

BONANZA CREEK ENERGY OPERATING

Well Name: **State Antelope K-O-30HNB**

Surface Location: State Antelope F-J-30HNB Pad Sec.30-T5N-R62W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

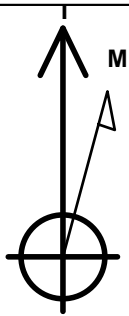
Ground Elevation: 4608.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381829.43	3314735.93	40.376020	-104.370300	

RKB - 15' WELL @ 4623.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 470'FSL, 2541'FEL	6359.0	-4145.8	1192.7	Point
LANDING PT. 531'FNL & 2518'FEL	6359.0	29.2	1262.2	Point



Azimuths to True North
Magnetic North: 8.41°

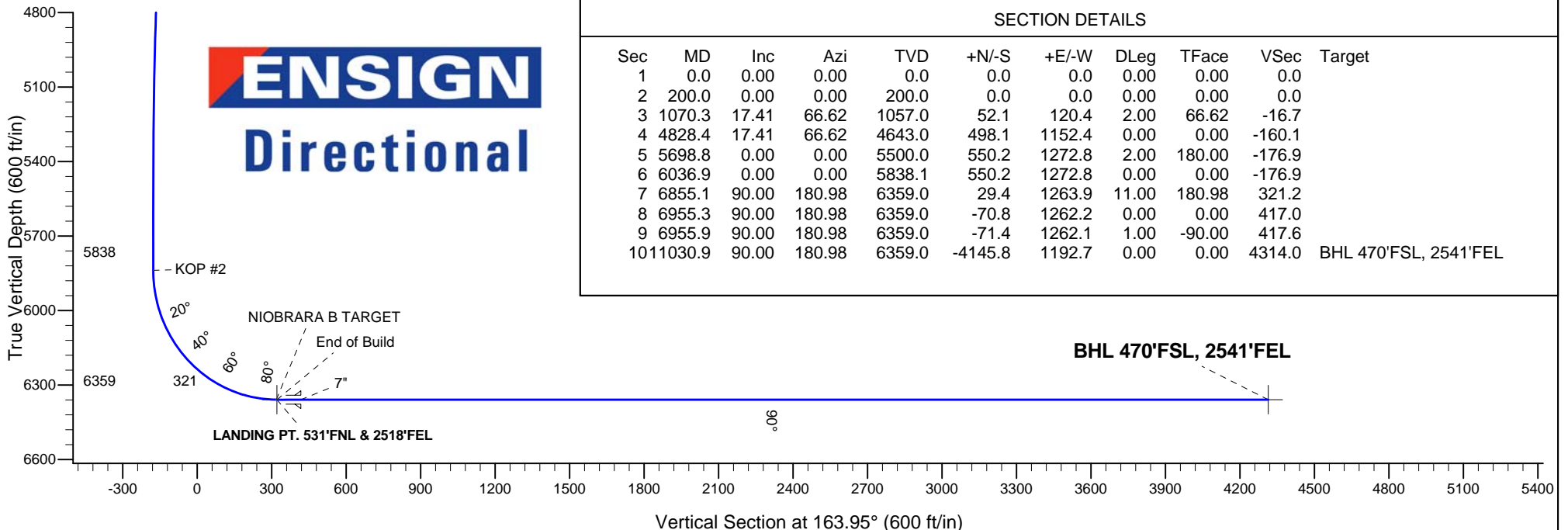
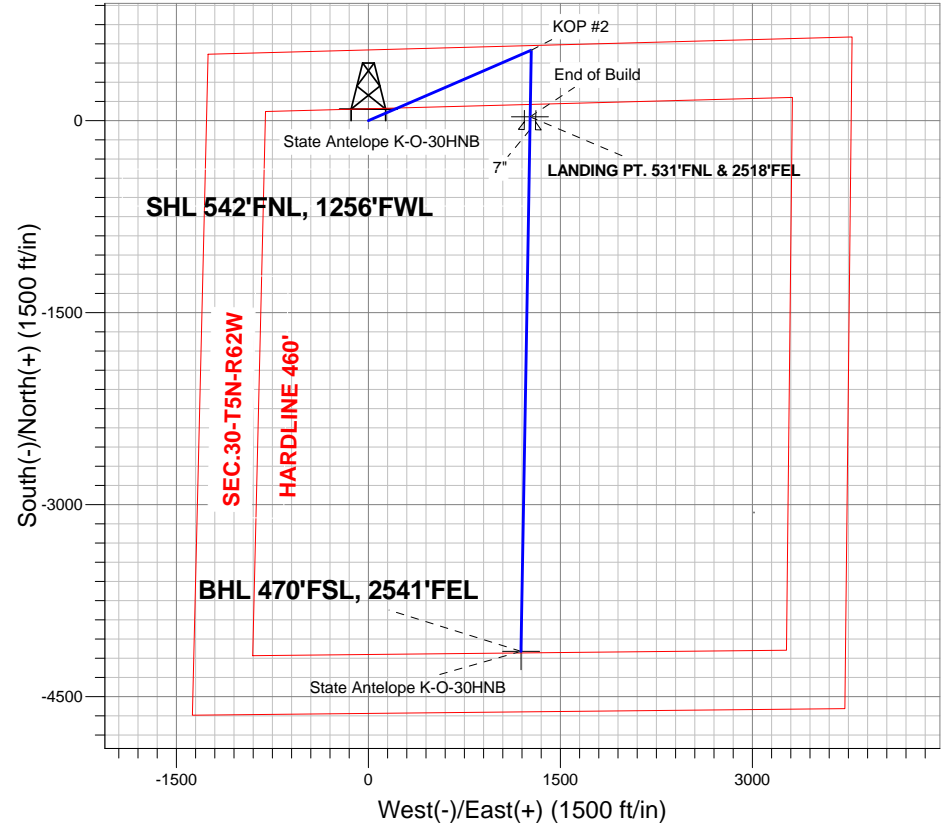
Magnetic Field
Strength: 52972.2nT
Dip Angle: 67.03°
Date: 4/3/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
5838.1	6036.9	KOP #2
6359.0	6855.1	End of Build

State Antelope F-J-30HNB Pad Sec.30-T5N-R62W
State Antelope K-O-30HNB
Plan #1 (4-03-13)

South(-)/North(+) (1500 ft/in)





Directional

BONANZA CREEK ENERGY OPERATING

SEC.30-T5N-R62W

State Antelope F-J-30HNB Pad Sec.30-T5N-R62W

State Antelope K-O-30HNB

Wellbore #1

Plan: Plan #1 (4-03-13)

Standard Planning Report

03 April, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well State Antelope K-O-30HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4623.0ft (RKB - 15')
Project:	SEC.30-T5N-R62W	MD Reference:	WELL @ 4623.0ft (RKB - 15')
Site:	State Antelope F-J-30HNB Pad Sec.30-T5N-R62W	North Reference:	True
Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Project	SEC.30-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 F-J-30HNB Pad Sec.30-T5N-R62W							
Site Position: From:			Lat/Long			Northing:		1,381,792.80ft		Latitude:		40.375920	
						Easting:		3,314,719.68ft		Longitude:		-104.370360	
Position Uncertainty:			0.0 ft			Slot Radius:		"		Grid Convergence:		0.73 °	

Well	State Antelope K-O-30HNB					
Well Position	+N/-S	36.4 ft	Northing:	1,381,829.43 ft	Latitude:	40.376020
	+E/-W	16.7 ft	Easting:	3,314,735.93 ft	Longitude:	-104.370300
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,608.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/3/2013	8.41	67.03	52,972

Design	Plan #1 (4-03-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	163.95

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,070.3	17.41	66.62	1,057.0	52.1	120.4	2.00	2.00	0.00	66.62	
4,828.4	17.41	66.62	4,643.0	498.1	1,152.4	0.00	0.00	0.00	0.00	
5,698.8	0.00	0.00	5,500.0	550.2	1,272.8	2.00	-2.00	0.00	180.00	
6,036.9	0.00	0.00	5,838.1	550.2	1,272.8	0.00	0.00	0.00	0.00	
6,855.1	90.00	180.98	6,359.0	29.4	1,263.9	11.00	11.00	0.00	180.98	
6,955.3	90.00	180.98	6,359.0	-70.8	1,262.2	0.00	0.00	0.00	0.00	
6,955.9	90.00	180.98	6,359.0	-71.4	1,262.1	1.00	0.00	-1.00	-90.00	
11,030.9	90.00	180.98	6,359.0	-4,145.8	1,192.7	0.00	0.00	0.00	0.00	BHL 470'FSL, 2541

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Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4623.0ft (RKB - 15')
Project:	SEC.30-T5N-R62W	MD Reference:	WELL @ 4623.0ft (RKB - 15')
Site:	State Antelope F-J-30HNB Pad	North Reference:	True
	Sec.30-T5N-R62W		
Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
240.0	0.80	66.62	240.0	0.1	0.3	0.0	2.00	2.00	0.00
280.0	1.60	66.62	280.0	0.4	1.0	-0.1	2.00	2.00	0.00
320.0	2.40	66.62	320.0	1.0	2.3	-0.3	2.00	2.00	0.00
360.0	3.20	66.62	359.9	1.8	4.1	-0.6	2.00	2.00	0.00
400.0	4.00	66.62	399.8	2.8	6.4	-0.9	2.00	2.00	0.00
440.0	4.80	66.62	439.7	4.0	9.2	-1.3	2.00	2.00	0.00
480.0	5.60	66.62	479.6	5.4	12.6	-1.7	2.00	2.00	0.00
520.0	6.40	66.62	519.3	7.1	16.4	-2.3	2.00	2.00	0.00
560.0	7.20	66.62	559.1	9.0	20.7	-2.9	2.00	2.00	0.00
600.0	8.00	66.62	598.7	11.1	25.6	-3.6	2.00	2.00	0.00
640.0	8.80	66.62	638.3	13.4	31.0	-4.3	2.00	2.00	0.00
680.0	9.60	66.62	677.8	15.9	36.8	-5.1	2.00	2.00	0.00
720.0	10.40	66.62	717.1	18.7	43.2	-6.0	2.00	2.00	0.00
760.0	11.20	66.62	756.4	21.6	50.1	-7.0	2.00	2.00	0.00
800.0	12.00	66.62	795.6	24.8	57.5	-8.0	2.00	2.00	0.00
840.0	12.80	66.62	834.7	28.2	65.3	-9.1	2.00	2.00	0.00
880.0	13.60	66.62	873.6	31.9	73.7	-10.2	2.00	2.00	0.00
920.0	14.40	66.62	912.4	35.7	82.6	-11.5	2.00	2.00	0.00
960.0	15.20	66.62	951.1	39.8	92.0	-12.8	2.00	2.00	0.00
1,000.0	16.00	66.62	989.6	44.0	101.9	-14.2	2.00	2.00	0.00
1,040.0	16.80	66.62	1,028.0	48.5	112.2	-15.6	2.00	2.00	0.00
1,070.3	17.41	66.62	1,057.0	52.1	120.4	-16.7	2.00	2.00	0.00
1,080.0	17.41	66.62	1,066.2	53.2	123.1	-17.1	0.00	0.00	0.00
1,120.0	17.41	66.62	1,104.4	58.0	134.1	-18.6	0.00	0.00	0.00
1,160.0	17.41	66.62	1,142.6	62.7	145.0	-20.2	0.00	0.00	0.00
1,200.0	17.41	66.62	1,180.7	67.4	156.0	-21.7	0.00	0.00	0.00
1,240.0	17.41	66.62	1,218.9	72.2	167.0	-23.2	0.00	0.00	0.00
1,280.0	17.41	66.62	1,257.1	76.9	178.0	-24.7	0.00	0.00	0.00
1,320.0	17.41	66.62	1,295.2	81.7	189.0	-26.3	0.00	0.00	0.00
1,360.0	17.41	66.62	1,333.4	86.4	200.0	-27.8	0.00	0.00	0.00
1,400.0	17.41	66.62	1,371.6	91.2	210.9	-29.3	0.00	0.00	0.00
1,440.0	17.41	66.62	1,409.7	95.9	221.9	-30.8	0.00	0.00	0.00
1,480.0	17.41	66.62	1,447.9	100.7	232.9	-32.4	0.00	0.00	0.00
1,520.0	17.41	66.62	1,486.1	105.4	243.9	-33.9	0.00	0.00	0.00
1,560.0	17.41	66.62	1,524.2	110.2	254.9	-35.4	0.00	0.00	0.00
1,600.0	17.41	66.62	1,562.4	114.9	265.9	-36.9	0.00	0.00	0.00
1,640.0	17.41	66.62	1,600.6	119.7	276.8	-38.5	0.00	0.00	0.00
1,680.0	17.41	66.62	1,638.8	124.4	287.8	-40.0	0.00	0.00	0.00
1,720.0	17.41	66.62	1,676.9	129.2	298.8	-41.5	0.00	0.00	0.00
1,760.0	17.41	66.62	1,715.1	133.9	309.8	-43.0	0.00	0.00	0.00
1,800.0	17.41	66.62	1,753.3	138.7	320.8	-44.6	0.00	0.00	0.00
1,840.0	17.41	66.62	1,791.4	143.4	331.8	-46.1	0.00	0.00	0.00
1,880.0	17.41	66.62	1,829.6	148.2	342.8	-47.6	0.00	0.00	0.00
1,920.0	17.41	66.62	1,867.8	152.9	353.7	-49.2	0.00	0.00	0.00
1,960.0	17.41	66.62	1,905.9	157.7	364.7	-50.7	0.00	0.00	0.00
2,000.0	17.41	66.62	1,944.1	162.4	375.7	-52.2	0.00	0.00	0.00

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Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Planned 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)
2,040.0	17.41	66.62	1,982.3	167.2	386.7	-53.7	0.00	0.00	0.00
2,080.0	17.41	66.62	2,020.4	171.9	397.7	-55.3	0.00	0.00	0.00
2,120.0	17.41	66.62	2,058.6	176.7	408.7	-56.8	0.00	0.00	0.00
2,160.0	17.41	66.62	2,096.8	181.4	419.6	-58.3	0.00	0.00	0.00
2,200.0	17.41	66.62	2,134.9	186.1	430.6	-59.8	0.00	0.00	0.00
2,240.0	17.41	66.62	2,173.1	190.9	441.6	-61.4	0.00	0.00	0.00
2,280.0	17.41	66.62	2,211.3	195.6	452.6	-62.9	0.00	0.00	0.00
2,320.0	17.41	66.62	2,249.4	200.4	463.6	-64.4	0.00	0.00	0.00
2,360.0	17.41	66.62	2,287.6	205.1	474.6	-65.9	0.00	0.00	0.00
2,400.0	17.41	66.62	2,325.8	209.9	485.5	-67.5	0.00	0.00	0.00
2,440.0	17.41	66.62	2,363.9	214.6	496.5	-69.0	0.00	0.00	0.00
2,480.0	17.41	66.62	2,402.1	219.4	507.5	-70.5	0.00	0.00	0.00
2,520.0	17.41	66.62	2,440.3	224.1	518.5	-72.0	0.00	0.00	0.00
2,560.0	17.41	66.62	2,478.5	228.9	529.5	-73.6	0.00	0.00	0.00
2,600.0	17.41	66.62	2,516.6	233.6	540.5	-75.1	0.00	0.00	0.00
2,640.0	17.41	66.62	2,554.8	238.4	551.4	-76.6	0.00	0.00	0.00
2,680.0	17.41	66.62	2,593.0	243.1	562.4	-78.2	0.00	0.00	0.00
2,720.0	17.41	66.62	2,631.1	247.9	573.4	-79.7	0.00	0.00	0.00
2,760.0	17.41	66.62	2,669.3	252.6	584.4	-81.2	0.00	0.00	0.00
2,800.0	17.41	66.62	2,707.5	257.4	595.4	-82.7	0.00	0.00	0.00
2,840.0	17.41	66.62	2,745.6	262.1	606.4	-84.3	0.00	0.00	0.00
2,880.0	17.41	66.62	2,783.8	266.9	617.3	-85.8	0.00	0.00	0.00
2,920.0	17.41	66.62	2,822.0	271.6	628.3	-87.3	0.00	0.00	0.00
2,960.0	17.41	66.62	2,860.1	276.4	639.3	-88.8	0.00	0.00	0.00
3,000.0	17.41	66.62	2,898.3	281.1	650.3	-90.4	0.00	0.00	0.00
3,040.0	17.41	66.62	2,936.5	285.9	661.3	-91.9	0.00	0.00	0.00
3,080.0	17.41	66.62	2,974.6	290.6	672.3	-93.4	0.00	0.00	0.00
3,120.0	17.41	66.62	3,012.8	295.4	683.3	-94.9	0.00	0.00	0.00
3,160.0	17.41	66.62	3,051.0	300.1	694.2	-96.5	0.00	0.00	0.00
3,200.0	17.41	66.62	3,089.1	304.8	705.2	-98.0	0.00	0.00	0.00
3,240.0	17.41	66.62	3,127.3	309.6	716.2	-99.5	0.00	0.00	0.00
3,280.0	17.41	66.62	3,165.5	314.3	727.2	-101.0	0.00	0.00	0.00
3,320.0	17.41	66.62	3,203.6	319.1	738.2	-102.6	0.00	0.00	0.00
3,360.0	17.41	66.62	3,241.8	323.8	749.2	-104.1	0.00	0.00	0.00
3,400.0	17.41	66.62	3,280.0	328.6	760.1	-105.6	0.00	0.00	0.00
3,440.0	17.41	66.62	3,318.2	333.3	771.1	-107.1	0.00	0.00	0.00
3,480.0	17.41	66.62	3,356.3	338.1	782.1	-108.7	0.00	0.00	0.00
3,520.0	17.41	66.62	3,394.5	342.8	793.1	-110.2	0.00	0.00	0.00
3,560.0	17.41	66.62	3,432.7	347.6	804.1	-111.7	0.00	0.00	0.00
3,600.0	17.41	66.62	3,470.8	352.3	815.1	-113.3	0.00	0.00	0.00
3,640.0	17.41	66.62	3,509.0	357.1	826.0	-114.8	0.00	0.00	0.00
3,680.0	17.41	66.62	3,547.2	361.8	837.0	-116.3	0.00	0.00	0.00
3,720.0	17.41	66.62	3,585.3	366.6	848.0	-117.8	0.00	0.00	0.00
3,760.0	17.41	66.62	3,623.5	371.3	859.0	-119.4	0.00	0.00	0.00
3,800.0	17.41	66.62	3,661.7	376.1	870.0	-120.9	0.00	0.00	0.00
3,840.0	17.41	66.62	3,699.8	380.8	881.0	-122.4	0.00	0.00	0.00
3,880.0	17.41	66.62	3,738.0	385.6	891.9	-123.9	0.00	0.00	0.00
3,920.0	17.41	66.62	3,776.2	390.3	902.9	-125.5	0.00	0.00	0.00
3,960.0	17.41	66.62	3,814.3	395.1	913.9	-127.0	0.00	0.00	0.00
4,000.0	17.41	66.62	3,852.5	399.8	924.9	-128.5	0.00	0.00	0.00
4,040.0	17.41	66.62	3,890.7	404.6	935.9	-130.0	0.00	0.00	0.00
4,080.0	17.41	66.62	3,928.8	409.3	946.9	-131.6	0.00	0.00	0.00
4,120.0	17.41	66.62	3,967.0	414.1	957.8	-133.1	0.00	0.00	0.00

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Site:	State Antelope F-J-30HNB Pad	North Reference:	True
	Sec.30-T5N-R62W		
Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Planned 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)
4,160.0	17.41	66.62	4,005.2	418.8	968.8	-134.6	0.00	0.00	0.00
4,200.0	17.41	66.62	4,043.4	423.6	979.8	-136.1	0.00	0.00	0.00
4,240.0	17.41	66.62	4,081.5	428.3	990.8	-137.7	0.00	0.00	0.00
4,280.0	17.41	66.62	4,119.7	433.0	1,001.8	-139.2	0.00	0.00	0.00
4,320.0	17.41	66.62	4,157.9	437.8	1,012.8	-140.7	0.00	0.00	0.00
4,360.0	17.41	66.62	4,196.0	442.5	1,023.8	-142.3	0.00	0.00	0.00
4,400.0	17.41	66.62	4,234.2	447.3	1,034.7	-143.8	0.00	0.00	0.00
4,440.0	17.41	66.62	4,272.4	452.0	1,045.7	-145.3	0.00	0.00	0.00
4,480.0	17.41	66.62	4,310.5	456.8	1,056.7	-146.8	0.00	0.00	0.00
4,520.0	17.41	66.62	4,348.7	461.5	1,067.7	-148.4	0.00	0.00	0.00
4,560.0	17.41	66.62	4,386.9	466.3	1,078.7	-149.9	0.00	0.00	0.00
4,600.0	17.41	66.62	4,425.0	471.0	1,089.7	-151.4	0.00	0.00	0.00
4,640.0	17.41	66.62	4,463.2	475.8	1,100.6	-152.9	0.00	0.00	0.00
4,680.0	17.41	66.62	4,501.4	480.5	1,111.6	-154.5	0.00	0.00	0.00
4,720.0	17.41	66.62	4,539.5	485.3	1,122.6	-156.0	0.00	0.00	0.00
4,760.0	17.41	66.62	4,577.7	490.0	1,133.6	-157.5	0.00	0.00	0.00
4,800.0	17.41	66.62	4,615.9	494.8	1,144.6	-159.0	0.00	0.00	0.00
4,828.4	17.41	66.62	4,643.0	498.1	1,152.4	-160.1	0.00	0.00	0.00
4,840.0	17.18	66.62	4,654.0	499.5	1,155.5	-160.6	2.00	-2.00	0.00
4,880.0	16.38	66.62	4,692.3	504.1	1,166.1	-162.0	2.00	-2.00	0.00
4,920.0	15.58	66.62	4,730.8	508.5	1,176.2	-163.4	2.00	-2.00	0.00
4,960.0	14.78	66.62	4,769.4	512.6	1,185.9	-164.8	2.00	-2.00	0.00
5,000.0	13.98	66.62	4,808.2	516.6	1,195.0	-166.0	2.00	-2.00	0.00
5,040.0	13.18	66.62	4,847.0	520.3	1,203.6	-167.2	2.00	-2.00	0.00
5,080.0	12.38	66.62	4,886.0	523.8	1,211.7	-168.4	2.00	-2.00	0.00
5,120.0	11.58	66.62	4,925.2	527.1	1,219.3	-169.4	2.00	-2.00	0.00
5,160.0	10.78	66.62	4,964.4	530.2	1,226.4	-170.4	2.00	-2.00	0.00
5,200.0	9.98	66.62	5,003.8	533.0	1,233.0	-171.3	2.00	-2.00	0.00
5,240.0	9.18	66.62	5,043.2	535.7	1,239.2	-172.2	2.00	-2.00	0.00
5,280.0	8.38	66.62	5,082.7	538.1	1,244.8	-173.0	2.00	-2.00	0.00
5,320.0	7.58	66.62	5,122.3	540.3	1,249.9	-173.7	2.00	-2.00	0.00
5,360.0	6.78	66.62	5,162.0	542.3	1,254.4	-174.3	2.00	-2.00	0.00
5,400.0	5.98	66.62	5,201.8	544.0	1,258.5	-174.9	2.00	-2.00	0.00
5,440.0	5.18	66.62	5,241.6	545.6	1,262.1	-175.4	2.00	-2.00	0.00
5,480.0	4.38	66.62	5,281.5	546.9	1,265.1	-175.8	2.00	-2.00	0.00
5,520.0	3.58	66.62	5,321.4	548.0	1,267.7	-176.1	2.00	-2.00	0.00
5,560.0	2.78	66.62	5,361.3	548.9	1,269.7	-176.4	2.00	-2.00	0.00
5,600.0	1.98	66.62	5,401.3	549.5	1,271.2	-176.6	2.00	-2.00	0.00
5,640.0	1.18	66.62	5,441.2	550.0	1,272.2	-176.8	2.00	-2.00	0.00
5,680.0	0.38	66.62	5,481.2	550.2	1,272.7	-176.9	2.00	-2.00	0.00
5,698.8	0.00	0.00	5,500.0	550.2	1,272.8	-176.9	2.00	-2.00	0.00
5,720.0	0.00	0.00	5,521.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,760.0	0.00	0.00	5,561.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,601.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,840.0	0.00	0.00	5,641.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,880.0	0.00	0.00	5,681.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,920.0	0.00	0.00	5,721.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
5,960.0	0.00	0.00	5,761.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,801.2	550.2	1,272.8	-176.9	0.00	0.00	0.00
6,036.9	0.00	0.00	5,838.1	550.2	1,272.8	-176.9	0.00	0.00	0.00
KOP #2									
6,040.0	0.34	180.98	5,841.2	550.2	1,272.8	-176.8	11.06	11.06	0.00
6,080.0	4.74	180.98	5,881.2	548.4	1,272.8	-175.2	11.00	11.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Antelope K-O-30HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4623.0ft (RKB - 15')
Project:	SEC.30-T5N-R62W	MD Reference:	WELL @ 4623.0ft (RKB - 15')
Site:	State Antelope F-J-30HNB Pad	North Reference:	True
	Sec.30-T5N-R62W		
Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Planned 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)
6,120.0	9.14	180.98	5,920.9	543.6	1,272.7	-170.5	11.00	11.00	0.00
6,160.0	13.54	180.98	5,960.1	535.7	1,272.6	-163.0	11.00	11.00	0.00
6,200.0	17.94	180.98	5,998.6	524.9	1,272.4	-152.6	11.00	11.00	0.00
6,240.0	22.34	180.98	6,036.1	511.1	1,272.1	-139.5	11.00	11.00	0.00
6,280.0	26.74	180.98	6,072.5	494.5	1,271.8	-123.6	11.00	11.00	0.00
6,320.0	31.14	180.98	6,107.5	475.1	1,271.5	-105.1	11.00	11.00	0.00
6,360.0	35.54	180.98	6,140.9	453.2	1,271.1	-84.1	11.00	11.00	0.00
6,400.0	39.94	180.98	6,172.5	428.7	1,270.7	-60.7	11.00	11.00	0.00
6,440.0	44.34	180.98	6,202.2	401.9	1,270.3	-35.0	11.00	11.00	0.00
6,480.0	48.74	180.98	6,229.7	372.8	1,269.8	-7.3	11.00	11.00	0.00
6,520.0	53.14	180.98	6,254.9	341.8	1,269.2	22.4	11.00	11.00	0.00
6,560.0	57.54	180.98	6,277.6	308.9	1,268.7	53.9	11.00	11.00	0.00
6,600.0	61.94	180.98	6,297.8	274.4	1,268.1	86.9	11.00	11.00	0.00
6,640.0	66.34	180.98	6,315.2	238.4	1,267.5	121.3	11.00	11.00	0.00
6,680.0	70.74	180.98	6,329.9	201.2	1,266.8	156.9	11.00	11.00	0.00
6,720.0	75.14	180.98	6,341.6	162.9	1,266.2	193.5	11.00	11.00	0.00
6,760.0	79.54	180.98	6,350.3	123.9	1,265.5	230.8	11.00	11.00	0.00
6,800.0	83.94	180.98	6,356.1	84.4	1,264.8	268.6	11.00	11.00	0.00
6,840.0	88.34	180.98	6,358.8	44.5	1,264.1	306.8	11.00	11.00	0.00
6,852.5	89.44	180.98	6,359.0	31.9	1,263.9	318.7	8.78	8.78	0.00
NIORARA B TARGET									
6,855.1	90.00	180.98	6,359.0	29.4	1,263.9	321.2	21.71	21.71	0.00
End of Build									
6,880.0	90.00	180.98	6,359.0	4.5	1,263.4	345.0	0.00	0.00	0.00
6,920.0	90.00	180.98	6,359.0	-35.5	1,262.8	383.3	0.00	0.00	0.00
6,955.3	90.00	180.98	6,359.0	-70.8	1,262.2	417.0	0.00	0.00	0.00
6,955.9	90.00	180.98	6,359.0	-71.4	1,262.1	417.6	0.98	0.00	-0.98
7"									
6,960.0	90.00	180.98	6,359.0	-75.5	1,262.1	421.5	0.00	0.00	0.00
7,000.0	90.00	180.98	6,359.0	-115.5	1,261.4	459.7	0.00	0.00	0.00
7,040.0	90.00	180.98	6,359.0	-155.5	1,260.7	498.0	0.00	0.00	0.00
7,080.0	90.00	180.98	6,359.0	-195.5	1,260.0	536.2	0.00	0.00	0.00
7,120.0	90.00	180.98	6,359.0	-235.5	1,259.3	574.5	0.00	0.00	0.00
7,160.0	90.00	180.98	6,359.0	-275.5	1,258.7	612.7	0.00	0.00	0.00
7,200.0	90.00	180.98	6,359.0	-315.5	1,258.0	651.0	0.00	0.00	0.00
7,240.0	90.00	180.98	6,359.0	-355.5	1,257.3	689.2	0.00	0.00	0.00
7,280.0	90.00	180.98	6,359.0	-395.5	1,256.6	727.5	0.00	0.00	0.00
7,320.0	90.00	180.98	6,359.0	-435.5	1,255.9	765.7	0.00	0.00	0.00
7,360.0	90.00	180.98	6,359.0	-475.5	1,255.3	804.0	0.00	0.00	0.00
7,400.0	90.00	180.98	6,359.0	-515.4	1,254.6	842.2	0.00	0.00	0.00
7,440.0	90.00	180.98	6,359.0	-555.4	1,253.9	880.5	0.00	0.00	0.00
7,480.0	90.00	180.98	6,359.0	-595.4	1,253.2	918.7	0.00	0.00	0.00
7,520.0	90.00	180.98	6,359.0	-635.4	1,252.5	957.0	0.00	0.00	0.00
7,560.0	90.00	180.98	6,359.0	-675.4	1,251.8	995.2	0.00	0.00	0.00
7,600.0	90.00	180.98	6,359.0	-715.4	1,251.2	1,033.4	0.00	0.00	0.00
7,640.0	90.00	180.98	6,359.0	-755.4	1,250.5	1,071.7	0.00	0.00	0.00
7,680.0	90.00	180.98	6,359.0	-795.4	1,249.8	1,109.9	0.00	0.00	0.00
7,720.0	90.00	180.98	6,359.0	-835.4	1,249.1	1,148.2	0.00	0.00	0.00
7,760.0	90.00	180.98	6,359.0	-875.4	1,248.4	1,186.4	0.00	0.00	0.00
7,800.0	90.00	180.98	6,359.0	-915.4	1,247.8	1,224.7	0.00	0.00	0.00
7,840.0	90.00	180.98	6,359.0	-955.4	1,247.1	1,262.9	0.00	0.00	0.00
7,880.0	90.00	180.98	6,359.0	-995.4	1,246.4	1,301.2	0.00	0.00	0.00
7,920.0	90.00	180.98	6,359.0	-1,035.4	1,245.7	1,339.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Antelope K-O-30HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4623.0ft (RKB - 15')
Project:	SEC.30-T5N-R62W	MD Reference:	WELL @ 4623.0ft (RKB - 15')
Site:	State Antelope F-J-30HNB Pad	North Reference:	True
	Sec.30-T5N-R62W		
Well:	State Antelope K-O-30HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-03-13)		

Planned 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)
7,960.0	90.00	180.98	6,359.0	-1,075.4	1,245.0	1,377.7	0.00	0.00	0.00
8,000.0	90.00	180.98	6,359.0	-1,115.4	1,244.3	1,415.9	0.00	0.00	0.00
8,040.0	90.00	180.98	6,359.0	-1,155.4	1,243.7	1,454.2	0.00	0.00	0.00
8,080.0	90.00	180.98	6,359.0	-1,195.4	1,243.0	1,492.4	0.00	0.00	0.00
8,120.0	90.00	180.98	6,359.0	-1,235.3	1,242.3	1,530.7	0.00	0.00	0.00
8,160.0	90.00	180.98	6,359.0	-1,275.3	1,241.6	1,568.9	0.00	0.00	0.00
8,200.0	90.00	180.98	6,359.0	-1,315.3	1,240.9	1,607.2	0.00	0.00	0.00
8,240.0	90.00	180.98	6,359.0	-1,355.3	1,240.3	1,645.4	0.00	0.00	0.00
8,280.0	90.00	180.98	6,359.0	-1,395.3	1,239.6	1,683.6	0.00	0.00	0.00
8,320.0	90.00	180.98	6,359.0	-1,435.3	1,238.9	1,721.9	0.00	0.00	0.00
8,360.0	90.00	180.98	6,359.0	-1,475.3	1,238.2	1,760.1	0.00	0.00	0.00
8,400.0	90.00	180.98	6,359.0	-1,515.3	1,237.5	1,798.4	0.00	0.00	0.00
8,440.0	90.00	180.98	6,359.0	-1,555.3	1,236.8	1,836.6	0.00	0.00	0.00
8,480.0	90.00	180.98	6,359.0	-1,595.3	1,236.2	1,874.9	0.00	0.00	0.00
8,520.0	90.00	180.98	6,359.0	-1,635.3	1,235.5	1,913.1	0.00	0.00	0.00
8,560.0	90.00	180.98	6,359.0	-1,675.3	1,234.8	1,951.4	0.00	0.00	0.00
8,600.0	90.00	180.98	6,359.0	-1,715.3	1,234.1	1,989.6	0.00	0.00	0.00
8,640.0	90.00	180.98	6,359.0	-1,755.3	1,233.4	2,027.9	0.00	0.00	0.00
8,680.0	90.00	180.98	6,359.0	-1,795.3	1,232.8	2,066.1	0.00	0.00	0.00
8,720.0	90.00	180.98	6,359.0	-1,835.3	1,232.1	2,104.4	0.00	0.00	0.00
8,760.0	90.00	180.98	6,359.0	-1,875.3	1,231.4	2,142.6	0.00	0.00	0.00
8,800.0	90.00	180.98	6,359.0	-1,915.2	1,230.7	2,180.9	0.00	0.00	0.00
8,840.0	90.00	180.98	6,359.0	-1,955.2	1,230.0	2,219.1	0.00	0.00	0.00
8,880.0	90.00	180.98	6,359.0	-1,995.2	1,229.4	2,257.3	0.00	0.00	0.00
8,920.0	90.00	180.98	6,359.0	-2,035.2	1,228.7	2,295.6	0.00	0.00	0.00
8,960.0	90.00	180.98	6,359.0	-2,075.2	1,228.0	2,333.8	0.00	0.00	0.00
9,000.0	90.00	180.98	6,359.0	-2,115.2	1,227.3	2,372.1	0.00	0.00	0.00
9,040.0	90.00	180.98	6,359.0	-2,155.2	1,226.6	2,410.3	0.00	0.00	0.00
9,080.0	90.00	180.98	6,359.0	-2,195.2	1,225.9	2,448.6	0.00	0.00	0.00
9,120.0	90.00	180.98	6,359.0	-2,235.2	1,225.3	2,486.8	0.00	0.00	0.00
9,160.0	90.00	180.98	6,359.0	-2,275.2	1,224.6	2,525.1	0.00	0.00	0.00
9,200.0	90.00	180.98	6,359.0	-2,315.2	1,223.9	2,563.3	0.00	0.00	0.00
9,240.0	90.00	180.98	6,359.0	-2,355.2	1,223.2	2,601.6	0.00	0.00	0.00
9,280.0	90.00	180.98	6,359.0	-2,395.2	1,222.5	2,639.8	0.00	0.00	0.00
9,320.0	90.00	180.98	6,359.0	-2,435.2	1,221.9	2,678.1	0.00	0.00	0.00
9,360.0	90.00	180.98	6,359.0	-2,475.2	1,221.2	2,716.3	0.00	0.00	0.00
9,400.0	90.00	180.98	6,359.0	-2,515.2	1,220.5	2,754.6	0.00	0.00	0.00
9,440.0	90.00	180.98	6,359.0	-2,555.2	1,219.8	2,792.8	0.00	0.00	0.00
9,480.0	90.00	180.98	6,359.0	-2,595.1	1,219.1	2,831.0	0.00	0.00	0.00
9,520.0	90.00	180.98	6,359.0	-2,635.1	1,218.4	2,869.3	0.00	0.00	0.00
9,560.0	90.00	180.98	6,359.0	-2,675.1	1,217.8	2,907.5	0.00	0.00	0.00
9,600.0	90.00	180.98	6,359.0	-2,715.1	1,217.1	2,945.8	0.00	0.00	0.00
9,640.0	90.00	180.98	6,359.0	-2,755.1	1,216.4	2,984.0	0.00	0.00	0.00
9,680.0	90.00	180.98	6,359.0	-2,795.1	1,215.7	3,022.3	0.00	0.00	0.00
9,720.0	90.00	180.98	6,359.0	-2,835.1	1,215.0	3,060.5	0.00	0.00	0.00
9,760.0	90.00	180.98	6,359.0	-2,875.1	1,214.4	3,098.8	0.00	0.00	0.00
9,800.0	90.00	180.98	6,359.0	-2,915.1	1,213.7	3,137.0	0.00	0.00	0.00
9,840.0	90.00	180.98	6,359.0	-2,955.1	1,213.0	3,175.3	0.00	0.00	0.00
9,880.0	90.00	180.98	6,359.0	-2,995.1	1,212.3	3,213.5	0.00	0.00	0.00
9,920.0	90.00	180.98	6,359.0	-3,035.1	1,211.6	3,251.8	0.00	0.00	0.00
9,960.0	90.00	180.98	6,359.0	-3,075.1	1,210.9	3,290.0	0.00	0.00	0.00
10,000.0	90.00	180.98	6,359.0	-3,115.1	1,210.3	3,328.3	0.00	0.00	0.00
10,040.0	90.00	180.98	6,359.0	-3,155.1	1,209.6	3,366.5	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	200.0	200.0	0.0	0.0	KOP #1
	6,036.9	5,838.1	550.2	1,272.8	KOP #2
	6,855.1	6,359.0	29.4	1,263.9	End of Build