

BONANZA CREEK ENERGY

WELD COUNTY

SEC 2-T5N-R62W

STATE ANTELOPE 42-12-3HN

OWB

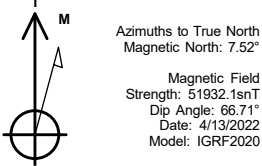
Design: FINAL SURVEY

Standard Survey Report

14 November, 2022

Project: WELD COUNTY
Site: SEC 2-T5N-R62W
Well: STATE ANTELOPE 42-12-3HN
Wellbore: OWB
Design: FINAL SURVEY

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



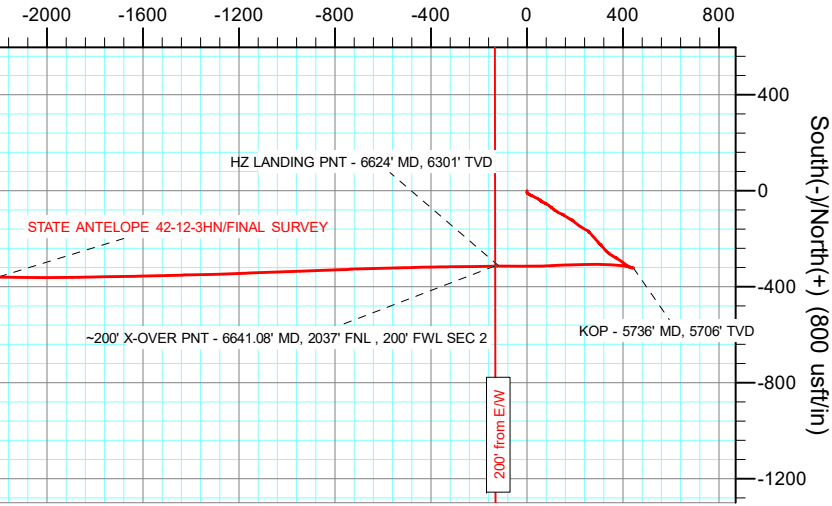
WELL DETAILS: STATE ANTELOPE 42-12-3HN

			4645.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1402489.86	3334367.27	40.432020°N	104.298840°W	

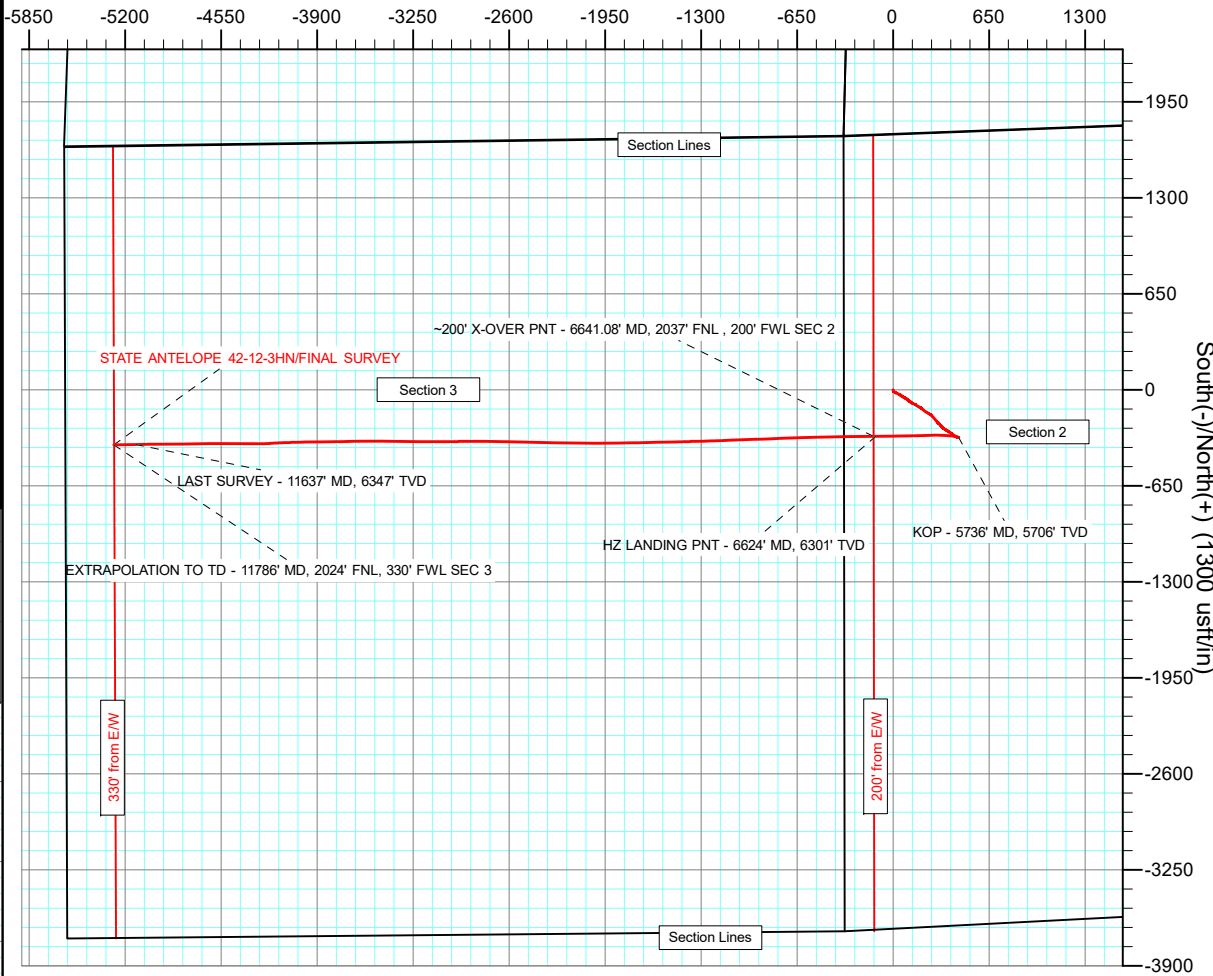
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5736.00	2.40	290.22	5706.36	-321.87	443.92	-420.13	561.84	KOP - 5736' MD, 5706' TVD
6624.00	85.67	269.31	6300.99	-314.14	-116.60	138.45	1123.46	HZ LANDING PNT - 6624' MD, 6301' TVD
6641.08	86.40	269.30	6302.17	-314.35	-133.63	155.46	1140.52	~200' X-OVER PNT - 6641.08' MD, 2037' FNL , 200' FWL SEC 2
11637.00	89.64	269.09	6346.55	-370.47	-5127.24	5140.60	6135.33	LAST SURVEY - 11637' MD, 6347' TVD
11786.00	89.64	269.09	6347.49	-372.83	-5276.22	5289.37	6284.32	EXTRAPOLATION TO TD - 11786' MD, 2024' FNL, 330' FWL SEC 3

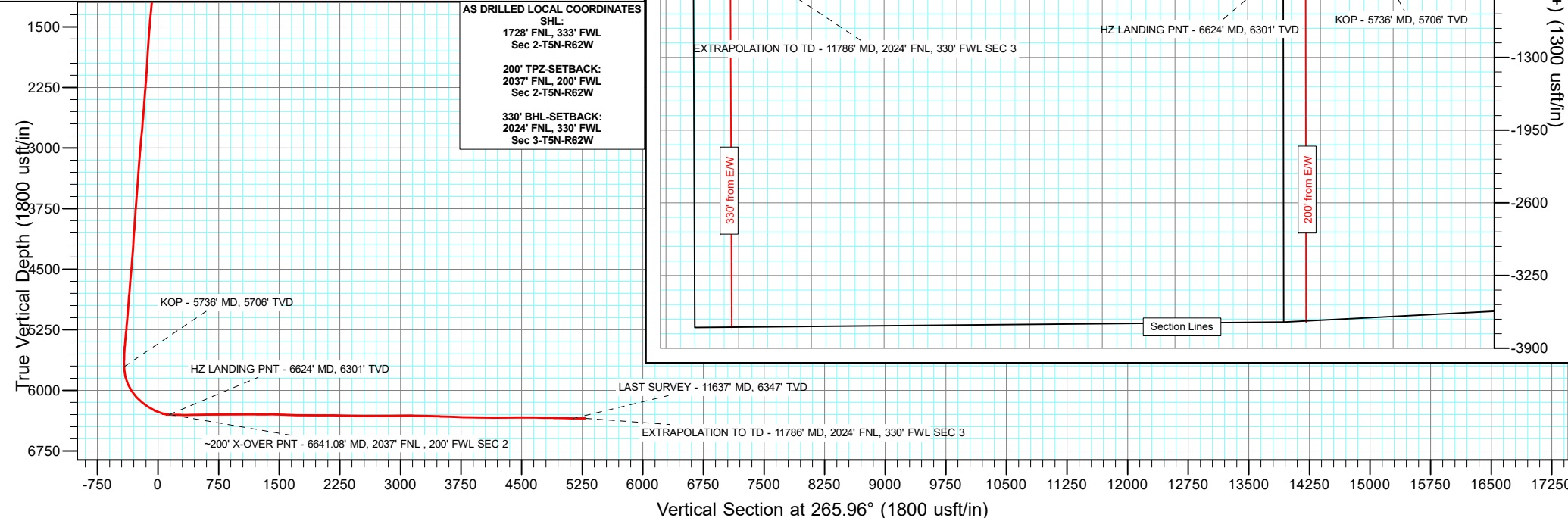
West(-)/East(+) (800 usft/in)



West(-)/East(+) (1300 usft/in)



True Vertical Depth (1800 usft/in)



Survey Report

Company:	BONANZA CREEK ENERGY	Local Co-ordinate Reference:	Well STATE ANTELOPE 42-12-3HN
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 4670.00usft
Site:	SEC 2-T5N-R62W	MD Reference:	KB 25' @ 4670.00usft
Well:	STATE ANTELOPE 42-12-3HN	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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 2-T5N-R62W			
Site Position:		Northing:	1,404,201.39 usft	Latitude:	40.436731°N
From:	Lat/Long	Easting:	3,334,009.19 usft	Longitude:	104.300043°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.78 °

Well		STATE ANTELOPE 42-12-3HN				
Well Position	+N/-S	0.00 usft	Northing:	1,402,489.86 usft	Latitude:	40.432020°N
	+E/-W	0.00 usft	Easting:	3,334,367.27 usft	Longitude:	104.298840°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,645.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/13/2022	7.52	66.71	51,932.13930018

Design	FINAL SURVEY				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	265.96	

Survey Program	Date	11/14/2022			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
210.00	1,602.00	SURFACE SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	
1,675.00	11,786.00	FINAL SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	

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	
210.00	2.40	183.80	209.94	-4.39	-0.29	0.60	1.14	1.14	0.00	
302.00	3.90	143.00	301.81	-8.81	1.46	-0.84	2.83	1.63	-44.35	
376.00	5.10	123.10	375.58	-12.62	5.73	-4.83	2.64	1.62	-26.89	
463.00	5.80	118.50	462.19	-16.83	12.84	-11.62	0.95	0.80	-5.29	
550.00	8.48	116.37	548.51	-21.77	22.45	-20.86	3.09	3.08	-2.45	
637.00	7.60	116.30	634.65	-27.17	33.35	-31.36	1.01	-1.01	-0.08	
725.00	8.10	115.80	721.83	-32.45	44.15	-41.76	0.57	0.57	-0.57	
812.00	7.90	129.60	807.99	-38.93	54.28	-51.40	2.21	-0.23	15.86	
899.00	5.30	124.00	894.40	-44.99	62.22	-58.89	3.08	-2.99	-6.44	

Survey Report

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Project:	WELD COUNTY	TVD Reference:	KB 25' @ 4670.00usft
Site:	SEC 2-T5N-R62W	MD Reference:	KB 25' @ 4670.00usft
Well:	STATE ANTELOPE 42-12-3HN	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)
986.00	2.90	115.40	981.18	-48.18	67.54	-63.97	2.84	-2.76	-9.89
1,074.00	3.30	110.30	1,069.05	-50.01	71.92	-68.22	0.55	0.45	-5.80
1,161.00	5.10	117.60	1,155.81	-52.67	77.70	-73.79	2.15	2.07	8.39
1,248.00	6.80	124.60	1,242.34	-57.39	85.37	-81.11	2.12	1.95	8.05
1,335.00	7.70	125.60	1,328.64	-63.71	94.35	-89.62	1.04	1.03	1.15
1,423.00	6.20	131.20	1,416.00	-70.27	102.72	-97.51	1.87	-1.70	6.36
1,510.00	6.90	130.20	1,502.43	-76.74	110.24	-104.56	0.82	0.80	-1.15
1,602.00	5.30	119.80	1,593.91	-82.42	118.15	-112.05	2.11	-1.74	-11.30
1,675.00	5.03	124.80	1,666.61	-85.92	123.71	-117.34	0.72	-0.37	6.85
1,770.00	4.21	120.34	1,761.30	-90.06	130.13	-123.46	0.94	-0.86	-4.69
1,864.00	3.95	115.92	1,855.06	-93.21	136.02	-129.12	0.43	-0.28	-4.70
1,958.00	3.79	112.89	1,948.85	-95.84	141.80	-134.69	0.28	-0.17	-3.22
2,053.00	3.80	109.73	2,043.64	-98.12	147.65	-140.37	0.22	0.01	-3.33
2,149.00	5.94	127.04	2,139.29	-102.19	154.61	-147.03	2.68	2.23	18.03
2,244.00	5.81	122.40	2,233.79	-107.73	162.60	-154.60	0.52	-0.14	-4.88
2,338.00	5.57	120.89	2,327.33	-112.62	170.53	-162.17	0.30	-0.26	-1.61
2,432.00	5.15	120.05	2,420.92	-117.07	178.10	-169.40	0.45	-0.45	-0.89
2,527.00	4.97	114.10	2,515.55	-120.89	185.54	-176.56	0.58	-0.19	-6.26
2,622.00	7.01	131.58	2,610.03	-126.42	193.64	-184.25	2.86	2.15	18.40
2,717.00	6.70	130.28	2,704.36	-133.85	202.20	-192.27	0.36	-0.33	-1.37
2,812.00	6.71	127.13	2,798.71	-140.78	210.86	-200.41	0.39	0.01	-3.32
2,907.00	6.47	123.94	2,893.08	-147.12	219.72	-208.80	0.46	-0.25	-3.36
3,001.00	6.38	119.96	2,986.49	-152.68	228.64	-217.31	0.48	-0.10	-4.23
3,215.00	5.09	119.35	3,199.41	-163.27	247.22	-235.09	0.60	-0.60	-0.29
3,309.00	4.63	120.05	3,293.07	-167.22	254.13	-241.72	0.49	-0.49	0.74
3,404.00	7.01	139.98	3,387.59	-173.58	261.18	-248.30	3.25	2.51	20.98
3,499.00	7.42	139.73	3,481.83	-182.70	268.88	-255.33	0.43	0.43	-0.26
3,594.00	7.55	138.18	3,576.03	-192.03	277.00	-262.78	0.25	0.14	-1.63
3,689.00	7.27	138.56	3,670.23	-201.19	285.14	-270.25	0.30	-0.29	0.40
3,784.00	6.91	138.62	3,764.51	-209.98	292.90	-277.37	0.38	-0.38	0.06
3,879.00	6.16	137.48	3,858.89	-218.03	300.12	-284.01	0.80	-0.79	-1.20
3,974.00	5.18	133.63	3,953.42	-224.74	306.67	-290.07	1.11	-1.03	-4.05
4,068.00	6.61	138.59	4,046.92	-231.73	313.32	-296.21	1.61	1.52	5.28
4,162.00	6.54	137.39	4,140.30	-239.73	320.52	-302.83	0.16	-0.07	-1.28
4,257.00	5.69	139.11	4,234.76	-247.27	327.27	-309.03	0.92	-0.89	1.81
4,352.00	6.98	132.87	4,329.18	-254.76	334.58	-315.79	1.54	1.36	-6.57
4,447.00	5.76	127.58	4,423.60	-261.59	342.59	-323.30	1.42	-1.28	-5.57
4,541.00	6.84	123.05	4,517.03	-267.52	351.02	-331.29	1.26	1.15	-4.82
4,635.00	6.03	119.97	4,610.43	-273.04	359.99	-339.85	0.94	-0.86	-3.28
4,730.00	5.30	118.07	4,704.97	-277.60	368.19	-347.70	0.79	-0.77	-2.00
4,825.00	6.52	126.38	4,799.46	-282.86	376.40	-355.53	1.57	1.28	8.75
4,919.00	5.48	121.32	4,892.95	-288.36	384.53	-363.25	1.24	-1.11	-5.38
5,012.00	5.47	122.61	4,985.52	-293.06	392.06	-370.43	0.13	-0.01	1.39

Survey Report

Company:	BONANZA CREEK ENERGY	Local Co-ordinate Reference:	Well STATE ANTELOPE 42-12-3HN
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 4670.00usft
Site:	SEC 2-T5N-R62W	MD Reference:	KB 25' @ 4670.00usft
Well:	STATE ANTELOPE 42-12-3HN	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
5,107.00	6.24	126.75	5,080.03	-298.59	400.01	-377.97	0.92	0.81	4.36	
5,297.00	7.24	127.31	5,268.71	-312.02	417.81	-394.77	0.53	0.53	0.29	
5,392.00	5.88	117.05	5,363.09	-317.86	426.90	-403.43	1.88	-1.43	-10.80	
5,487.00	5.31	103.77	5,457.64	-321.12	435.51	-411.79	1.48	-0.60	-13.98	
5,581.00	2.44	95.41	5,551.42	-322.35	441.72	-417.90	3.10	-3.05	-8.89	
5,676.00	1.02	80.37	5,646.37	-322.40	444.57	-420.74	1.56	-1.49	-15.83	
5,736.00	2.40	290.22	5,706.36	-321.87	443.92	-420.13	5.54	2.30	-250.26	
KOP - 5736' MD, 5706' TVD										
5,771.00	4.33	286.29	5,741.30	-321.25	441.96	-418.22	5.54	5.51	-11.22	
5,866.00	15.22	284.32	5,834.78	-317.15	426.39	-402.97	11.47	11.46	-2.07	
5,961.00	23.66	276.67	5,924.30	-311.84	395.31	-372.35	9.26	8.88	-8.05	
6,056.00	33.54	272.96	6,007.61	-308.26	350.05	-327.45	10.56	10.40	-3.91	
6,151.00	42.99	270.63	6,082.12	-306.54	291.32	-268.99	10.06	9.95	-2.45	
6,246.00	50.75	267.87	6,147.02	-307.56	222.06	-199.83	8.44	8.17	-2.91	
6,341.00	56.38	268.05	6,203.42	-310.27	145.71	-123.48	5.93	5.93	0.19	
6,435.00	64.24	266.99	6,249.94	-313.83	64.19	-41.91	8.42	8.36	-1.13	
6,530.00	73.59	271.58	6,284.10	-314.82	-24.31	46.44	10.82	9.84	4.83	
6,624.00	85.67	269.31	6,300.99	-314.14	-116.60	138.45	13.07	12.85	-2.41	
HZ LANDING PNT - 6624' MD, 6301' TVD										
6,641.08	86.40	269.30	6,302.17	-314.35	-133.63	155.46	4.29	4.29	-0.04	
~200' X-OVER PNT - 6641.08' MD, 2037' FNL , 200' FWL SEC 2										
6,719.00	89.75	269.27	6,304.78	-315.32	-211.49	233.19	4.29	4.29	-0.04	
6,814.00	90.22	269.25	6,304.81	-316.55	-306.48	328.03	0.50	0.49	-0.02	
6,908.00	90.84	268.90	6,303.94	-318.06	-400.47	421.89	0.76	0.66	-0.37	
7,002.00	91.72	268.70	6,301.84	-320.03	-494.42	515.75	0.96	0.94	-0.21	
7,097.00	89.66	268.27	6,300.69	-322.54	-589.38	610.65	2.22	-2.17	-0.45	
7,192.00	89.95	268.11	6,301.02	-325.54	-684.33	705.57	0.35	0.31	-0.17	
7,287.00	90.55	267.68	6,300.60	-329.03	-779.26	800.52	0.78	0.63	-0.45	
7,382.00	91.81	267.65	6,298.65	-332.90	-874.16	895.45	1.33	1.33	-0.03	
7,476.00	90.02	268.75	6,297.15	-335.85	-968.10	989.36	2.23	-1.90	1.17	
7,571.00	90.65	267.33	6,296.59	-339.10	-1,063.04	1,084.30	1.64	0.66	-1.49	
7,666.00	88.73	267.88	6,297.10	-343.07	-1,157.95	1,179.25	2.10	-2.02	0.58	
7,761.00	89.45	267.73	6,298.61	-346.71	-1,252.87	1,274.19	0.77	0.76	-0.16	
7,855.00	91.73	269.13	6,297.65	-349.29	-1,346.82	1,368.09	2.85	2.43	1.49	
7,949.00	87.47	268.14	6,298.30	-351.52	-1,440.77	1,461.96	4.65	-4.53	-1.05	
8,044.00	87.72	268.67	6,302.29	-354.17	-1,535.65	1,556.79	0.62	0.26	0.56	
8,139.00	88.30	269.02	6,305.59	-356.08	-1,630.57	1,651.61	0.71	0.61	0.37	
8,233.00	88.85	269.06	6,307.92	-357.65	-1,724.53	1,745.45	0.59	0.59	0.04	
8,328.00	89.24	268.70	6,309.51	-359.51	-1,819.49	1,840.31	0.56	0.41	-0.38	
8,422.00	90.28	269.33	6,309.90	-361.13	-1,913.48	1,934.17	1.29	1.11	0.67	
8,516.00	91.08	269.96	6,308.79	-361.71	-2,007.47	2,027.97	1.08	0.85	0.67	
8,610.00	89.08	270.97	6,308.65	-360.95	-2,101.46	2,121.67	2.38	-2.13	1.07	
8,705.00	88.65	271.11	6,310.54	-359.22	-2,196.42	2,216.28	0.48	-0.45	0.15	
8,799.00	88.63	270.48	6,312.77	-357.92	-2,290.39	2,309.92	0.67	-0.02	-0.67	

Survey Report

Company:	BONANZA CREEK ENERGY	Local Co-ordinate Reference:	Well STATE ANTELOPE 42-12-3HN
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 4670.00usft
Site:	SEC 2-T5N-R62W	MD Reference:	KB 25' @ 4670.00usft
Well:	STATE ANTELOPE 42-12-3HN	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)
8,989.00	89.73	272.03	6,315.49	-353.76	-2,480.31	2,499.08	1.00	0.58	0.82
9,084.00	89.52	270.66	6,316.11	-351.53	-2,575.28	2,593.66	1.46	-0.22	-1.44
9,272.00	90.63	270.70	6,315.86	-349.30	-2,763.27	2,781.02	0.59	0.59	0.02
9,367.00	91.35	269.66	6,314.22	-349.00	-2,858.25	2,875.74	1.33	0.76	-1.09
9,461.00	89.55	269.42	6,313.48	-349.75	-2,952.24	2,969.55	1.93	-1.91	-0.26
9,556.00	90.89	269.89	6,313.12	-350.32	-3,047.24	3,064.35	1.49	1.41	0.49
9,651.00	88.18	269.98	6,313.89	-350.43	-3,142.22	3,159.11	2.85	-2.85	0.09
9,746.00	89.66	270.19	6,315.68	-350.29	-3,237.20	3,253.84	1.57	1.56	0.22
9,841.00	87.73	270.98	6,317.84	-349.32	-3,332.17	3,348.50	2.20	-2.03	0.83
9,936.00	88.23	270.85	6,321.19	-347.81	-3,427.10	3,443.09	0.54	0.53	-0.14
10,030.00	87.75	269.68	6,324.49	-347.37	-3,521.04	3,536.76	1.34	-0.51	-1.24
10,125.00	88.29	269.35	6,327.77	-348.18	-3,615.98	3,631.52	0.67	0.57	-0.35
10,219.00	87.94	268.62	6,330.86	-349.84	-3,709.91	3,725.34	0.86	-0.37	-0.78
10,314.00	88.98	269.41	6,333.42	-351.47	-3,804.86	3,820.17	1.37	1.09	0.83
10,409.00	89.49	269.76	6,334.68	-352.16	-3,899.85	3,914.97	0.65	0.54	0.37
10,503.00	88.55	268.06	6,336.29	-353.95	-3,993.81	4,008.83	2.07	-1.00	-1.81
10,598.00	89.88	269.09	6,337.59	-356.31	-4,088.77	4,103.72	1.77	1.40	1.08
10,692.00	88.48	266.01	6,338.94	-360.33	-4,182.66	4,197.66	3.60	-1.49	-3.28
10,881.00	91.65	271.23	6,338.72	-364.88	-4,371.52	4,386.36	3.23	1.68	2.76
10,976.00	92.18	270.30	6,335.55	-363.61	-4,466.46	4,480.98	1.13	0.56	-0.98
11,070.00	88.67	269.94	6,334.85	-363.41	-4,560.44	4,574.71	3.75	-3.73	-0.38
11,165.00	88.50	269.39	6,337.20	-363.97	-4,655.41	4,669.48	0.61	-0.18	-0.58
11,259.00	88.60	268.40	6,339.58	-365.78	-4,749.36	4,763.33	1.06	0.11	-1.05
11,353.00	90.16	269.46	6,340.59	-367.53	-4,843.33	4,857.19	2.01	1.66	1.13
11,448.00	88.03	269.77	6,342.10	-368.17	-4,938.31	4,951.98	2.27	-2.24	0.33
11,542.00	88.46	269.18	6,344.97	-369.03	-5,032.26	5,045.76	0.78	0.46	-0.63
11,637.00	89.64	269.09	6,346.55	-370.47	-5,127.24	5,140.60	1.25	1.24	-0.09
LAST SURVEY - 11637' MD, 6347' TVD									
11,786.00	89.64	269.09	6,347.49	-372.83	-5,276.22	5,289.37	0.00	0.00	0.00
EXTRAPOLATION TO TD - 11786' MD, 2024' FNL, 330' FWL SEC 3									

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
LP-STATE ANTELOPE 4	0.00	0.00	6,305.00	-338.80	-133.63	1,402,149.29	3,334,238.25	40.431090°N	104.299320°W
- actual wellpath misses target center by 24.61usft at 6641.47usft MD (6302.19 TVD, -314.35 N, -134.03 E)									
- Point									
PBHL-STATE ANTELOP	0.00	0.00	6,345.00	-360.13	-5,276.36	1,402,058.31	3,329,096.47	40.431030°N	104.317793°W
- actual wellpath misses target center by 12.95usft at 11785.93usft MD (6347.48 TVD, -372.83 N, -5276.14 E)									
- Point									

Survey Report

Company:	BONANZA CREEK ENERGY	Local Co-ordinate Reference:	Well STATE ANTELOPE 42-12-3HN
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 4670.00usft
Site:	SEC 2-T5N-R62W	MD Reference:	KB 25' @ 4670.00usft
Well:	STATE ANTELOPE 42-12-3HN	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,736.00	5,706.36	-321.87	443.92	KOP - 5736' MD, 5706' TVD
6,624.00	6,300.99	-314.14	-116.60	HZ LANDING PNT - 6624' MD, 6301' TVD
6,641.08	6,302.17	-314.35	-133.63	~200' X-OVER PNT - 6641.08' MD, 2037' FNL , 200' FWL SEC 2
11,637.00	6,346.55	-370.47	-5,127.24	LAST SURVEY - 11637' MD, 6347' TVD
11,786.00	6,347.49	-372.83	-5,276.22	EXTRAPOLATION TO TD - 11786' MD, 2024' FNL, 330' FWL SEC 3

Checked By: _____ Approved By: _____ Date: _____