.79	12.18
6,600.00	42.49	144.39	5,933.58	985.87	2,477.85	-470.23	10.00	7.33	10.45
6,650.00	46.36	148.91	5,969.29	956.63	2,497.04	-437.74	10.00	7.74	9.05
6,700.00	50.39	152.88	6,002.50	923.97	2,515.17	-402.12	10.00	8.05	7.93
6,719.95	52.03	154.34	6,015.00	910.04	2,522.08	-387.09	10.00	8.23	7.29
Sharon Springs									
6,750.00	54.54	156.41	6,032.96	888.15	2,532.11	-363.63	10.00	8.34	6.89
6,800.00	58.78	159.58	6,060.45	849.43	2,547.73	-322.57	10.00	8.48	6.35
6,850.00	63.09	162.48	6,084.74	808.11	2,561.91	-279.25	10.00	8.62	5.80
6,900.00	67.45	165.17	6,105.65	764.50	2,574.54	-234.00	10.00	8.73	5.37
6,950.00	71.86	167.68	6,123.04	718.94	2,585.52	-187.16	10.00	8.81	5.04
7,000.00	76.30	170.08	6,136.75	671.78	2,594.78	-139.10	10.00	8.88	4.79
7,050.00	80.76	172.38	6,146.69	623.36	2,602.24	-90.17	10.00	8.92	4.61
7,100.00	85.23	174.63	6,152.79	574.07	2,607.84	-40.75	10.00	8.95	4.50
7,153.17	90.00	176.99	6,155.00	521.11	2,611.72	11.92	10.00	8.96	4.44
Start 5428.35 hold at 7153.17 MD - Niobrara									
7,200.00	90.00	176.99	6,155.00	474.34	2,614.18	58.23	0.00	0.00	0.00
7,300.00	90.00	176.99	6,155.00	374.48	2,619.43	157.12	0.00	0.00	0.00
7,400.00	90.00	176.99	6,155.00	274.62	2,624.68	256.02	0.00	0.00	0.00
7,500.00	90.00	176.99	6,155.00	174.76	2,629.93	354.91	0.00	0.00	0.00
7,600.00	90.00	176.99	6,155.00	74.89	2,635.18	453.80	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES U-5-17XRLN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 24' @ 4559.00usft
Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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)
7,700.00	90.00	176.99	6,155.00	-24.97	2,640.43	552.70	0.00	0.00	0.00
7,800.00	90.00	176.99	6,155.00	-124.83	2,645.67	651.59	0.00	0.00	0.00
7,900.00	90.00	176.99	6,155.00	-224.69	2,650.92	750.48	0.00	0.00	0.00
8,000.00	90.00	176.99	6,155.00	-324.56	2,656.17	849.38	0.00	0.00	0.00
8,100.00	90.00	176.99	6,155.00	-424.42	2,661.42	948.27	0.00	0.00	0.00
8,200.00	90.00	176.99	6,155.00	-524.28	2,666.67	1,047.16	0.00	0.00	0.00
8,300.00	90.00	176.99	6,155.00	-624.14	2,671.92	1,146.06	0.00	0.00	0.00
8,400.00	90.00	176.99	6,155.00	-724.00	2,677.17	1,244.95	0.00	0.00	0.00
8,500.00	90.00	176.99	6,155.00	-823.87	2,682.42	1,343.84	0.00	0.00	0.00
8,600.00	90.00	176.99	6,155.00	-923.73	2,687.67	1,442.74	0.00	0.00	0.00
8,700.00	90.00	176.99	6,155.00	-1,023.59	2,692.92	1,541.63	0.00	0.00	0.00
8,800.00	90.00	176.99	6,155.00	-1,123.45	2,698.17	1,640.52	0.00	0.00	0.00
8,900.00	90.00	176.99	6,155.00	-1,223.31	2,703.41	1,739.42	0.00	0.00	0.00
9,000.00	90.00	176.99	6,155.00	-1,323.18	2,708.66	1,838.31	0.00	0.00	0.00
9,100.00	90.00	176.99	6,155.00	-1,423.04	2,713.91	1,937.20	0.00	0.00	0.00
9,200.00	90.00	176.99	6,155.00	-1,522.90	2,719.16	2,036.10	0.00	0.00	0.00
9,300.00	90.00	176.99	6,155.00	-1,622.76	2,724.41	2,134.99	0.00	0.00	0.00
9,400.00	90.00	176.99	6,155.00	-1,722.63	2,729.66	2,233.89	0.00	0.00	0.00
9,500.00	90.00	176.99	6,155.00	-1,822.49	2,734.91	2,332.78	0.00	0.00	0.00
9,600.00	90.00	176.99	6,155.00	-1,922.35	2,740.16	2,431.67	0.00	0.00	0.00
9,700.00	90.00	176.99	6,155.00	-2,022.21	2,745.41	2,530.57	0.00	0.00	0.00
9,800.00	90.00	176.99	6,155.00	-2,122.07	2,750.66	2,629.46	0.00	0.00	0.00
9,900.00	90.00	176.99	6,155.00	-2,221.94	2,755.91	2,728.35	0.00	0.00	0.00
10,000.00	90.00	176.99	6,155.00	-2,321.80	2,761.16	2,827.25	0.00	0.00	0.00
10,100.00	90.00	176.99	6,155.00	-2,421.66	2,766.40	2,926.14	0.00	0.00	0.00
10,200.00	90.00	176.99	6,155.00	-2,521.52	2,771.65	3,025.03	0.00	0.00	0.00
10,300.00	90.00	176.99	6,155.00	-2,621.38	2,776.90	3,123.93	0.00	0.00	0.00
10,400.00	90.00	176.99	6,155.00	-2,721.25	2,782.15	3,222.82	0.00	0.00	0.00
10,500.00	90.00	176.99	6,155.00	-2,821.11	2,787.40	3,321.71	0.00	0.00	0.00
10,600.00	90.00	176.99	6,155.00	-2,920.97	2,792.65	3,420.61	0.00	0.00	0.00
10,700.00	90.00	176.99	6,155.00	-3,020.83	2,797.90	3,519.50	0.00	0.00	0.00
10,800.00	90.00	176.99	6,155.00	-3,120.70	2,803.15	3,618.39	0.00	0.00	0.00
10,900.00	90.00	176.99	6,155.00	-3,220.56	2,808.40	3,717.29	0.00	0.00	0.00
11,000.00	90.00	176.99	6,155.00	-3,320.42	2,813.65	3,816.18	0.00	0.00	0.00
11,100.00	90.00	176.99	6,155.00	-3,420.28	2,818.90	3,915.07	0.00	0.00	0.00
11,200.00	90.00	176.99	6,155.00	-3,520.14	2,824.15	4,013.97	0.00	0.00	0.00
11,300.00	90.00	176.99	6,155.00	-3,620.01	2,829.39	4,112.86	0.00	0.00	0.00
11,400.00	90.00	176.99	6,155.00	-3,719.87	2,834.64	4,211.76	0.00	0.00	0.00
11,500.00	90.00	176.99	6,155.00	-3,819.73	2,839.89	4,310.65	0.00	0.00	0.00
11,600.00	90.00	176.99	6,155.00	-3,919.59	2,845.14	4,409.54	0.00	0.00	0.00
11,700.00	90.00	176.99	6,155.00	-4,019.45	2,850.39	4,508.44	0.00	0.00	0.00
11,800.00	90.00	176.99	6,155.00	-4,119.32	2,855.64	4,607.33	0.00	0.00	0.00
11,900.00	90.00	176.99	6,155.00	-4,219.18	2,860.89	4,706.22	0.00	0.00	0.00
12,000.00	90.00	176.99	6,155.00	-4,319.04	2,866.14	4,805.12	0.00	0.00	0.00
12,100.00	90.00	176.99	6,155.00	-4,418.90	2,871.39	4,904.01	0.00	0.00	0.00
12,200.00	90.00	176.99	6,155.00	-4,518.77	2,876.64	5,002.90	0.00	0.00	0.00
12,300.00	90.00	176.99	6,155.00	-4,618.63	2,881.89	5,101.80	0.00	0.00	0.00
12,400.00	90.00	176.99	6,155.00	-4,718.49	2,887.14	5,200.69	0.00	0.00	0.00
12,500.00	90.00	176.99	6,155.00	-4,818.35	2,892.38	5,299.58	0.00	0.00	0.00
12,581.52	90.00	176.99	6,155.00	-4,899.76	2,896.66	5,380.20	0.00	0.00	0.00
Start DLS 2.00 TFO 90.00									
12,584.97	90.00	177.06	6,155.00	-4,903.20	2,896.84	5,383.61	2.00	0.00	2.00
Start 5282.28 hold at 12584.97 MD									
12,600.00	90.00	177.06	6,155.00	-4,918.21	2,897.61	5,398.47	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES U-5-17XRLN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 24' @ 4559.00usft
Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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)	
12,700.00	90.00	177.06	6,155.00	-5,018.08	2,902.74	5,497.35	0.00	0.00	0.00	
12,800.00	90.00	177.06	6,155.00	-5,117.95	2,907.87	5,596.23	0.00	0.00	0.00	
12,900.00	90.00	177.06	6,155.00	-5,217.82	2,913.00	5,695.10	0.00	0.00	0.00	
13,000.00	90.00	177.06	6,155.00	-5,317.69	2,918.13	5,793.98	0.00	0.00	0.00	
13,100.00	90.00	177.06	6,155.00	-5,417.56	2,923.26	5,892.85	0.00	0.00	0.00	
13,200.00	90.00	177.06	6,155.00	-5,517.43	2,928.39	5,991.73	0.00	0.00	0.00	
13,300.00	90.00	177.06	6,155.00	-5,617.29	2,933.52	6,090.60	0.00	0.00	0.00	
13,400.00	90.00	177.06	6,155.00	-5,717.16	2,938.65	6,189.48	0.00	0.00	0.00	
13,500.00	90.00	177.06	6,155.00	-5,817.03	2,943.77	6,288.35	0.00	0.00	0.00	
13,600.00	90.00	177.06	6,155.00	-5,916.90	2,948.90	6,387.23	0.00	0.00	0.00	
13,700.00	90.00	177.06	6,155.00	-6,016.77	2,954.03	6,486.11	0.00	0.00	0.00	
13,800.00	90.00	177.06	6,155.00	-6,116.64	2,959.16	6,584.98	0.00	0.00	0.00	
13,900.00	90.00	177.06	6,155.00	-6,216.50	2,964.29	6,683.86	0.00	0.00	0.00	
14,000.00	90.00	177.06	6,155.00	-6,316.37	2,969.42	6,782.73	0.00	0.00	0.00	
14,100.00	90.00	177.06	6,155.00	-6,416.24	2,974.55	6,881.61	0.00	0.00	0.00	
14,200.00	90.00	177.06	6,155.00	-6,516.11	2,979.68	6,980.48	0.00	0.00	0.00	
14,300.00	90.00	177.06	6,155.00	-6,615.98	2,984.81	7,079.36	0.00	0.00	0.00	
14,400.00	90.00	177.06	6,155.00	-6,715.85	2,989.93	7,178.23	0.00	0.00	0.00	
14,500.00	90.00	177.06	6,155.00	-6,815.71	2,995.06	7,277.11	0.00	0.00	0.00	
14,600.00	90.00	177.06	6,155.00	-6,915.58	3,000.19	7,375.99	0.00	0.00	0.00	
14,700.00	90.00	177.06	6,155.00	-7,015.45	3,005.32	7,474.86	0.00	0.00	0.00	
14,800.00	90.00	177.06	6,155.00	-7,115.32	3,010.45	7,573.74	0.00	0.00	0.00	
14,900.00	90.00	177.06	6,155.00	-7,215.19	3,015.58	7,672.61	0.00	0.00	0.00	
15,000.00	90.00	177.06	6,155.00	-7,315.06	3,020.71	7,771.49	0.00	0.00	0.00	
15,100.00	90.00	177.06	6,155.00	-7,414.92	3,025.84	7,870.36	0.00	0.00	0.00	
15,200.00	90.00	177.06	6,155.00	-7,514.79	3,030.97	7,969.24	0.00	0.00	0.00	
15,300.00	90.00	177.06	6,155.00	-7,614.66	3,036.10	8,068.12	0.00	0.00	0.00	
15,400.00	90.00	177.06	6,155.00	-7,714.53	3,041.22	8,166.99	0.00	0.00	0.00	
15,500.00	90.00	177.06	6,155.00	-7,814.40	3,046.35	8,265.87	0.00	0.00	0.00	
15,600.00	90.00	177.06	6,155.00	-7,914.27	3,051.48	8,364.74	0.00	0.00	0.00	
15,700.00	90.00	177.06	6,155.00	-8,014.13	3,056.61	8,463.62	0.00	0.00	0.00	
15,800.00	90.00	177.06	6,155.00	-8,114.00	3,061.74	8,562.49	0.00	0.00	0.00	
15,900.00	90.00	177.06	6,155.00	-8,213.87	3,066.87	8,661.37	0.00	0.00	0.00	
16,000.00	90.00	177.06	6,155.00	-8,313.74	3,072.00	8,760.24	0.00	0.00	0.00	
16,100.00	90.00	177.06	6,155.00	-8,413.61	3,077.13	8,859.12	0.00	0.00	0.00	
16,200.00	90.00	177.06	6,155.00	-8,513.48	3,082.26	8,958.00	0.00	0.00	0.00	
16,300.00	90.00	177.06	6,155.00	-8,613.34	3,087.39	9,056.87	0.00	0.00	0.00	
16,400.00	90.00	177.06	6,155.00	-8,713.21	3,092.51	9,155.75	0.00	0.00	0.00	
16,500.00	90.00	177.06	6,155.00	-8,813.08	3,097.64	9,254.62	0.00	0.00	0.00	
16,600.00	90.00	177.06	6,155.00	-8,912.95	3,102.77	9,353.50	0.00	0.00	0.00	
16,700.00	90.00	177.06	6,155.00	-9,012.82	3,107.90	9,452.37	0.00	0.00	0.00	
16,800.00	90.00	177.06	6,155.00	-9,112.69	3,113.03	9,551.25	0.00	0.00	0.00	
16,900.00	90.00	177.06	6,155.00	-9,212.56	3,118.16	9,650.12	0.00	0.00	0.00	
17,000.00	90.00	177.06	6,155.00	-9,312.42	3,123.29	9,749.00	0.00	0.00	0.00	
17,100.00	90.00	177.06	6,155.00	-9,412.29	3,128.42	9,847.88	0.00	0.00	0.00	
17,200.00	90.00	177.06	6,155.00	-9,512.16	3,133.55	9,946.75	0.00	0.00	0.00	
17,300.00	90.00	177.06	6,155.00	-9,612.03	3,138.68	10,045.63	0.00	0.00	0.00	
17,400.00	90.00	177.06	6,155.00	-9,711.90	3,143.80	10,144.50	0.00	0.00	0.00	
17,500.00	90.00	177.06	6,155.00	-9,811.77	3,148.93	10,243.38	0.00	0.00	0.00	
17,600.00	90.00	177.06	6,155.00	-9,911.63	3,154.06	10,342.25	0.00	0.00	0.00	
17,700.00	90.00	177.06	6,155.00	-10,011.50	3,159.19	10,441.13	0.00	0.00	0.00	
17,800.00	90.00	177.06	6,155.00	-10,111.37	3,164.32	10,540.00	0.00	0.00	0.00	
17,867.25	90.00	177.06	6,155.00	-10,178.53	3,167.77	10,606.49	0.00	0.00	0.00	
Start Turn 2.00										

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES U-5-17XRLN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 24' @ 4559.00usft
Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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)
17,900.00	90.00	177.72	6,155.00	-10,211.25	3,169.26	10,638.85	2.00	0.00	2.00
18,000.00	90.00	179.72	6,155.00	-10,311.22	3,171.50	10,737.25	2.00	0.00	2.00
18,081.63	90.00	181.35	6,155.00	-10,392.84	3,170.75	10,817.07	2.00	0.00	2.00
Start 4606.74 hold at 18081.63 MD									
18,100.00	90.00	181.35	6,155.00	-10,411.21	3,170.32	10,834.98	0.00	0.00	0.00
18,200.00	90.00	181.35	6,155.00	-10,511.18	3,167.96	10,932.46	0.00	0.00	0.00
18,300.00	90.00	181.35	6,155.00	-10,611.15	3,165.61	11,029.94	0.00	0.00	0.00
18,400.00	90.00	181.35	6,155.00	-10,711.12	3,163.26	11,127.42	0.00	0.00	0.00
18,500.00	90.00	181.35	6,155.00	-10,811.10	3,160.91	11,224.90	0.00	0.00	0.00
18,600.00	90.00	181.35	6,155.00	-10,911.07	3,158.56	11,322.38	0.00	0.00	0.00
18,700.00	90.00	181.35	6,155.00	-11,011.04	3,156.20	11,419.86	0.00	0.00	0.00
18,800.00	90.00	181.35	6,155.00	-11,111.01	3,153.85	11,517.34	0.00	0.00	0.00
18,900.00	90.00	181.35	6,155.00	-11,210.99	3,151.50	11,614.83	0.00	0.00	0.00
19,000.00	90.00	181.35	6,155.00	-11,310.96	3,149.15	11,712.31	0.00	0.00	0.00
19,100.00	90.00	181.35	6,155.00	-11,410.93	3,146.80	11,809.79	0.00	0.00	0.00
19,200.00	90.00	181.35	6,155.00	-11,510.90	3,144.44	11,907.27	0.00	0.00	0.00
19,300.00	90.00	181.35	6,155.00	-11,610.87	3,142.09	12,004.75	0.00	0.00	0.00
19,400.00	90.00	181.35	6,155.00	-11,710.85	3,139.74	12,102.23	0.00	0.00	0.00
19,500.00	90.00	181.35	6,155.00	-11,810.82	3,137.39	12,199.71	0.00	0.00	0.00
19,600.00	90.00	181.35	6,155.00	-11,910.79	3,135.04	12,297.19	0.00	0.00	0.00
19,700.00	90.00	181.35	6,155.00	-12,010.76	3,132.68	12,394.67	0.00	0.00	0.00
19,800.00	90.00	181.35	6,155.00	-12,110.74	3,130.33	12,492.15	0.00	0.00	0.00
19,900.00	90.00	181.35	6,155.00	-12,210.71	3,127.98	12,589.63	0.00	0.00	0.00
20,000.00	90.00	181.35	6,155.00	-12,310.68	3,125.63	12,687.11	0.00	0.00	0.00
20,100.00	90.00	181.35	6,155.00	-12,410.65	3,123.28	12,784.60	0.00	0.00	0.00
20,200.00	90.00	181.35	6,155.00	-12,510.63	3,120.93	12,882.08	0.00	0.00	0.00
20,300.00	90.00	181.35	6,155.00	-12,610.60	3,118.57	12,979.56	0.00	0.00	0.00
20,400.00	90.00	181.35	6,155.00	-12,710.57	3,116.22	13,077.04	0.00	0.00	0.00
20,500.00	90.00	181.35	6,155.00	-12,810.54	3,113.87	13,174.52	0.00	0.00	0.00
20,600.00	90.00	181.35	6,155.00	-12,910.51	3,111.52	13,272.00	0.00	0.00	0.00
20,700.00	90.00	181.35	6,155.00	-13,010.49	3,109.17	13,369.48	0.00	0.00	0.00
20,800.00	90.00	181.35	6,155.00	-13,110.46	3,106.81	13,466.96	0.00	0.00	0.00
20,900.00	90.00	181.35	6,155.00	-13,210.43	3,104.46	13,564.44	0.00	0.00	0.00
21,000.00	90.00	181.35	6,155.00	-13,310.40	3,102.11	13,661.92	0.00	0.00	0.00
21,100.00	90.00	181.35	6,155.00	-13,410.38	3,099.76	13,759.40	0.00	0.00	0.00
21,200.00	90.00	181.35	6,155.00	-13,510.35	3,097.41	13,856.88	0.00	0.00	0.00
21,300.00	90.00	181.35	6,155.00	-13,610.32	3,095.05	13,954.37	0.00	0.00	0.00
21,400.00	90.00	181.35	6,155.00	-13,710.29	3,092.70	14,051.85	0.00	0.00	0.00
21,500.00	90.00	181.35	6,155.00	-13,810.27	3,090.35	14,149.33	0.00	0.00	0.00
21,600.00	90.00	181.35	6,155.00	-13,910.24	3,088.00	14,246.81	0.00	0.00	0.00
21,700.00	90.00	181.35	6,155.00	-14,010.21	3,085.65	14,344.29	0.00	0.00	0.00
21,800.00	90.00	181.35	6,155.00	-14,110.18	3,083.30	14,441.77	0.00	0.00	0.00
21,900.00	90.00	181.35	6,155.00	-14,210.16	3,080.94	14,539.25	0.00	0.00	0.00
22,000.00	90.00	181.35	6,155.00	-14,310.13	3,078.59	14,636.73	0.00	0.00	0.00
22,100.00	90.00	181.35	6,155.00	-14,410.10	3,076.24	14,734.21	0.00	0.00	0.00
22,200.00	90.00	181.35	6,155.00	-14,510.07	3,073.89	14,831.69	0.00	0.00	0.00
22,300.00	90.00	181.35	6,155.00	-14,610.04	3,071.54	14,929.17	0.00	0.00	0.00
22,400.00	90.00	181.35	6,155.00	-14,710.02	3,069.18	15,026.65	0.00	0.00	0.00
22,500.00	90.00	181.35	6,155.00	-14,809.99	3,066.83	15,124.14	0.00	0.00	0.00
22,600.00	90.00	181.35	6,155.00	-14,909.96	3,064.48	15,221.62	0.00	0.00	0.00
22,688.37	90.00	181.35	6,155.00	-14,998.30	3,062.40	15,307.76	0.00	0.00	0.00
TD at 22688.37									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well STATE SEVENTY HOLES U-5-17XRLN
Company:	BONANZA CREEK ENERGY	TVD Reference:	KB 24' @ 4559.00usft
Project:	WELD COUNTY	MD Reference:	KB 24' @ 4559.00usft
Site:	SEC 5-T4N-R62W	North Reference:	True
Well:	STATE SEVENTY HOLES U-5-17XRLN	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
SEVENTY HOLES U-5-I - plan hits target center - Point	0.00	0.00	6,155.00	-10,178.53	3,167.77	1,361,335.72	3,323,719.90	40.319450°N	104.339020°W
SEVENTY HOLES U-5-I - plan hits target center - Point	0.00	0.00	6,155.00	521.11	2,611.72	1,372,026.80	3,323,025.21	40.348820°N	104.341010°W
SEVENTY HOLES U-5-I - plan hits target center - Point	0.00	0.00	6,155.00	-14,998.30	3,062.40	1,356,515.18	3,323,677.02	40.306220°N	104.339400°W
SEVENTY HOLES U-5-I - plan hits target center - Point	0.00	0.00	6,155.00	-4,899.76	2,896.66	1,366,610.31	3,323,380.39	40.333940°N	104.339990°W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
69.00	69.00	Laramie-Fox Hills				
185.01	185.00	Pierre Shale				
325.23	325.00	Upper Pierre Aquifer (Pawnee)				
1,332.69	1,295.00	Pierre Shale				
3,584.73	3,285.00	Parkman				
3,641.38	3,335.00	Pierre Shale				
6,719.95	6,015.00	Sharon Springs				
7,153.17	6,155.00	Niobrara				

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
1,501.89	1,446.61	142.48	304.54	Start 4649.58 hold at 1501.89 MD
6,151.47	5,550.50	1,068.62	2,284.17	Start DLS 10.00 TFO 109.68
7,153.17	6,155.00	521.11	2,611.72	Start 5428.35 hold at 7153.17 MD
12,581.52	6,155.00	-4,899.76	2,896.66	Start DLS 2.00 TFO 90.00
12,584.97	6,155.00	-4,903.20	2,896.84	Start 5282.28 hold at 12584.97 MD
17,867.25	6,155.00	-10,178.53	3,167.77	Start Turn 2.00
18,081.63	6,155.00	-10,392.84	3,170.75	Start 4606.74 hold at 18081.63 MD
22,688.37	6,155.00	-14,998.30	3,062.40	TD at 22688.37