



Enseco Planning Report

28 October, 2013

Bonanza Creek Energy, Inc

Weld County, Colorado

NW NW, Sec 3, T4N, R62W, 6 PM

State Seventy Holes A11-E14-3HNB

API #: TBA

Design: Proposal #1 (13348-241)



Design Target Details							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
WC SSH A11-E14-3HNB (13348-241)	0.00	0.00	0.00	1371680.60	3328957.33	40.347655°N	104.319745°W
KOP (1) (13348-241)	5638.89	499.69	-327.29	1372175.87	3328623.44	40.349027°N	104.320919°W
BH SSH A11-E14-3HNB (13348-241)	6183.70	-4467.14	-38.47	1367213.54	3328978.32	40.335393°N	104.319883°W
Tgt SSH A11-E14-3HNB (13348-241)	6183.70	-85.97	-293.23	1371590.74	3328665.28	40.347419°N	104.320797°W

Azimuths to True North
Magnetic North: 8.30°

Magnetic Field
Strength: 52902.9snT
Dip Angle: 67.00°
Date: 28-Oct-2013
Model: IGRF2010

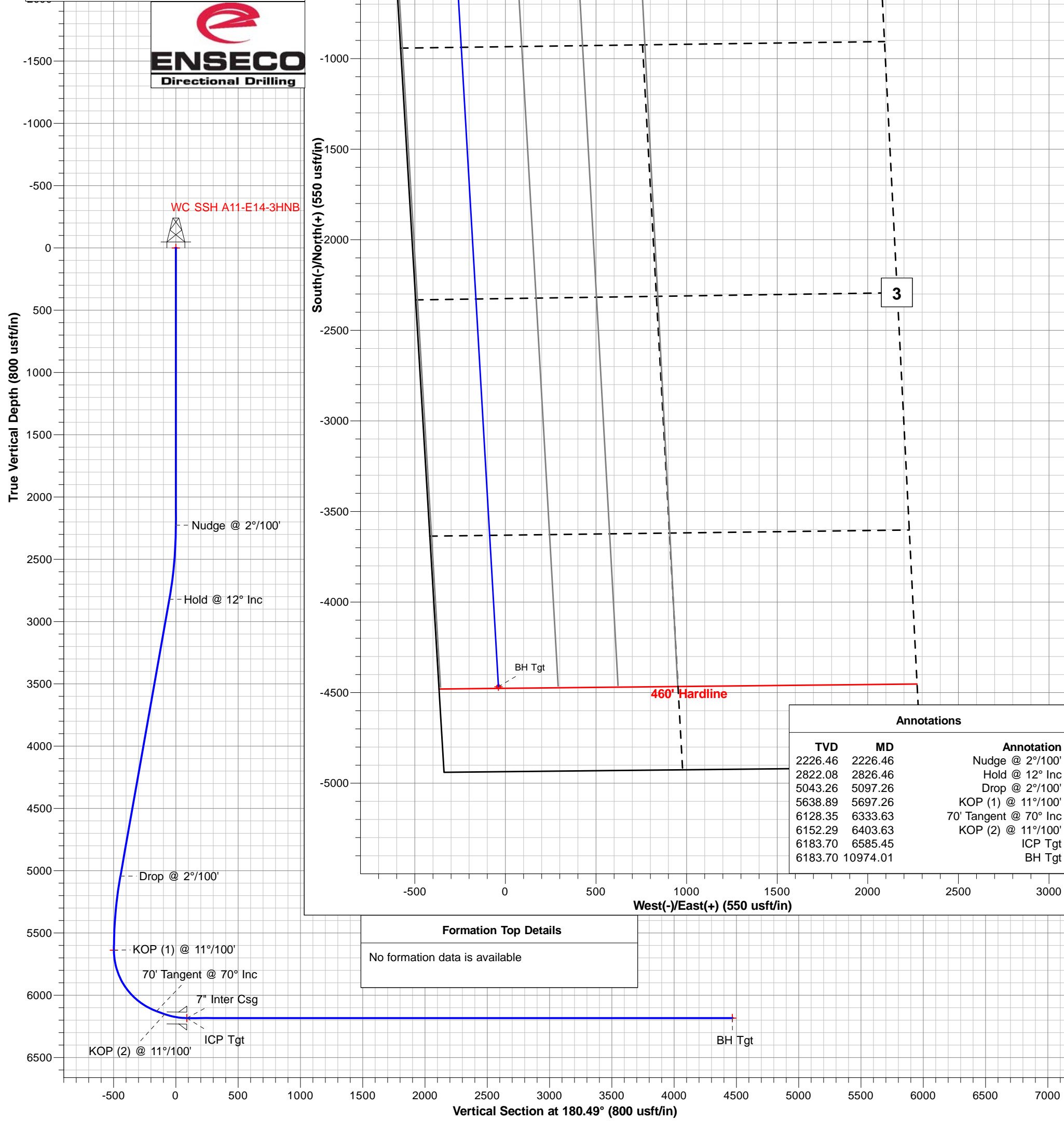
NW NW, Sec 3, T4N, R62W, 6 PM

North American Datum 1983
WC Northing: 1371680.60
WC Easting: 3328957.33
WC Latitude: 40.347655°N
WC Longitude: 104.319745°W
Convergence: 0.763
Local North: True

Project Details: Weld County, Colorado

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level
GL Elev: 4533.70
Kb Elev: Est. Kb @ 4546.70usft (Proposed)



Company:	Bonanza Creek Energy, Inc	Local Co-ordinate Ref:	State Seventy Holes A11-E14-3HNB
Project:	Weld County, Colorado	Ground Level Elevation:	4,533.7usft
Site:	NW NW, Sec 3, T4N, R62W, 6 PM	Wellhead Elevation:	Est. Kb @ 4546.70usft (Proposed)
Well:	State Seventy Holes A11-E14-3HNB	North Reference:	True
Wellbore:	API #: TBA	Survey Calculation Method:	Minimum Curvature
Design:	Proposal #1 (13348-241)	Database:	EDM5000

Project	Weld County, Colorado		
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	NW NW, Sec 3, T4N, R62W, 6 PM Site Position: WC State Seventy Holes 11-14-3HNB		
Site Position:		Northing:	1,371,760.33 usft
From:	Map	Easting:	3,328,952.65 usft
Position Uncertainty:	0.00usft	Slot Radius:	13-3/16 "
		Latitude:	40.347874°N
		Longitude:	104.319758°W
		Grid Convergence:	0.763°

Well	State Seventy Holes A11-E14-3HNB					
Well Position	+N/-S	-79.79 usft	Northing:	1,371,680.60 usft	Latitude:	40.347655°N
	+E/-W	3.62 usft	Easting:	3,328,957.33 usft	Longitude:	104.319745°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	4,546.70 usft	Ground Level:	4,533.70 usft

Wellbore	API #: TBA				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	28-Oct-13	8.299	66.998	52,903

Design	Proposal #1 (13348-241)				
Audit Notes:					
Version:	P1.0	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.00	0.00	0.00	180.49

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft	Build Rate (°/100usft	Turn Rate (°/100usft	TFO (°)	Target
0.00	0.00	0.00	0.00	4,546.70	0.00	0.00	0.00	0.00	0.00	0.000	KOP (1) (13348-241)
2,226.46	0.00	0.00	2,226.46	2,320.24	0.00	0.00	0.00	0.00	0.00	0.000	
2,826.46	12.00	326.78	2,822.08	1,724.62	52.37	-34.30	2.00	2.00	0.00	326.776	
5,097.26	12.00	326.78	5,043.26	-496.56	447.32	-292.99	0.00	0.00	0.00	0.000	
5,697.26	0.00	0.00	5,638.89	-1,092.19	499.69	-327.29	2.00	-2.00	0.00	180.000	
6,333.63	70.00	176.67	6,128.35	-1,581.65	157.54	-307.39	11.00	11.00	0.00	176.672	
6,403.63	70.00	176.67	6,152.29	-1,605.59	91.88	-303.57	0.00	0.00	0.00	0.000	
6,585.45	90.00	176.67	6,183.70	-1,637.00	-85.97	-293.23	11.00	11.00	0.00	0.000	Tgt SSH A11-E14-3HNB (13348-241)
10,974.01	90.00	176.67	6,183.70	-1,637.00	-4,467.14	-38.47	0.00	0.00	0.00	0.000	BH SSH A11-E14-3HNB (13348-241)

Company:	Bonanza Creek Energy, Inc	Local Co-ordinate Ref:	State Seventy Holes A11-E14-3HNB
Project:	Weld County, Colorado	Ground Level Elevation:	4,533.7usft
Site:	NW NW, Sec 3, T4N, R62W, 6 PM	Wellhead Elevation:	Est. Kb @ 4546.70usft (Proposed)
Well:	State Seventy Holes A11-E14-3HNB	North Reference:	True
Wellbore:	API #: TBA	Survey Calculation Method:	Minimum Curvature
Design:	Proposal #1 (13348-241)	Database:	EDM5000

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Nudge @ 2°/100'										
2,226.46	0.00	0.00	2,226.46	2,320.24	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	1.47	326.78	2,299.99	2,246.71	0.79	-0.52	-0.79	2.00	2.00	0.00
2,400.00	3.47	326.78	2,399.89	2,146.81	4.40	-2.88	-4.37	2.00	2.00	0.00
2,500.00	5.47	326.78	2,499.58	2,047.12	10.92	-7.15	-10.85	2.00	2.00	0.00
2,600.00	7.47	326.78	2,598.94	1,947.76	20.34	-13.32	-20.23	2.00	2.00	0.00
2,700.00	9.47	326.78	2,697.85	1,848.85	32.67	-21.40	-32.48	2.00	2.00	0.00
2,800.00	11.47	326.78	2,796.18	1,750.52	47.87	-31.35	-47.60	2.00	2.00	0.00
Hold @ 12° Inc										
2,826.46	12.00	326.78	2,822.08	1,724.62	52.37	-34.30	-52.07	2.00	2.00	0.00
2,900.00	12.00	326.78	2,894.02	1,652.68	65.16	-42.68	-64.79	0.00	0.00	0.00
3,000.00	12.00	326.78	2,991.83	1,554.87	82.55	-54.07	-82.08	0.00	0.00	0.00
3,100.00	12.00	326.78	3,089.65	1,457.05	99.95	-65.46	-99.38	0.00	0.00	0.00
3,200.00	12.00	326.78	3,187.46	1,359.24	117.34	-76.85	-116.67	0.00	0.00	0.00
3,300.00	12.00	326.78	3,285.28	1,261.42	134.73	-88.25	-133.97	0.00	0.00	0.00
3,400.00	12.00	326.78	3,383.09	1,163.61	152.12	-99.64	-151.26	0.00	0.00	0.00
3,500.00	12.00	326.78	3,480.90	1,065.80	169.52	-111.03	-168.55	0.00	0.00	0.00
3,600.00	12.00	326.78	3,578.72	967.98	186.91	-122.42	-185.85	0.00	0.00	0.00
3,700.00	12.00	326.78	3,676.53	870.17	204.30	-133.81	-203.14	0.00	0.00	0.00
3,800.00	12.00	326.78	3,774.35	772.35	221.69	-145.21	-220.43	0.00	0.00	0.00
3,900.00	12.00	326.78	3,872.16	674.54	239.09	-156.60	-237.73	0.00	0.00	0.00
4,000.00	12.00	326.78	3,969.98	576.72	256.48	-167.99	-255.02	0.00	0.00	0.00
4,100.00	12.00	326.78	4,067.79	478.91	273.87	-179.38	-272.32	0.00	0.00	0.00
4,200.00	12.00	326.78	4,165.61	381.09	291.26	-190.77	-289.61	0.00	0.00	0.00
4,300.00	12.00	326.78	4,263.42	283.28	308.66	-202.16	-306.90	0.00	0.00	0.00
4,400.00	12.00	326.78	4,361.24	185.46	326.05	-213.56	-324.20	0.00	0.00	0.00
4,500.00	12.00	326.78	4,459.05	87.65	343.44	-224.95	-341.49	0.00	0.00	0.00
4,600.00	12.00	326.78	4,556.87	-10.17	360.83	-236.34	-358.78	0.00	0.00	0.00
4,700.00	12.00	326.78	4,654.68	-107.98	378.23	-247.73	-376.08	0.00	0.00	0.00
4,800.00	12.00	326.78	4,752.50	-205.80	395.62	-259.12	-393.37	0.00	0.00	0.00
4,900.00	12.00	326.78	4,850.31	-303.61	413.01	-270.51	-410.67	0.00	0.00	0.00
5,000.00	12.00	326.78	4,948.13	-401.43	430.40	-281.91	-427.96	0.00	0.00	0.00
Drop @ 2°/100'										
5,097.26	12.00	326.78	5,043.26	-496.56	447.32	-292.99	-444.78	0.00	0.00	0.00
5,100.00	11.95	326.78	5,045.94	-499.24	447.79	-293.30	-445.25	2.00	-2.00	0.00
5,200.00	9.95	326.78	5,144.12	-597.42	463.68	-303.70	-461.04	2.00	-2.00	0.00
5,300.00	7.95	326.78	5,242.90	-696.20	476.68	-312.22	-473.98	2.00	-2.00	0.00
5,400.00	5.95	326.78	5,342.16	-795.46	486.80	-318.84	-484.03	2.00	-2.00	0.00
5,500.00	3.95	326.78	5,441.78	-895.08	494.01	-323.57	-491.20	2.00	-2.00	0.00
5,600.00	1.95	326.78	5,541.64	-994.94	498.31	-326.38	-495.48	2.00	-2.00	0.00
KOP (1) @ 11°/100'										
5,697.26	0.00	0.00	5,638.89	-1,092.19	499.69	-327.29	-496.85	2.00	-2.00	0.00
5,700.00	0.30	176.67	5,641.62	-1,094.92	499.68	-327.29	-496.84	11.00	11.00	0.00
5,800.00	11.30	176.67	5,740.96	-1,194.26	489.61	-326.70	-486.78	11.00	11.00	0.00
5,900.00	22.30	176.67	5,836.54	-1,289.84	460.80	-325.03	-457.98	11.00	11.00	0.00
6,000.00	33.30	176.67	5,924.86	-1,378.16	414.31	-322.32	-411.51	11.00	11.00	0.00
6,100.00	44.30	176.67	6,002.68	-1,455.98	351.85	-318.69	-349.09	11.00	11.00	0.00
6,200.00	55.30	176.67	6,067.12	-1,520.42	275.71	-314.26	-272.99	11.00	11.00	0.00
6,300.00	66.30	176.67	6,115.83	-1,569.13	188.70	-309.20	-186.03	11.00	11.00	0.00
70° Tangent @ 70° Inc										
6,333.63	70.00	176.67	6,128.35	-1,581.65	157.54	-307.39	-154.89	11.00	11.00	0.00
6,400.00	70.00	176.67	6,151.05	-1,604.35	95.28	-303.77	-92.66	0.00	0.00	0.00

Company:	Bonanza Creek Energy, Inc	Local Co-ordinate Ref:	State Seventy Holes A11-E14-3HNB
Project:	Weld County, Colorado	Ground Level Elevation:	4,533.7usft
Site:	NW NW, Sec 3, T4N, R62W, 6 PM	Wellhead Elevation:	Est. Kb @ 4546.70usft (Proposed)
Well:	State Seventy Holes A11-E14-3HNB	North Reference:	True
Wellbore:	API #: TBA	Survey Calculation Method:	Minimum Curvature
Design:	Proposal #1 (13348-241)	Database:	EDM5000

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
KOP (2) @ 11°/100'										
6,403.63	70.00	176.67	6,152.29	-1,605.59	91.88	-303.57	-89.26	0.00	0.00	0.00
6,500.00	80.60	176.67	6,176.71	-1,630.01	-1.05	-298.17	3.62	11.00	11.00	0.00
ICP Tgt - 7" Inter Csg										
6,585.45	90.00	176.67	6,183.70	-1,637.00	-85.97	-293.23	88.49	11.00	11.00	0.00
6,600.00	90.00	176.67	6,183.70	-1,637.00	-100.50	-292.39	103.01	0.00	0.00	0.00
6,700.00	90.00	176.67	6,183.70	-1,637.00	-200.33	-286.58	202.79	0.00	0.00	0.00
6,800.00	90.00	176.67	6,183.70	-1,637.00	-300.16	-280.78	302.57	0.00	0.00	0.00
6,900.00	90.00	176.67	6,183.70	-1,637.00	-399.99	-274.97	402.35	0.00	0.00	0.00
7,000.00	90.00	176.67	6,183.70	-1,637.00	-499.83	-269.17	502.13	0.00	0.00	0.00
7,100.00	90.00	176.67	6,183.70	-1,637.00	-599.66	-263.36	601.90	0.00	0.00	0.00
7,200.00	90.00	176.67	6,183.70	-1,637.00	-699.49	-257.56	701.68	0.00	0.00	0.00
7,300.00	90.00	176.67	6,183.70	-1,637.00	-799.32	-251.75	801.46	0.00	0.00	0.00
7,400.00	90.00	176.67	6,183.70	-1,637.00	-899.15	-245.95	901.24	0.00	0.00	0.00
7,500.00	90.00	176.67	6,183.70	-1,637.00	-998.98	-240.14	1,001.01	0.00	0.00	0.00
7,600.00	90.00	176.67	6,183.70	-1,637.00	-1,098.81	-234.34	1,100.79	0.00	0.00	0.00
7,700.00	90.00	176.67	6,183.70	-1,637.00	-1,198.65	-228.53	1,200.57	0.00	0.00	0.00
7,800.00	90.00	176.67	6,183.70	-1,637.00	-1,298.48	-222.73	1,300.35	0.00	0.00	0.00
7,900.00	90.00	176.67	6,183.70	-1,637.00	-1,398.31	-216.92	1,400.12	0.00	0.00	0.00
8,000.00	90.00	176.67	6,183.70	-1,637.00	-1,498.14	-211.12	1,499.90	0.00	0.00	0.00
8,100.00	90.00	176.67	6,183.70	-1,637.00	-1,597.97	-205.31	1,599.68	0.00	0.00	0.00
8,200.00	90.00	176.67	6,183.70	-1,637.00	-1,697.80	-199.51	1,699.46	0.00	0.00	0.00
8,300.00	90.00	176.67	6,183.70	-1,637.00	-1,797.63	-193.70	1,799.23	0.00	0.00	0.00
8,400.00	90.00	176.67	6,183.70	-1,637.00	-1,897.46	-187.90	1,899.01	0.00	0.00	0.00
8,500.00	90.00	176.67	6,183.70	-1,637.00	-1,997.30	-182.09	1,998.79	0.00	0.00	0.00
8,600.00	90.00	176.67	6,183.70	-1,637.00	-2,097.13	-176.29	2,098.57	0.00	0.00	0.00
8,700.00	90.00	176.67	6,183.70	-1,637.00	-2,196.96	-170.48	2,198.35	0.00	0.00	0.00
8,800.00	90.00	176.67	6,183.70	-1,637.00	-2,296.79	-164.68	2,298.12	0.00	0.00	0.00
8,900.00	90.00	176.67	6,183.70	-1,637.00	-2,396.62	-158.87	2,397.90	0.00	0.00	0.00
9,000.00	90.00	176.67	6,183.70	-1,637.00	-2,496.45	-153.07	2,497.68	0.00	0.00	0.00
9,100.00	90.00	176.67	6,183.70	-1,637.00	-2,596.28	-147.26	2,597.46	0.00	0.00	0.00
9,200.00	90.00	176.67	6,183.70	-1,637.00	-2,696.12	-141.46	2,697.23	0.00	0.00	0.00
9,300.00	90.00	176.67	6,183.70	-1,637.00	-2,795.95	-135.65	2,797.01	0.00	0.00	0.00
9,400.00	90.00	176.67	6,183.70	-1,637.00	-2,895.78	-129.85	2,896.79	0.00	0.00	0.00
9,500.00	90.00	176.67	6,183.70	-1,637.00	-2,995.61	-124.04	2,996.57	0.00	0.00	0.00
9,600.00	90.00	176.67	6,183.70	-1,637.00	-3,095.44	-118.24	3,096.34	0.00	0.00	0.00
9,700.00	90.00	176.67	6,183.70	-1,637.00	-3,195.27	-112.43	3,196.12	0.00	0.00	0.00
9,800.00	90.00	176.67	6,183.70	-1,637.00	-3,295.10	-106.62	3,295.90	0.00	0.00	0.00
9,900.00	90.00	176.67	6,183.70	-1,637.00	-3,394.94	-100.82	3,395.68	0.00	0.00	0.00
10,000.00	90.00	176.67	6,183.70	-1,637.00	-3,494.77	-95.01	3,495.46	0.00	0.00	0.00
10,100.00	90.00	176.67	6,183.70	-1,637.00	-3,594.60	-89.21	3,595.23	0.00	0.00	0.00
10,200.00	90.00	176.67	6,183.70	-1,637.00	-3,694.43	-83.40	3,695.01	0.00	0.00	0.00
10,300.00	90.00	176.67	6,183.70	-1,637.00	-3,794.26	-77.60	3,794.79	0.00	0.00	0.00
10,400.00	90.00	176.67	6,183.70	-1,637.00	-3,894.09	-71.79	3,894.57	0.00	0.00	0.00
10,500.00	90.00	176.67	6,183.70	-1,637.00	-3,993.92	-65.99	3,994.34	0.00	0.00	0.00
10,600.00	90.00	176.67	6,183.70	-1,637.00	-4,093.75	-60.18	4,094.12	0.00	0.00	0.00
10,700.00	90.00	176.67	6,183.70	-1,637.00	-4,193.59	-54.38	4,193.90	0.00	0.00	0.00
10,800.00	90.00	176.67	6,183.70	-1,637.00	-4,293.42	-48.57	4,293.68	0.00	0.00	0.00
10,900.00	90.00	176.67	6,183.70	-1,637.00	-4,393.25	-42.77	4,393.45	0.00	0.00	0.00
BH Tgt										
10,974.01	90.00	176.67	6,183.70	-1,637.00	-4,467.14	-38.47	4,467.30	0.00	0.00	0.00

Company:	Bonanza Creek Energy, Inc	Local Co-ordinate Ref:	State Seventy Holes A11-E14-3HNB
Project:	Weld County, Colorado	Ground Level Elevation:	4,533.7usft
Site:	NW NW, Sec 3, T4N, R62W, 6 PM	Wellhead Elevation:	Est. Kb @ 4546.70usft (Proposed)
Well:	State Seventy Holes A11-E14-3HNB	North Reference:	True
Wellbore:	API #: TBA	Survey Calculation Method:	Minimum Curvature
Design:	Proposal #1 (13348-241)	Database:	EDM5000

Targets									
Target Name - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WC SSH A11-E14-3HNB (1334- - Circle (radius 10.00)	0.00	0.00	0.00	0.00	0.00	1,371,680.60	3,328,957.33	40.347655°N	104.319745°W
Tgt SSH A11-E14-3HNB (1334 - Circle (radius 10.00)	0.00	0.00	6,183.70	-85.97	-293.23	1,371,590.74	3,328,665.28	40.347419°N	104.320797°W
WC SSH 11-14-3HNB (13344- - Circle (radius 10.00)	0.00	0.00	-0.20	79.79	-3.62	1,371,760.33	3,328,952.65	40.347874°N	104.319758°W
BH SSH A11-E14-3HNB (1334 - Circle (radius 10.00)	0.00	0.00	6,183.70	-4,467.14	-38.47	1,367,213.54	3,328,978.32	40.335393°N	104.319883°W
WC SSH F-J-3HNB (13345-24 - Circle (radius 10.00)	0.00	0.00	-0.20	60.11	-2.51	1,371,740.67	3,328,954.03	40.347820°N	104.319754°W
WC SSH F11-J14-3HNB (1334 - Circle (radius 10.00)	0.00	0.00	-0.10	40.07	-2.23	1,371,720.64	3,328,954.57	40.347765°N	104.319753°W
WC SSH A-E-3HNB (13347-24 - Circle (radius 10.00)	0.00	0.00	-0.10	20.04	-0.84	1,371,700.63	3,328,956.23	40.347710°N	104.319748°W
KOP (1) (13348-241) - Point	0.00	0.00	5,638.89	499.69	-327.29	1,372,175.87	3,328,623.44	40.349027°N	104.320919°W

Casing Points					Casing Diameter (")	Hole Diameter (")
MD (usft)	TVD (usft)	Name				
6,585.45	6,183.70	7" Inter Csg			7	8-3/4

Plan Annotations					
MD (usft)	TVD (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,226.46	2,226.46	0.00	0.00	Nudge @ 2°/100'	
2,826.46	2,822.08	52.37	-34.30	Hold @ 12° Inc	
5,097.26	5,043.26	447.32	-292.99	Drop @ 2°/100'	
5,697.26	5,638.89	499.69	-327.29	KOP (1) @ 11°/100'	
6,333.63	6,128.35	157.54	-307.39	70' Tangent @ 70° Inc	
6,403.63	6,152.29	91.88	-303.57	KOP (2) @ 11°/100'	
6,585.45	6,183.70	-85.97	-293.23	ICP Tgt	
10,974.01	6,183.70	-4,467.14	-38.47	BH Tgt	