

BONANZA CREEK ENERGY OPERATING

Well Name: **State Antelope 14-11-28HNB**

Surface Location: State Antelope J-28 Pad Sec.28-T5N-R62W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

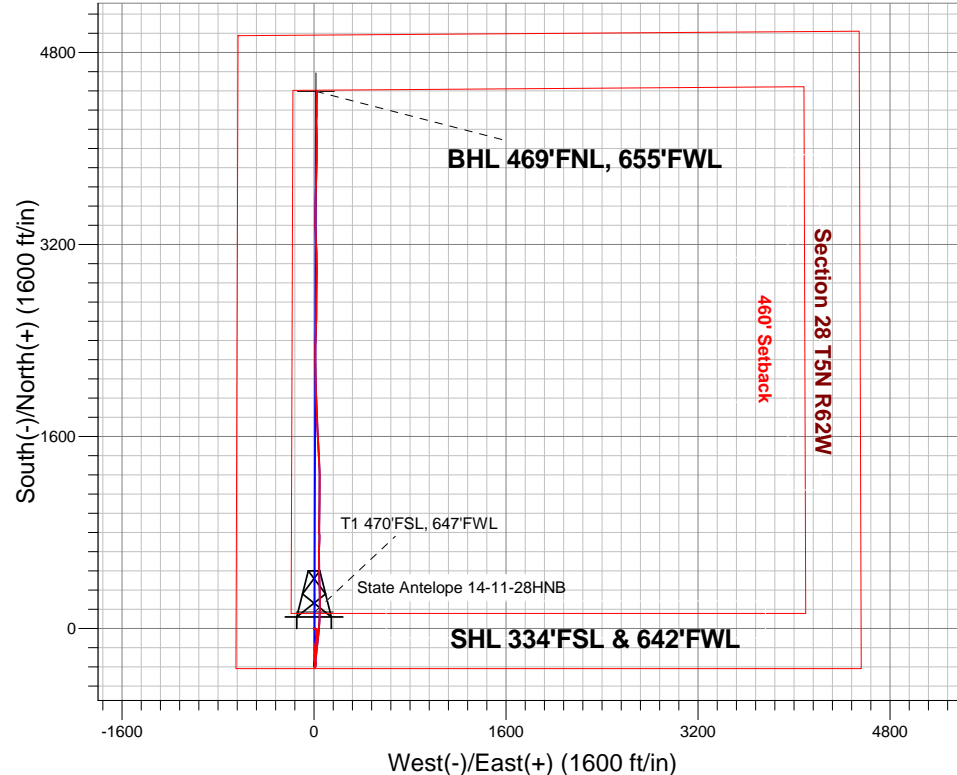
Ground Elevation: 4604.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1377698.65	3324363.98	40.364340	-104.335940	

RKB - 17' WELL @ 4621.0ft (RKB - 17')

FINAL SURVEY

Projected Bottom Hole Location
10850' MD 6280' TVD 4479' N & 24' E of SHL
93.4 degree Incl @ 1.3 degree AZM



State Antelope J-28 Pad Sec.28-T5N-R62W
State Antelope 14-11-28HNB
Wellbore #1
9:31, July 11 2013

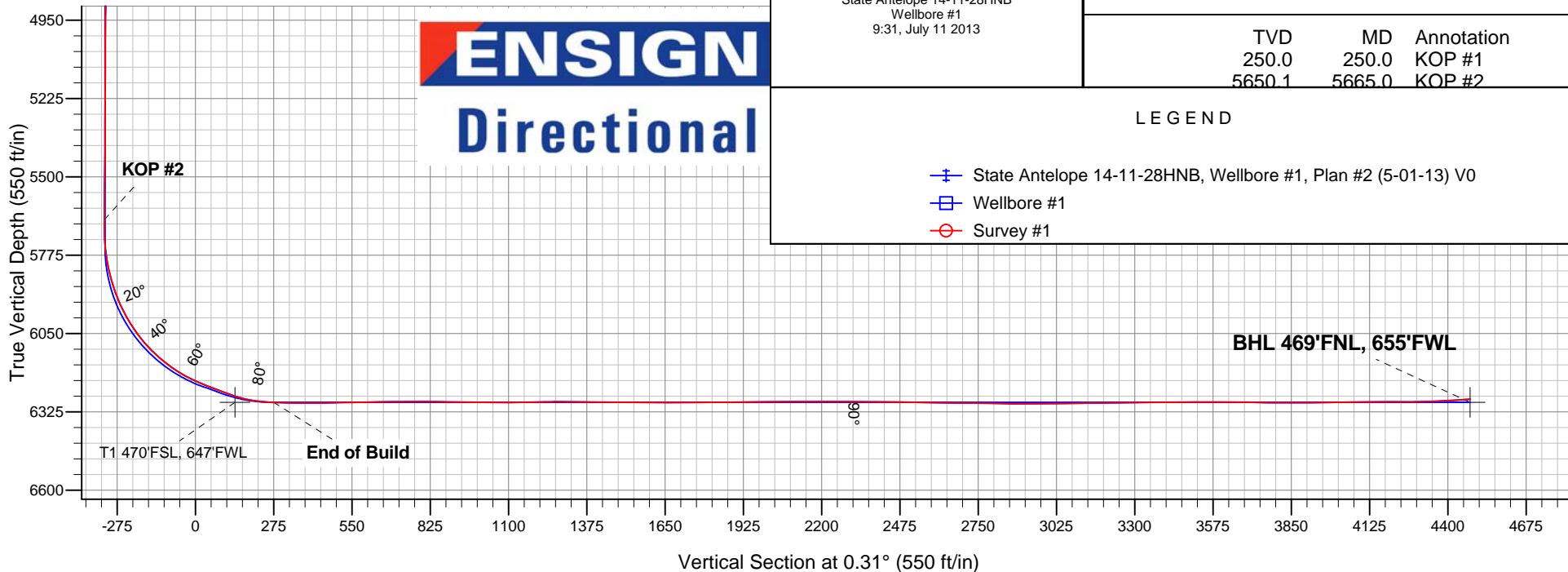
ANNOTATIONS

TVD	MD	Annotation
250.0	250.0	KOP #1
5650.1	5665.0	KOP #2

LEGEND

- State Antelope 14-11-28HNB, Wellbore #1, Plan #2 (5-01-13) V0
- Wellbore #1
- Survey #1

ENSIGN
Directional





BONANZA CREEK ENERGY OPERATING

SEC.28-T5N-R62W

State Antelope J-28 Pad Sec.28-T5N-R62W

State Antelope 14-11-28HNB

Wellbore #1

Survey: Survey #1

Standard Survey Report

11 July, 2013

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Antelope 14-11-28HNB
Project:	SEC.28-T5N-R62W	TVD Reference:	WELL @ 4621.0ft (RKB - 17')
Site:	State Antelope J-28 Pad Sec.28-T5N-R62W	MD Reference:	WELL @ 4621.0ft (RKB - 17')
Well:	State Antelope 14-11-28HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.28-T5N-R62W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	State Antelope J-28 Pad Sec.28-T5N-R62W				
Site Position:		Northing:	1,377,695.01 ft	Latitude:	40.364330
From:	Lat/Long	Easting:	3,324,364.03ft	Longitude:	-104.335940
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.75 °

Well	State Antelope 14-11-28HNB					
Well Position	+N/-S	0.0 ft	Northing:	1,377,698.65 ft	Latitude:	40.364340
	+E/-W	0.0 ft	Easting:	3,324,363.98 ft	Longitude:	-104.335940
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,604.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2013	8.37	67.02	52,956

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	0.31	

Survey Program	Date	6/3/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
82.0	10,850.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
82.0	0.10	306.50	82.0	0.0	-0.1	0.0	0.12	0.12	0.00	
174.0	0.90	91.90	174.0	0.1	0.6	0.1	1.07	0.87	158.04	
250.0	1.70	94.40	250.0	0.0	2.3	0.0	1.05	1.05	3.29	
KOP #1										
269.0	1.90	94.70	269.0	-0.1	2.9	-0.1	1.05	1.05	1.56	
383.0	2.00	93.10	382.9	-0.3	6.8	-0.3	0.10	0.09	-1.40	
429.0	2.26	95.37	428.9	-0.5	8.5	-0.4	0.59	0.56	4.94	
9 5/8"										
454.0	2.40	96.40	453.8	-0.6	9.5	-0.5	0.59	0.57	4.11	
549.0	2.70	121.90	548.8	-2.0	13.4	-1.9	1.22	0.32	26.84	
644.0	2.90	141.40	643.6	-5.0	16.8	-5.0	1.02	0.21	20.53	
739.0	3.60	159.70	738.5	-9.7	19.3	-9.6	1.31	0.74	19.26	

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Site:	State Antelope J-28 Pad Sec.28-T5N-R62W	MD Reference:	WELL @ 4621.0ft (RKB - 17')
Well:	State Antelope 14-11-28HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
834.0	4.40	169.60	833.3	-16.1	21.0	-16.0	1.11	0.84	10.42
929.0	5.60	175.90	927.9	-24.3	22.0	-24.2	1.39	1.26	6.63
1,025.0	6.60	180.60	1,023.4	-34.5	22.3	-34.4	1.16	1.04	4.90
1,089.0	6.70	179.20	1,086.9	-41.9	22.3	-41.8	0.30	0.16	-2.19
1,181.0	6.90	179.80	1,178.3	-52.8	22.4	-52.7	0.23	0.22	0.65
1,273.0	6.20	178.90	1,269.7	-63.3	22.5	-63.2	0.77	-0.76	-0.98
1,365.0	6.20	186.30	1,361.1	-73.2	22.0	-73.1	0.87	0.00	8.04
1,458.0	6.50	188.20	1,453.6	-83.4	20.7	-83.3	0.39	0.32	2.04
1,550.0	5.50	188.40	1,545.1	-92.9	19.4	-92.8	1.09	-1.09	0.22
1,642.0	4.60	188.90	1,636.7	-100.9	18.1	-100.8	0.98	-0.98	0.54
1,734.0	4.00	190.70	1,728.4	-107.7	17.0	-107.6	0.67	-0.65	1.96
1,826.0	2.80	197.30	1,820.3	-113.0	15.7	-112.9	1.37	-1.30	7.17
1,918.0	3.80	201.90	1,912.1	-118.0	13.9	-117.9	1.12	1.09	5.00
2,010.0	4.40	191.50	2,003.9	-124.3	12.1	-124.2	1.04	0.65	-11.30
2,102.0	4.90	188.90	2,095.6	-131.6	10.7	-131.6	0.59	0.54	-2.83
2,195.0	5.50	186.60	2,188.2	-140.0	9.6	-139.9	0.68	0.65	-2.47
2,287.0	5.50	181.20	2,279.8	-148.8	9.0	-148.7	0.56	0.00	-5.87
2,379.0	5.20	184.50	2,371.4	-157.3	8.6	-157.3	0.47	-0.33	3.59
2,471.0	5.80	183.80	2,463.0	-166.1	8.0	-166.1	0.66	0.65	-0.76
2,565.0	5.90	181.70	2,556.5	-175.7	7.5	-175.6	0.25	0.11	-2.23
2,660.0	6.60	177.70	2,650.9	-186.0	7.6	-186.0	0.87	0.74	-4.21
2,756.0	6.20	176.30	2,746.3	-196.7	8.1	-196.7	0.45	-0.42	-1.46
2,852.0	5.60	179.10	2,841.8	-206.6	8.5	-206.5	0.69	-0.63	2.92
2,948.0	4.80	182.90	2,937.4	-215.3	8.4	-215.2	0.91	-0.83	3.96
3,042.0	5.30	187.00	3,031.0	-223.5	7.7	-223.5	0.66	0.53	4.36
3,137.0	4.70	181.00	3,125.7	-231.7	7.1	-231.7	0.84	-0.63	-6.32
3,232.0	4.40	169.70	3,220.4	-239.2	7.7	-239.2	0.99	-0.32	-11.89
3,327.0	5.30	177.80	3,315.0	-247.2	8.5	-247.1	1.19	0.95	8.53
3,422.0	5.50	174.50	3,409.6	-256.1	9.1	-256.1	0.39	0.21	-3.47
3,518.0	6.00	164.30	3,505.1	-265.5	10.9	-265.5	1.18	0.52	-10.63
3,614.0	5.60	169.40	3,600.6	-275.0	13.1	-274.9	0.68	-0.42	5.31
3,709.0	5.10	174.10	3,695.2	-283.7	14.4	-283.6	0.70	-0.53	4.95
3,805.0	4.60	182.10	3,790.9	-291.8	14.7	-291.7	0.87	-0.52	8.33
3,901.0	3.90	181.30	3,886.6	-298.9	14.5	-298.8	0.73	-0.73	-0.83
3,996.0	3.30	179.60	3,981.4	-304.9	14.4	-304.8	0.64	-0.63	-1.79
4,092.0	2.50	186.10	4,077.3	-309.7	14.2	-309.6	0.90	-0.83	6.77
4,188.0	2.00	193.50	4,173.2	-313.4	13.6	-313.4	0.60	-0.52	7.71
4,283.0	1.30	206.30	4,268.2	-316.0	12.7	-315.9	0.83	-0.74	13.47
4,378.0	0.50	218.10	4,363.2	-317.3	12.0	-317.2	0.86	-0.84	12.42
4,474.0	0.50	294.40	4,459.2	-317.5	11.4	-317.4	0.64	0.00	79.48
4,570.0	0.80	294.20	4,555.2	-317.0	10.4	-317.0	0.31	0.31	-0.21
4,664.0	1.30	308.10	4,649.2	-316.1	8.9	-316.0	0.59	0.53	14.79
4,759.0	0.50	263.10	4,744.2	-315.5	7.7	-315.4	1.06	-0.84	-47.37
4,855.0	0.20	227.20	4,840.2	-315.6	7.1	-315.6	0.37	-0.31	-37.40
4,951.0	0.30	160.60	4,936.2	-316.0	7.1	-315.9	0.30	0.10	-69.38
5,045.0	0.40	155.70	5,030.2	-316.5	7.3	-316.5	0.11	0.11	-5.21
5,140.0	0.50	111.60	5,125.1	-317.0	7.8	-316.9	0.37	0.11	-46.42
5,235.0	0.40	118.90	5,220.1	-317.3	8.5	-317.2	0.12	-0.11	7.68
5,331.0	0.30	236.40	5,316.1	-317.6	8.6	-317.5	0.63	-0.10	122.40
5,425.0	0.60	223.80	5,410.1	-318.1	8.1	-318.0	0.33	0.32	-13.40
5,521.0	0.60	212.50	5,506.1	-318.9	7.4	-318.8	0.12	0.00	-11.77
5,617.0	0.40	181.30	5,602.1	-319.6	7.2	-319.6	0.34	-0.21	-32.50
5,665.0	0.40	222.70	5,650.1	-319.9	7.0	-319.9	0.59	0.00	86.25
KOP #2									

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Well:	State Antelope 14-11-28HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,713.0	1.10	342.90	5,698.1	-319.6	6.8	-319.6	2.80	1.46	250.42
5,761.0	5.40	1.00	5,746.0	-316.9	6.7	-316.9	9.10	8.96	37.71
5,809.0	9.70	5.90	5,793.6	-310.6	7.2	-310.6	9.05	8.96	10.21
5,857.0	13.70	7.10	5,840.6	-300.9	8.3	-300.9	8.35	8.33	2.50
5,905.0	17.90	4.90	5,886.8	-288.0	9.6	-287.9	8.84	8.75	-4.58
5,953.0	22.80	5.40	5,931.8	-271.3	11.1	-271.3	10.21	10.21	1.04
6,000.0	27.70	7.10	5,974.3	-251.4	13.3	-251.3	10.54	10.43	3.62
6,047.0	32.00	7.70	6,015.0	-228.2	16.3	-228.1	9.17	9.15	1.28
6,095.0	37.00	7.10	6,054.6	-201.3	19.8	-201.2	10.44	10.42	-1.25
6,143.0	42.60	6.80	6,091.4	-170.8	23.5	-170.6	11.67	11.67	-0.63
6,191.0	47.70	5.60	6,125.3	-137.0	27.2	-136.8	10.77	10.63	-2.50
6,239.0	52.80	6.30	6,156.0	-100.3	31.0	-100.1	10.68	10.63	1.46
6,286.0	57.40	6.60	6,182.8	-62.0	35.4	-61.8	9.80	9.79	0.64
6,334.0	63.30	5.90	6,206.6	-20.5	39.9	-20.3	12.36	12.29	-1.46
6,382.0	68.70	3.30	6,226.1	23.2	43.4	23.4	12.29	11.25	-5.42
6,430.0	69.30	2.40	6,243.3	67.9	45.6	68.2	2.15	1.25	-1.88
6,434.0	69.27	2.42	6,244.7	71.7	45.8	71.9	0.74	-0.63	0.42
4 1/2									
6,444.4	69.21	2.46	6,248.4	81.4	46.2	81.6	0.74	-0.63	0.42
7"									
6,478.0	69.00	2.60	6,260.4	112.7	47.6	113.0	0.74	-0.62	0.42
6,510.9	72.56	1.36	6,271.2	143.8	48.6	144.0	11.40	10.83	-3.78
T1 470'FSL, 647'FWL									
6,526.0	74.20	0.80	6,275.5	158.2	48.9	158.5	11.40	10.85	-3.67
6,574.0	81.70	0.80	6,285.5	205.1	49.6	205.4	15.63	15.63	0.00
6,593.0	84.10	0.10	6,287.9	224.0	49.7	224.3	13.15	12.63	-3.68
6,642.0	87.80	358.00	6,291.4	272.9	48.9	273.1	8.68	7.55	-4.29
6,690.0	88.20	357.50	6,293.0	320.8	47.0	321.0	1.33	0.83	-1.04
6,738.0	89.60	357.50	6,293.9	368.7	44.9	369.0	2.92	2.92	0.00
6,785.0	91.10	358.70	6,293.7	415.7	43.4	415.9	4.09	3.19	2.55
6,833.0	90.70	0.60	6,292.9	463.7	43.1	463.9	4.04	-0.83	3.96
6,882.0	91.50	0.50	6,292.0	512.7	43.6	512.9	1.65	1.63	-0.20
6,930.0	90.60	359.20	6,291.1	560.7	43.4	560.9	3.29	-1.88	-2.71
6,977.0	91.20	0.80	6,290.3	607.7	43.4	607.9	3.64	1.28	3.40
7,025.0	90.20	1.20	6,289.8	655.7	44.3	655.9	2.24	-2.08	0.83
7,073.0	91.00	359.80	6,289.3	703.7	44.7	703.9	3.36	1.67	-2.92
7,121.0	90.00	0.60	6,288.8	751.6	44.9	751.9	2.67	-2.08	1.67
7,168.0	90.70	359.20	6,288.6	798.6	44.8	798.9	3.33	1.49	-2.98
7,216.0	88.60	0.80	6,288.8	846.6	44.8	846.9	5.50	-4.38	3.33
7,262.0	88.80	0.80	6,289.9	892.6	45.4	892.9	0.43	0.43	0.00
7,310.0	89.40	359.20	6,290.6	940.6	45.4	940.8	3.56	1.25	-3.33
7,356.0	90.00	359.40	6,290.9	986.6	44.8	986.8	1.37	1.30	0.43
7,404.0	89.20	0.30	6,291.2	1,034.6	44.7	1,034.8	2.51	-1.67	1.88
7,452.0	89.80	0.80	6,291.6	1,082.6	45.2	1,082.8	1.63	1.25	1.04
7,500.0	91.00	1.30	6,291.3	1,130.6	46.1	1,130.8	2.71	2.50	1.04
7,547.0	90.60	1.20	6,290.6	1,177.6	47.1	1,177.8	0.88	-0.85	-0.21
7,595.0	91.50	1.30	6,289.8	1,225.6	48.1	1,225.8	1.89	1.88	0.21
7,642.0	90.00	358.00	6,289.2	1,272.5	47.8	1,272.8	7.71	-3.19	-7.02
7,690.0	89.40	357.50	6,289.4	1,320.5	46.0	1,320.7	1.63	-1.25	-1.04
7,783.0	89.50	357.80	6,290.3	1,413.4	42.2	1,413.6	0.34	0.11	0.32
7,879.0	89.60	356.40	6,291.1	1,509.3	37.3	1,509.5	1.46	0.10	-1.46
7,974.0	89.80	357.70	6,291.5	1,604.2	32.4	1,604.3	1.38	0.21	1.37
8,070.0	90.00	357.80	6,291.7	1,700.1	28.6	1,700.2	0.23	0.21	0.10
8,166.0	90.50	356.80	6,291.3	1,796.0	24.1	1,796.1	1.16	0.52	-1.04

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,261.0	90.50	357.10	6,290.5	1,890.8	19.1	1,890.9	0.32	0.00	0.32
8,354.0	90.70	358.00	6,289.5	1,983.8	15.1	1,983.8	0.99	0.22	0.97
8,448.0	90.00	0.10	6,288.9	2,077.7	13.5	2,077.8	2.35	-0.74	2.23
8,544.0	89.80	359.20	6,289.1	2,173.7	12.9	2,173.8	0.96	-0.21	-0.94
8,639.0	90.00	359.40	6,289.3	2,268.7	11.8	2,268.8	0.30	0.21	0.21
8,734.0	90.00	1.00	6,289.3	2,363.7	12.1	2,363.8	1.68	0.00	1.68
8,829.0	88.90	2.60	6,290.2	2,458.7	15.1	2,458.7	2.04	-1.16	1.68
8,925.0	89.10	1.70	6,291.8	2,554.6	18.7	2,554.6	0.96	0.21	-0.94
9,020.0	89.50	359.40	6,293.0	2,649.6	19.6	2,649.6	2.46	0.42	-2.42
9,115.0	89.60	1.20	6,293.7	2,744.6	20.1	2,744.6	1.90	0.11	1.89
9,211.0	88.50	359.80	6,295.3	2,840.5	20.9	2,840.6	1.85	-1.15	-1.46
9,307.0	90.50	0.60	6,296.2	2,936.5	21.3	2,936.6	2.24	2.08	0.83
9,402.0	91.10	0.50	6,294.9	3,031.5	22.2	3,031.6	0.64	0.63	-0.11
9,495.0	90.60	358.20	6,293.5	3,124.5	21.1	3,124.6	2.53	-0.54	-2.47
9,591.0	90.30	357.30	6,292.7	3,220.4	17.4	3,220.5	0.99	-0.31	-0.94
9,686.0	90.70	357.80	6,291.9	3,315.3	13.3	3,315.3	0.67	0.42	0.53
9,782.0	90.30	359.80	6,291.1	3,411.3	11.3	3,411.3	2.12	-0.42	2.08
9,878.0	90.60	1.50	6,290.3	3,507.3	12.4	3,507.3	1.80	0.31	1.77
9,974.0	89.70	2.60	6,290.0	3,603.2	15.8	3,603.2	1.48	-0.94	1.15
10,069.0	89.30	1.00	6,290.9	3,698.2	18.8	3,698.2	1.74	-0.42	-1.68
10,165.0	89.20	0.60	6,292.1	3,794.1	20.1	3,794.2	0.43	-0.10	-0.42
10,260.0	90.50	0.50	6,292.4	3,889.1	21.1	3,889.2	1.37	1.37	-0.11
10,357.0	91.10	1.00	6,291.0	3,986.1	22.3	3,986.2	0.81	0.62	0.52
10,451.0	90.50	359.20	6,289.7	4,080.1	22.5	4,080.2	2.02	-0.64	-1.91
10,547.0	89.50	359.20	6,289.7	4,176.1	21.1	4,176.1	1.04	-1.04	0.00
10,643.0	90.90	0.60	6,289.4	4,272.1	21.0	4,272.1	2.06	1.46	1.46
10,739.0	92.40	0.80	6,286.6	4,368.0	22.2	4,368.1	1.58	1.56	0.21
10,790.0	93.40	1.30	6,284.0	4,419.0	23.1	4,419.0	2.19	1.96	0.98
10,840.6	93.40	1.30	6,281.0	4,469.5	24.2	4,469.5	0.00	0.00	0.00
4 1/2									
10,847.7	93.40	1.30	6,280.6	4,476.6	24.4	4,476.7	0.00	0.00	0.00
BHL 470'FNL, 647'FWL									
10,850.0	93.40	1.30	6,280.5	4,478.8	24.4	4,478.9	0.00	0.00	0.00
TD Depth									

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
T1 470'FSL, 647'FWL - survey misses target center by 47.7ft at 6510.9ft MD (6271.2 TVD, 143.8 N, 48.6 E) - Point	0.00	0.00	6,291.0	138.4	5.6	1,377,837.15	3,324,367.74	40.364720	-104.335920
BHL 470'FNL, 647'FWL - survey misses target center by 12.9ft at 10847.7ft MD (6280.6 TVD, 4476.6 N, 24.4 E) - Point	0.00	0.00	6,291.0	4,477.4	16.7	1,382,175.67	3,324,321.93	40.376630	-104.335880

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Antelope 14-11-28HNB
Project:	SEC.28-T5N-R62W	TVD Reference:	WELL @ 4621.0ft (RKB - 17')
Site:	State Antelope J-28 Pad Sec.28-T5N-R62W	MD Reference:	WELL @ 4621.0ft (RKB - 17')
Well:	State Antelope 14-11-28HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
429.0	428.9	9 5/8"	9-5/8	12-1/4
6,444.4	6,248.4	7"	7	7-1/2
6,434.0	6,244.7	4 1/2	4-1/2	6
10,840.6	6,281.0	4 1/2	4-1/2	6

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.0	250.0	0.0	2.3	KOP #1
5,665.0	5,650.1	-319.9	7.0	KOP #2
10,850.0	6,280.5	4,478.8	24.4	TD Depth

Checked By: _____ Approved By: _____ Date: _____