

JUN 12 2015

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30-025 - 42630

devon

Black Mamba 15 State Com 8H
Lea Co, NM

Weatherford

Plan Data for Black Mamba 15 State Com 8H

Plan Point Information:
Dogleg Severity Unit: 7100.00ft. Position offsets from Slot centre
ND Inc Az TVD +N/-S +E/-W Northing Easting VSec DLS
(USft) (°) (°) (USft) (USft) (USft) (USft) (USft) (DLSU)
0.00 0.00 0.00 0.00 0.00 0.00 478571.11 782055.33 0.00 0.00
10285.06 0.00 0.00 10285.06 0.00 0.00 478571.11 782055.33 0.00 0.00
11180.34 89.53 179.26 10858.00 -568.19 7.37 478002.92 782062.70 568.23 10.00
16031.74 89.53 179.26 10898.00 -5419.02 70.33 473152.09 782125.66 5419.48 0.00

Plan Data for Black Mamba 15 State Com 8H

Slot: Black Mamba 15 State Com 8H
Position:
Offset is from Site centre
+N/-S: 0.40USft Northing: 478571.11USft Latitude: 32°18'47.7"
+E/-W: 50.00USft Easting: 782055.33USft Longitude: -103°33'14.9"
Elevation Above VRD: 3651.00USft

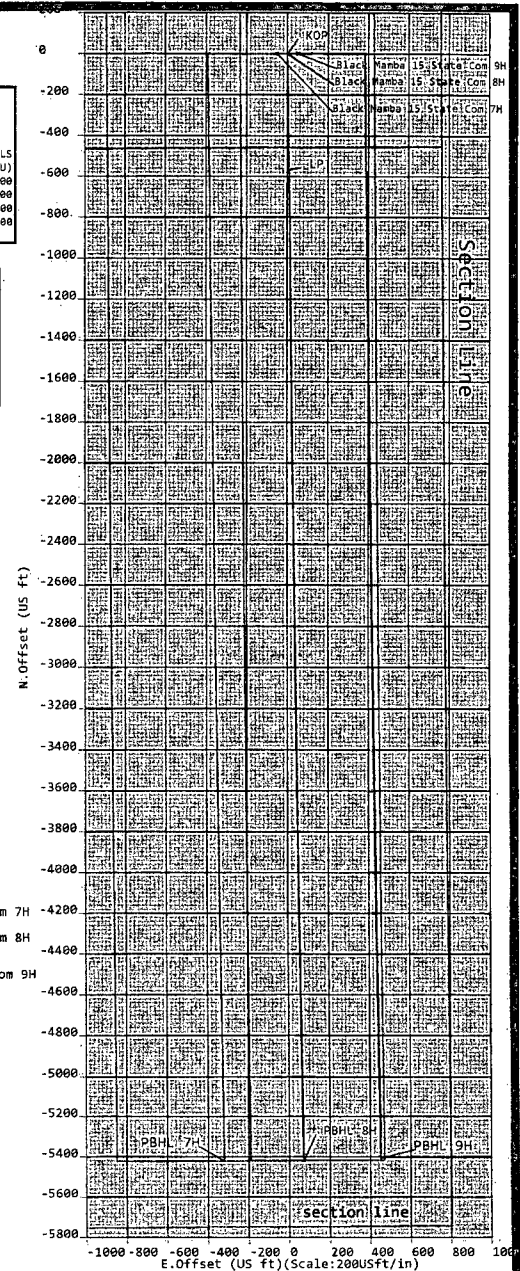
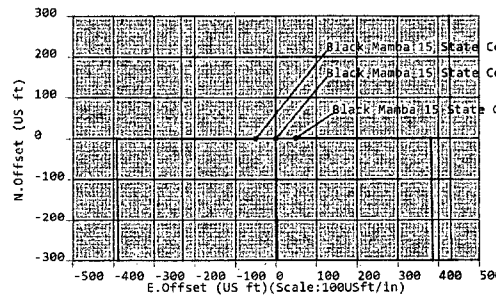
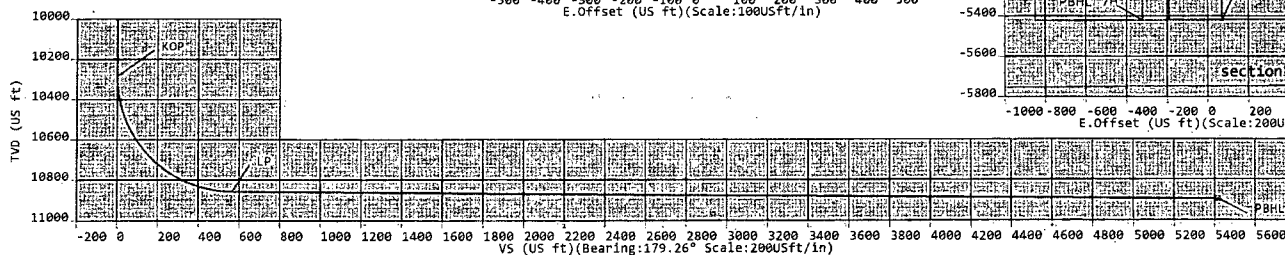
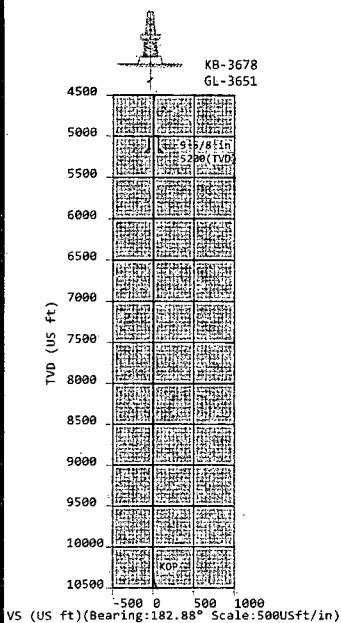
Plan Data for Black Mamba 15 State Com 8H

Target Set Information:
Name: Black Mamba 15 State Com 8H
Position offsets from Slot centre
Name TVD +N/-S +E/-W Northing Easting Shape Comment
(USft) (USft) (USft) (USft) (USft)
PBHL 8H 10898.00 -5419.02 70.33 473152.09 782125.66 Cuboid

Plan Data for Black Mamba 15 State Com 8H

Well: Black Mamba 15 State Com 8H
Type: Main Well
File Number:
Plan Folder: P1 Plan: P1:V2
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 179.26°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGGM 40263 (NT) 7.22° 60.22° 2015-10-30

Black Mamba 15 State Com 8H
Black Mamba 15 State Com 9H
Black Mamba 15 State Com 7H



Sign Off: Russell Joyner

JUN 12 2015

5D Plan Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *Black Mamba 15 State Com 7H,8H,9H Pad***Well Name:** *Black Mamba 15 State Com 8H***Plan:** *P1:V2*

03 June 2015

**Weatherford®**

Black Mamba 15 State Com 8H

Field Name Lea Co. NM Nad 83 NMEZ	Map Units : US ft Company Name : Devon Energy Vertical Reference Datum (VRD) : Mean Sea Level Projected Coordinate System : NAD83 / New Mexico East (ftUS) Comment :	
Site Name Black Mamba 15 State Com 7H, 8H, 9H Pad	Units : US ft North Reference : Grid Convergence Angle : 0.42 Position Northing: 478570.71 US ft Latitude: 32° 18' 47.73" Easting: 782005.33 US ft Longitude: -103° 33' 15.50" Elevation above Mean Sea Level: 3653.00 US ft Comment :	
Slot Name Black Mamba 15 State Com 8H	Position (Offsets relative to Site Centre) +N / -S: 0.40 US ft Northing: 478571.11 US ft Latitude: 32° 18' 47.73" +E / -W: 50.00 US ft Easting: 782055.33 US ft Longitude: -103° 33' 14.92" Slot TVD Reference : Ground Elevation Elevation above Mean Sea Level : 3651.00 US ft Comment :	
Well Name Black Mamba 15 State Com 8H	Type : Main well UWI : Plan : P1:V2 Rig Height <i>Kelly Bushing</i> : 27.00 US ft Comment : Relative to Mean Sea Level: 3678.00 US ft Closure Distance : 5419.48 US ft Closure Azimuth : 179.256° Vertical Section (Position of Origin Relative to Slot) +N / -S : 0.00 US ft +E / -W : 0.00 US ft Az : 179.26° Magnetic Parameters Model : BGGM Field Strength : Dec : 7.22° Dip : 60.22° Date : 30/Oct/2015 48263.5nT	

Target Set	
Name : Black Mamba 15 State Com 8H	Number of Targets : 1

Comment :

Target Name: PBHL 8H	Position (Relative to Slot centre) +N / -S : 5419.02 US ft Northing : 473152.09 US ft Latitude : 32° 17' 54.11" +E / -W : 70.33 US ft Easting : 782125.66 US ft Longitude : -103° 33' 14.56" Shape: TVD (<i>Kelly Bushing</i>) : 10898.00 US ft Cuboid Orientation Azimuth : 0.00° Inclination : 0.00° Dimensions Length : 20.00 US ft Breadth : 20.00 US ft Height : 20.00 US ft	
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Casing Points (Relative to Slot centre, TVD relative to Kelly Bushing)								
ID	Inc	Az	TVD	N Offset	E Offset	Northing	Easting	Name
(US ft)	(°)	(°)	(US ft)	(US ft)	(US ft)	(US ft)	(US ft)	
5200.00	0.00	0.00	5200.00	0.00	0.00	478571.11	782055.33	9 5/8 in

5D Plan Report

Well path created using minimum curvature

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	B. Rate (%/100 US ft)	T. Rate (%/100 US ft)	T. Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	9 5/8 in
10285.06	0.00	0.00	10285.06	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	KOP
11180.34	89.53	179.26	10858.00	-568.19	7.37	568.23	10.00	10.00	0.00	179.26	LP
16031.74	89.53	179.26	10898.00	-5419.02	70.33	5419.48	0.00	0.00	0.00	0.00	PBHL 8H

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Nothing (US ft)	Easting (US ft)		Comment
10200.00	0.00	0.00	10200.00	0.00	0.00	-0.00	0.00	478571.11	782055.33		
10285.06	0.00	0.00	10285.06	0.00	0.00	-0.00	0.00	478571.11	782055.33		KOP
10300.00	1.49	179.26	10300.00	-0.19	0.00	0.19	10.00	478570.92	782055.33		
10400.00	11.49	179.26	10399.23	-11.49	0.15	11.49	10.00	478559.62	782055.48		
10500.00	21.49	179.26	10494.99	-39.84	0.52	39.85	10.00	478531.27	782055.85		
10600.00	31.49	179.26	10584.38	-84.39	1.10	84.40	10.00	478486.72	782056.43		
10700.00	41.49	179.26	10664.67	-143.79	1.87	143.80	10.00	478427.32	782057.20		
10800.00	51.49	179.26	10733.42	-216.22	2.81	216.24	10.00	478354.89	782058.14		
10900.00	61.49	179.26	10788.56	-299.49	3.89	299.51	10.00	478271.62	782059.22		
11000.00	71.49	179.26	10828.39	-391.07	5.08	391.10	10.00	478180.04	782060.41		
11100.00	81.49	179.26	10851.72	-488.17	6.34	488.21	10.00	478082.94	782061.67		
11180.34	89.53	179.26	10858.00	-568.19	7.37	568.23	10.00	478002.92	782062.70		LP
11200.00	89.53	179.26	10858.16	-587.85	7.63	587.90	0.00	477983.26	782062.96		
11300.00	89.53	179.26	10858.98	-687.84	8.93	687.89	0.00	477883.27	782064.26		
11400.00	89.53	179.26	10859.81	-787.82	10.22	787.89	0.00	477783.29	782065.55		
11500.00	89.53	179.26	10860.63	-887.81	11.52	887.89	0.00	477683.30	782066.85		
11600.00	89.53	179.26	10861.46	-987.80	12.82	987.88	0.00	477583.31	782068.15		
11700.00	89.53	179.26	10862.28	-1087.79	14.12	1087.88	0.00	477483.32	782069.45		
11800.00	89.53	179.26	10863.11	-1187.78	15.42	1187.88	0.00	477383.33	782070.75		
11900.00	89.53	179.26	10863.93	-1287.76	16.71	1287.87	0.00	477283.35	782072.04		
12000.00	89.53	179.26	10864.76	-1387.75	18.01	1387.87	0.00	477183.36	782073.34		
12100.00	89.53	179.26	10865.58	-1487.74	19.31	1487.87	0.00	477083.37	782074.64		
12200.00	89.53	179.26	10866.41	-1587.73	20.61	1587.86	0.00	476983.38	782075.94		
12300.00	89.53	179.26	10867.23	-1687.72	21.90	1687.86	0.00	476883.39	782077.23		
12400.00	89.53	179.26	10868.05	-1787.71	23.20	1787.86	0.00	476783.40	782078.53		
12500.00	89.53	179.26	10868.88	-1887.69	24.50	1887.85	0.00	476683.42	782079.83		
12600.00	89.53	179.26	10869.70	-1987.68	25.80	1987.85	0.00	476583.43	782081.13		
12700.00	89.53	179.26	10870.53	-2087.67	27.09	2087.85	0.00	476483.44	782082.42		
12800.00	89.53	179.26	10871.35	-2187.66	28.39	2187.84	0.00	476383.45	782083.72		
12900.00	89.53	179.26	10872.18	-2287.65	29.69	2287.84	0.00	476283.46	782085.02		
13000.00	89.53	179.26	10873.00	-2387.63	30.99	2387.84	0.00	476183.48	782086.32		
13100.00	89.53	179.26	10873.83	-2487.62	32.29	2487.83	0.00	476083.49	782087.62		
13200.00	89.53	179.26	10874.65	-2587.61	33.58	2587.83	0.00	475983.50	782088.91		
13300.00	89.53	179.26	10875.48	-2687.60	34.88	2687.83	0.00	475883.51	782090.21		
13400.00	89.53	179.26	10876.30	-2787.59	36.18	2787.82	0.00	475783.52	782091.51		
13500.00	89.53	179.26	10877.12	-2887.58	37.48	2887.82	0.00	475683.53	782092.81		
13600.00	89.53	179.26	10877.95	-2987.56	38.77	2987.82	0.00	475583.55	782094.10		
13700.00	89.53	179.26	10878.77	-3087.55	40.07	3087.81	0.00	475483.56	782095.40		
13800.00	89.53	179.26	10879.60	-3187.54	41.37	3187.81	0.00	475383.57	782096.70		
13900.00	89.53	179.26	10880.42	-3287.53	42.67	3287.81	0.00	475283.58	782098.00		
14000.00	89.53	179.26	10881.25	-3387.52	43.96	3387.80	0.00	475183.59	782099.29		
14100.00	89.53	179.26	10882.07	-3487.50	45.26	3487.80	0.00	475083.61	782100.59		
14200.00	89.53	179.26	10882.90	-3587.49	46.56	3587.80	0.00	474983.62	782101.89		
14300.00	89.53	179.26	10883.72	-3687.48	47.86	3687.79	0.00	474883.63	782103.19		
14400.00	89.53	179.26	10884.55	-3787.47	49.16	3787.79	0.00	474783.64	782104.49		
14500.00	89.53	179.26	10885.37	-3887.46	50.45	3887.78	0.00	474683.65	782105.78		
14600.00	89.53	179.26	10886.19	-3987.45	51.75	3987.78	0.00	474583.66	782107.08		

SD Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
14700.00	89.53	179.26	10887.02	-4087.43	53.05	4087.78	0.00	474483.68	782108.38	
14800.00	89.53	179.26	10887.84	-4187.42	54.35	4187.77	0.00	474383.69	782109.68	
14900.00	89.53	179.26	10888.67	-4287.41	55.64	4287.77	0.00	474283.70	782110.97	
15000.00	89.53	179.26	10889.49	-4387.40	56.94	4387.77	0.00	474183.71	782112.27	
15100.00	89.53	179.26	10890.32	-4487.39	58.24	4487.76	0.00	474083.72	782113.57	
15200.00	89.53	179.26	10891.14	-4587.37	59.54	4587.76	0.00	473983.74	782114.87	
15300.00	89.53	179.26	10891.97	-4687.36	60.83	4687.76	0.00	473883.75	782116.16	
15400.00	89.53	179.26	10892.79	-4787.35	62.13	4787.75	0.00	473783.76	782117.46	
15500.00	89.53	179.26	10893.62	-4887.34	63.43	4887.75	0.00	473683.77	782118.76	
15600.00	89.53	179.26	10894.44	-4987.33	64.73	4987.75	0.00	473583.78	782120.06	
15700.00	89.53	179.26	10895.26	-5087.32	66.03	5087.74	0.00	473483.79	782121.36	
15800.00	89.53	179.26	10896.09	-5187.30	67.32	5187.74	0.00	473383.81	782122.65	
15900.00	89.53	179.26	10896.91	-5287.29	68.62	5287.74	0.00	473283.82	782123.95	
16000.00	89.53	179.26	10897.74	-5387.28	69.92	5387.73	0.00	473183.83	782125.25	
16031.74	89.53	179.26	10898.00	-5419.02	70.33	5419.48	0.00	473152.09	782125.66	PBHL 8H

5D Anti-Collision Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *Black Mamba 15 State Com 7H,8H,9H Pad***Well Name:** *Black Mamba 15 State Com 8H*

03 June 2015

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Black Mamba 15 State Com 8H

Field Name Lea Co. NM Nad 83 NMEZ	Map Units : US ft Company Name : Devon Energy Vertical Reference Datum (VRD) : Mean Sea Level Projected Coordinate System : NAD83 / New Mexico East (ftUS) Comment :	
Site Name Black Mamba 15 State Com 7H, 8H, 9H Pad	Units : US ft North Reference : Grid Convergence Angle : 0.42 Position Northing : 478570.71 US ft Latitude : 32° 18' 47.73" Easting : 782005.33 US ft Longitude : -103° 33' 15.50" Elevation above Mean Sea Level: 3653.00 US ft Comment :	
Slot Name Black Mamba 15 State Com 8H	Position (Offsets relative to Site Centre) +N / -S : 0.40 US ft Northing : 478571.11 US ft Latitude : 32° 18' 47.73" +E / -W : 50.00 US ft Easting : 782055.33 US ft Longitude : -103° 33' 14.92" Slot TVD Reference : Ground Elevation Elevation above Mean Sea Level : 3651.00 US ft Comment :	
Well Name Black Mamba 15 State Com 8H	Type : Main well UWI : Plan : Working Plan Rig Height Kelly Bushing : 27.00 US ft Comment : Relative to Mean Sea Level: 3678.00 US ft Closure Distance : 5419.48 US ft Closure Azimuth : 179.256° Vertical Section (Position of Origin Relative to Slot) +N / -S : 0.00 US ft +E / -W : 0.00 US ft Az : 179.26° Magnetic Parameters Model : BGGM Field Strength : 48263.5nT Dec : 7.22° Dip : 60.22° Date : 30/Oct/2015	

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Black Mamba 15 State Com 8H (p)	0.00	16031.74	100.00	2

Secondary Well Names
Black Mamba 15 State Com 7H (p)
Black Mamba 15 State Com 9H (p)

Anti-Collision Report Terminology:
S.Minor, S.Major : Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.
PHI : Angle between high-side vector and semi-minor axis
TVD Spread : Total TVD range of the ellipsoid of uncertainty at the current location
ES : Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr
T.Face to Sec : Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells

Separation factors calculated using Pedal Curves (Independent Uncertainty). Well path created using minimum curvature.

5D Anti-Collision Report

Anti-Collision Proximity Summary (TVD Relative to Kelly Bushing)

Secondary Well Name	Pri MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	ES (US ft)	SF	Risk
Black Mamba 15 State Com 9H (p)	16031.74	16188.66	10898.00	391.93	193.31	1.97	SF (Lo)
Black Mamba 15 State Com 7H (p)	5323.63	5325.19	5323.63	50.11	25.88	2.07	

Primary Well: Black Mamba 15 State Com 8H (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)

MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
0.00	0.00	269.54	0.00	0.00	Black Mamba 15 State Com 7H (p)	50.00	49.18	60.96	
100.00	100.00	269.54	0.11	0.11	Black Mamba 15 State Com 7H (p)	50.00	48.97	48.29	
200.00	200.00	269.54	0.34	0.34	Black Mamba 15 State Com 7H (p)	50.00	48.52	33.73	
300.00	300.00	269.54	0.56	0.56	Black Mamba 15 State Com 7H (p)	50.00	48.07	25.89	
400.00	400.00	269.54	0.79	0.79	Black Mamba 15 State Com 7H (p)	50.00	47.62	21.00	
500.00	500.00	269.54	1.01	1.01	Black Mamba 15 State Com 7H (p)	50.00	47.17	17.67	
600.00	600.00	269.54	1.24	1.24	Black Mamba 15 State Com 7H (p)	50.00	46.72	15.25	
700.00	700.00	269.54	1.46	1.46	Black Mamba 15 State Com 7H (p)	50.00	46.27	13.41	
800.00	800.00	269.54	1.69	1.69	Black Mamba 15 State Com 7H (p)	50.00	45.82	11.97	
900.00	900.00	269.54	1.91	1.91	Black Mamba 15 State Com 7H (p)	50.00	45.37	10.80	
1000.00	1000.00	269.54	2.14	2.14	Black Mamba 15 State Com 7H (p)	50.00	44.92	9.85	
1100.00	1100.00	269.54	2.36	2.36	Black Mamba 15 State Com 7H (p)	50.00	44.47	9.05	
1200.00	1200.00	269.54	2.59	2.59	Black Mamba 15 State Com 7H (p)	50.00	44.02	8.37	
1300.00	1300.00	269.54	2.81	2.81	Black Mamba 15 State Com 7H (p)	50.00	43.58	7.78	
1400.00	1400.00	269.54	3.03	3.03	Black Mamba 15 State Com 7H (p)	50.00	43.13	7.27	
1500.00	1500.00	269.54	3.26	3.26	Black Mamba 15 State Com 7H (p)	50.00	42.68	6.83	
1600.00	1600.00	269.54	3.48	3.48	Black Mamba 15 State Com 7H (p)	50.00	42.23	6.43	
1700.00	1700.00	269.54	3.71	3.71	Black Mamba 15 State Com 7H (p)	50.00	41.78	6.08	
1800.00	1800.00	269.54	3.93	3.93	Black Mamba 15 State Com 7H (p)	50.00	41.33	5.76	
1900.00	1900.00	269.54	4.16	4.16	Black Mamba 15 State Com 7H (p)	50.00	40.88	5.48	
2000.00	2000.00	269.54	4.38	4.38	Black Mamba 15 State Com 7H (p)	50.00	40.43	5.22	
2100.00	2100.00	269.54	4.61	4.61	Black Mamba 15 State Com 7H (p)	50.00	39.98	4.99	

SD Anti-Collision Report

Primary Well	Black Mamba 15 State Com 7H (p)	(TVD Relative to Kelly Bushing)	All Azimuth Relative to GRID NORTH						
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
2200.00	2200.00	269.54	4.83	4.83	Black Mamba 15 State Com 7H (p)	50.00	39.53	4.77	
2300.00	2300.00	269.54	5.06	5.06	Black Mamba 15 State Com 7H (p)	50.00	39.08	4.58	
2400.00	2400.00	269.54	5.28	5.28	Black Mamba 15 State Com 7H (p)	50.00	38.63	4.40	
2500.00	2500.00	269.54	5.51	5.51	Black Mamba 15 State Com 7H (p)	50.00	38.18	4.23	
2600.00	2600.00	269.54	5.73	5.73	Black Mamba 15 State Com 7H (p)	50.00	37.73	4.07	
2700.00	2700.00	269.54	5.96	5.96	Black Mamba 15 State Com 7H (p)	50.00	37.28	3.93	
2800.00	2800.00	269.54	6.18	6.18	Black Mamba 15 State Com 7H (p)	50.00	36.83	3.80	
2900.00	2900.00	269.54	6.41	6.41	Black Mamba 15 State Com 7H (p)	50.00	36.38	3.67	
3000.00	3000.00	269.54	6.63	6.63	Black Mamba 15 State Com 7H (p)	50.00	35.93	3.55	
3100.00	3100.00	269.54	6.86	6.86	Black Mamba 15 State Com 7H (p)	50.00	35.48	3.44	
3200.00	3200.00	269.54	7.08	7.08	Black Mamba 15 State Com 7H (p)	50.00	35.03	3.34	
3300.00	3300.00	269.54	7.31	7.31	Black Mamba 15 State Com 7H (p)	50.00	34.58	3.24	
3400.00	3400.00	269.54	7.53	7.53	Black Mamba 15 State Com 7H (p)	50.00	34.13	3.15	
3500.00	3500.00	269.54	7.76	7.76	Black Mamba 15 State Com 7H (p)	50.00	33.69	3.06	
3600.00	3600.00	269.54	7.98	7.98	Black Mamba 15 State Com 7H (p)	50.00	33.24	2.98	
3700.00	3700.00	269.54	8.20	8.20	Black Mamba 15 State Com 7H (p)	50.00	32.79	2.90	
3800.00	3800.00	269.54	8.43	8.43	Black Mamba 15 State Com 7H (p)	50.00	32.34	2.83	
3900.00	3900.00	269.54	8.65	8.65	Black Mamba 15 State Com 7H (p)	50.00	31.89	2.76	
4000.00	4000.00	269.54	8.88	8.88	Black Mamba 15 State Com 7H (p)	50.00	31.44	2.69	
4100.00	4100.00	269.54	9.10	9.10	Black Mamba 15 State Com 7H (p)	50.00	30.99	2.63	
4200.00	4200.00	269.54	9.33	9.33	Black Mamba 15 State Com 7H (p)	50.00	30.54	2.57	
4300.00	4300.00	269.54	9.55	9.55	Black Mamba 15 State Com 7H (p)	50.00	30.09	2.51	
4400.00	4400.00	269.54	9.78	9.78	Black Mamba 15 State Com 7H (p)	50.00	29.64	2.46	
4500.00	4500.00	269.54	10.00	10.00	Black Mamba 15 State Com 7H (p)	50.00	29.19	2.40	
4600.00	4600.00	269.54	10.23	10.23	Black Mamba 15 State Com 7H (p)	50.00	28.74	2.35	
4700.00	4700.00	269.54	10.45	10.45	Black Mamba 15 State Com 7H (p)	50.00	28.29	2.30	

5D Anti-Collision Report

Primary Well: Black Mamba 15 State Com 8H (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
4800.00	4800.00	269.54	10.68	10.68	Black Mamba 15 State Com 7H (p)	50.00	27.84	2.26	
4900.00	4900.00	269.54	10.90	10.90	Black Mamba 15 State Com 7H (p)	50.00	27.39	2.21	
5000.00	5000.00	269.54	11.13	11.13	Black Mamba 15 State Com 7H (p)	50.00	26.94	2.17	
5100.00	5100.00	269.54	11.35	11.35	Black Mamba 15 State Com 7H (p)	50.00	26.49	2.13	
5200.00	5200.00	89.52	11.58	11.58	Black Mamba 15 State Com 9H (p)	49.99	26.16	2.10	
5300.00	5300.00	89.52	11.80	11.80	Black Mamba 15 State Com 9H (p)	49.99	25.83	2.07	
5400.00	5400.00	89.53	12.03	12.03	Black Mamba 15 State Com 9H (p)	51.67	27.13	2.11	
5500.00	5500.00	89.58	12.25	12.25	Black Mamba 15 State Com 9H (p)	56.78	31.86	2.28	
5600.00	5600.00	89.63	12.48	12.48	Black Mamba 15 State Com 9H (p)	64.96	39.66	2.57	
5700.00	5700.00	89.67	12.70	12.70	Black Mamba 15 State Com 9H (p)	73.67	47.95	2.86	
5800.00	5800.00	89.71	12.93	12.93	Black Mamba 15 State Com 9H (p)	82.39	56.24	3.15	
5900.00	5900.00	89.73	13.15	13.15	Black Mamba 15 State Com 9H (p)	91.11	64.53	3.43	
6000.00	6000.00	89.76	13.37	13.37	Black Mamba 15 State Com 9H (p)	99.82	72.82	3.70	
6100.00	6100.00	89.78	13.60	13.60	Black Mamba 15 State Com 9H (p)	108.54	81.11	3.96	
6200.00	6200.00	89.79	13.82	13.82	Black Mamba 15 State Com 9H (p)	117.25	89.40	4.21	
6300.00	6300.00	89.81	14.05	14.05	Black Mamba 15 State Com 9H (p)	125.97	97.69	4.45	
6400.00	6400.00	89.82	14.27	14.27	Black Mamba 15 State Com 9H (p)	134.68	105.98	4.69	
6500.00	6500.00	89.83	14.50	14.50	Black Mamba 15 State Com 9H (p)	143.40	114.26	4.92	
6600.00	6600.00	89.84	14.72	14.72	Black Mamba 15 State Com 9H (p)	152.11	122.55	5.15	
6700.00	6700.00	89.85	14.95	14.95	Black Mamba 15 State Com 9H (p)	160.83	130.83	5.36	
6800.00	6800.00	89.86	15.17	15.17	Black Mamba 15 State Com 9H (p)	169.55	139.12	5.57	
6900.00	6900.00	89.86	15.40	15.40	Black Mamba 15 State Com 9H (p)	178.26	147.40	5.78	
7000.00	7000.00	89.87	15.62	15.62	Black Mamba 15 State Com 9H (p)	186.98	155.69	5.98	
7100.00	7100.00	89.88	15.85	15.85	Black Mamba 15 State Com 9H (p)	195.69	163.97	6.17	
7200.00	7200.00	89.88	16.07	16.07	Black Mamba 15 State Com 9H (p)	204.41	172.25	6.36	
7300.00	7300.00	89.89	16.30	16.30	Black Mamba 15 State Com 9H (p)	213.12	180.53	6.54	

5D Anti-Collision Report

Primary Well	Black Mamba 15 State Com 8H (p)	TVD Relative to Kelly Bushing	All Azimuth Relative to GRID NORTH							
HD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk	
7400.00	7400.00	89.89	16.52	16.52	Black Mamba 15 State Com 9H (p)	221.84	188.81	6.72		
7500.00	7500.00	89.90	16.75	16.75	Black Mamba 15 State Com 9H (p)	230.55	197.09	6.89		
7600.00	7600.00	269.90	16.97	16.97	Black Mamba 15 State Com 7H (p)	239.54	205.60	7.06		
7700.00	7700.00	269.91	17.20	17.20	Black Mamba 15 State Com 7H (p)	248.26	213.88	7.22		
7800.00	7800.00	269.91	17.42	17.42	Black Mamba 15 State Com 7H (p)	256.97	222.16	7.38		
7900.00	7900.00	269.91	17.65	17.65	Black Mamba 15 State Com 7H (p)	265.69	230.44	7.54		
8000.00	8000.00	269.92	17.87	17.87	Black Mamba 15 State Com 7H (p)	274.40	238.72	7.69		
8100.00	8100.00	269.92	18.10	18.10	Black Mamba 15 State Com 7H (p)	283.12	246.99	7.84		
8200.00	8200.00	269.92	18.32	18.32	Black Mamba 15 State Com 7H (p)	291.83	255.27	7.98		
8300.00	8300.00	269.92	18.54	18.54	Black Mamba 15 State Com 7H (p)	300.55	263.55	8.12		
8400.00	8400.00	269.93	18.77	18.77	Black Mamba 15 State Com 7H (p)	309.27	271.82	8.26		
8500.00	8500.00	269.93	18.99	18.99	Black Mamba 15 State Com 7H (p)	317.98	280.10	8.39		
8600.00	8600.00	269.93	19.22	19.22	Black Mamba 15 State Com 7H (p)	326.70	288.37	8.52		
8700.00	8700.00	269.93	19.44	19.44	Black Mamba 15 State Com 7H (p)	335.41	296.65	8.65		
8800.00	8800.00	269.93	19.67	19.67	Black Mamba 15 State Com 7H (p)	344.13	304.92	8.78		
8900.00	8900.00	269.93	19.89	19.89	Black Mamba 15 State Com 7H (p)	352.84	313.19	8.90		
9000.00	9000.00	269.94	20.12	20.12	Black Mamba 15 State Com 7H (p)	361.56	321.47	9.02		
9100.00	9100.00	269.94	20.34	20.34	Black Mamba 15 State Com 7H (p)	370.27	329.74	9.14		
9200.00	9200.00	89.94	20.57	20.57	Black Mamba 15 State Com 9H (p)	377.83	336.81	9.21		
9300.00	9300.00	89.94	20.79	20.79	Black Mamba 15 State Com 9H (p)	381.86	340.36	9.20		
9400.00	9400.00	89.94	21.02	21.02	Black Mamba 15 State Com 9H (p)	382.37	340.43	9.12		
9500.00	9500.00	89.94	21.24	21.24	Black Mamba 15 State Com 9H (p)	382.37	339.99	9.02		
9600.00	9600.00	89.94	21.47	21.47	Black Mamba 15 State Com 9H (p)	382.37	339.54	8.93		
9700.00	9700.00	89.94	21.69	21.69	Black Mamba 15 State Com 9H (p)	382.37	339.10	8.84		
9800.00	9800.00	89.94	21.92	21.92	Black Mamba 15 State Com 9H (p)	382.37	338.66	8.75		
9900.00	9900.00	89.94	22.14	22.14	Black Mamba 15 State Com 9H (p)	382.37	338.22	8.66		

SD Anti-Collision Report

Primary Well: Black Mamba 15 State Com 9H (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T. Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
10000.00	10000.00	89.94	22.37	22.37	Black Mamba 15 State Com 9H (p)	382.37	337.77	8.57	
10100.00	10100.00	89.94	22.59	22.59	Black Mamba 15 State Com 9H (p)	382.37	337.33	8.49	
10200.00	10200.00	89.94	22.82	22.82	Black Mamba 15 State Com 9H (p)	382.37	336.89	8.41	
10300.00	10300.00	270.65	23.04	23.03	Black Mamba 15 State Com 9H (p)	382.37	336.47	8.33	
10400.00	10399.23	268.98	23.19	22.94	Black Mamba 15 State Com 9H (p)	382.41	336.23	8.28	
10500.00	10494.99	265.41	23.34	22.45	Black Mamba 15 State Com 9H (p)	383.66	336.96	8.21	
10600.00	10584.38	261.76	23.50	21.73	Black Mamba 15 State Com 9H (p)	386.59	339.65	8.24	
10700.00	10664.67	258.31	23.70	20.77	Black Mamba 15 State Com 9H (p)	390.88	343.71	8.29	
10800.00	10733.42	255.21	23.98	19.67	Black Mamba 15 State Com 9H (p)	396.00	348.37	8.31	
10900.00	10788.56	252.57	24.33	18.59	Black Mamba 15 State Com 9H (p)	401.22	353.23	8.36	
11000.00	10828.39	250.56	24.78	17.70	Black Mamba 15 State Com 9H (p)	405.75	357.40	8.39	
11100.00	10851.72	249.28	25.34	17.26	Black Mamba 15 State Com 9H (p)	408.84	359.79	8.33	
11200.00	10858.16	248.86	26.00	17.23	Black Mamba 15 State Com 9H (p)	409.88	359.68	8.17	
11300.00	10858.98	249.02	26.76	17.39	Black Mamba 15 State Com 9H (p)	409.43	357.73	7.92	
11400.00	10859.81	249.19	27.63	17.58	Black Mamba 15 State Com 9H (p)	408.98	355.66	7.67	
11500.00	10860.63	249.35	28.59	17.80	Black Mamba 15 State Com 9H (p)	408.53	353.46	7.42	
11600.00	10861.46	249.51	29.62	18.04	Black Mamba 15 State Com 9H (p)	408.09	351.04	7.15	
11700.00	10862.28	249.67	30.74	18.31	Black Mamba 15 State Com 9H (p)	407.65	348.42	6.88	
11800.00	10863.11	249.84	31.92	18.60	Black Mamba 15 State Com 9H (p)	407.21	345.69	6.62	
11900.00	10863.93	250.00	33.15	18.92	Black Mamba 15 State Com 9H (p)	406.78	342.87	6.36	
12000.00	10864.76	250.16	34.45	19.25	Black Mamba 15 State Com 9H (p)	406.35	339.95	6.12	
12100.00	10865.58	250.33	35.78	19.61	Black Mamba 15 State Com 9H (p)	405.93	336.95	5.89	
12200.00	10866.41	250.49	37.16	19.98	Black Mamba 15 State Com 9H (p)	405.50	333.88	5.66	
12300.00	10867.23	250.66	38.58	20.36	Black Mamba 15 State Com 9H (p)	405.09	330.73	5.45	
12400.00	10868.05	250.82	40.03	20.79	Black Mamba 15 State Com 9H (p)	404.67	327.52	5.25	
12500.00	10868.88	250.99	41.52	21.26	Black Mamba 15 State Com 9H (p)	404.26	324.25	5.05	

5D Anti-Collision Report

Primary Well: Black Mamba 15 State Corn 9H (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)										
HD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk	
12600.00	10869.70	251.15	43.03	21.73	Black Mamba 15 State Corn 9H (p)	403.85	320.93	4.87		
12700.00	10870.53	251.32	44.56	22.21	Black Mamba 15 State Corn 9H (p)	403.44	317.55	4.70		
12800.00	10871.35	251.48	46.11	22.66	Black Mamba 15 State Corn 9H (p)	403.04	314.13	4.53		
12900.00	10872.18	251.65	47.69	23.18	Black Mamba 15 State Corn 9H (p)	402.64	310.69	4.38		
13000.00	10873.00	251.82	49.28	23.67	Black Mamba 15 State Corn 9H (p)	402.25	307.37	4.24		
13100.00	10873.83	251.98	50.89	24.22	Black Mamba 15 State Corn 9H (p)	401.85	303.76	4.10		
13200.00	10874.65	252.15	52.51	24.72	Black Mamba 15 State Corn 9H (p)	401.47	300.18	3.96		
13300.00	10875.48	252.32	54.15	25.27	Black Mamba 15 State Corn 9H (p)	401.08	296.48	3.83		
13400.00	10876.30	252.49	55.80	25.79	Black Mamba 15 State Corn 9H (p)	400.70	292.82	3.71		
13500.00	10877.12	252.66	57.46	26.38	Black Mamba 15 State Corn 9H (p)	400.32	289.16	3.60		
13600.00	10877.95	252.83	59.13	26.97	Black Mamba 15 State Corn 9H (p)	399.95	285.50	3.49		
13700.00	10878.77	252.99	60.80	27.54	Black Mamba 15 State Corn 9H (p)	399.57	281.82	3.39		
13800.00	10879.60	253.16	62.49	28.10	Black Mamba 15 State Corn 9H (p)	399.21	278.12	3.30		
13900.00	10880.42	253.33	64.19	28.67	Black Mamba 15 State Corn 9H (p)	398.84	274.42	3.21		
14000.00	10881.25	253.50	65.89	29.24	Black Mamba 15 State Corn 9H (p)	398.48	270.69	3.12		
14100.00	10882.07	253.67	67.60	29.82	Black Mamba 15 State Corn 9H (p)	398.12	266.96	3.04		
14200.00	10882.90	253.85	69.32	30.43	Black Mamba 15 State Corn 9H (p)	397.77	263.21	2.96		
14300.00	10883.72	254.02	71.04	31.05	Black Mamba 15 State Corn 9H (p)	397.42	259.46	2.88		
14400.00	10884.55	254.19	72.76	31.68	Black Mamba 15 State Corn 9H (p)	397.07	255.69	2.81		
14500.00	10885.37	254.36	74.50	32.32	Black Mamba 15 State Corn 9H (p)	396.73	251.91	2.74		
14600.00	10886.19	254.53	76.23	32.95	Black Mamba 15 State Corn 9H (p)	396.39	248.12	2.67		
14700.00	10887.02	254.70	77.97	33.59	Black Mamba 15 State Corn 9H (p)	396.05	244.33	2.61		
14800.00	10887.84	254.88	79.72	34.23	Black Mamba 15 State Corn 9H (p)	395.72	240.53	2.55		
14900.00	10888.67	255.05	81.47	34.88	Black Mamba 15 State Corn 9H (p)	395.39	236.72	2.49		
15000.00	10889.49	255.22	83.22	35.53	Black Mamba 15 State Corn 9H (p)	395.07	232.91	2.44		
15100.00	10890.32	255.40	84.98	36.18	Black Mamba 15 State Corn 9H (p)	394.75	229.09	2.38		

5D Anti-Collision Report

Primary Well: Black Mamba 15 State Com 8H (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
15200.00	10891.14	255.57	86.73	36.83	Black Mamba 15 State Com 9H (p)	394.43	225.26	2.33	
15300.00	10891.97	255.74	88.50	37.49	Black Mamba 15 State Com 9H (p)	394.11	221.43	2.28	
15400.00	10892.79	255.92	90.26	38.15	Black Mamba 15 State Com 9H (p)	393.80	217.60	2.23	
15500.00	10893.62	256.09	92.03	38.81	Black Mamba 15 State Com 9H (p)	393.50	213.76	2.19	
15600.00	10894.44	256.27	93.80	39.47	Black Mamba 15 State Com 9H (p)	393.19	209.92	2.15	
15700.00	10895.26	256.44	95.57	40.14	Black Mamba 15 State Com 9H (p)	392.89	206.08	2.10	
15800.00	10896.09	256.62	97.34	40.80	Black Mamba 15 State Com 9H (p)	392.60	202.23	2.06	
15900.00	10896.91	256.79	99.12	41.47	Black Mamba 15 State Com 9H (p)	392.31	198.38	2.02	
16000.00	10897.74	256.97	100.90	42.15	Black Mamba 15 State Com 9H (p)	392.02	194.53	1.99	SF (Lo)
16031.74	10898.00	257.02	101.46	42.36	Black Mamba 15 State Com 9H (p)	391.93	193.31	1.97	SF (Lo)

Secondary Well: Black Mamba 15 State Com 7H (p) (TVD Relative to Kelly Bushing, (Primary): All Azimuth Relative to GRID NORTH)									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
0.00	0.00	2.00	269.54	0.02	0.02	50.00	49.18	60.96	
100.00	100.00	102.00	269.54	0.12	0.12	50.00	48.97	48.29	
200.00	200.00	202.00	269.54	0.34	0.34	50.00	48.52	33.73	
300.00	300.00	302.00	269.54	0.57	0.57	50.00	48.07	25.89	
400.00	400.00	402.00	269.54	0.79	0.79	50.00	47.62	21.00	
500.00	500.00	502.00	269.54	1.02	1.02	50.00	47.17	17.67	
600.00	600.00	602.00	269.54	1.24	1.24	50.00	46.72	15.25	
700.00	700.00	702.00	269.54	1.47	1.47	50.00	46.27	13.41	
800.00	800.00	802.00	269.54	1.69	1.69	50.00	45.82	11.97	
900.00	900.00	902.00	269.54	1.92	1.92	50.00	45.37	10.80	
1000.00	1000.00	1002.00	269.54	2.14	2.14	50.00	44.92	9.85	
1100.00	1100.00	1102.00	269.54	2.36	2.36	50.00	44.47	9.05	
1200.00	1200.00	1202.00	269.54	2.59	2.59	50.00	44.02	8.37	
1300.00	1300.00	1302.00	269.54	2.81	2.81	50.00	43.58	7.78	
1400.00	1400.00	1402.00	269.54	3.04	3.04	50.00	43.13	7.27	
1500.00	1500.00	1502.00	269.54	3.26	3.26	50.00	42.68	6.83	
1600.00	1600.00	1602.00	269.54	3.49	3.49	50.00	42.23	6.43	
1700.00	1700.00	1702.00	269.54	3.71	3.71	50.00	41.78	6.08	
1800.00	1800.00	1802.00	269.54	3.94	3.94	50.00	41.33	5.76	
1900.00	1900.00	1902.00	269.54	4.16	4.16	50.00	40.88	5.48	
2000.00	2000.00	2002.00	269.54	4.39	4.39	50.00	40.43	5.22	
2100.00	2100.00	2102.00	269.54	4.61	4.61	50.00	39.98	4.99	
2200.00	2200.00	2202.00	269.54	4.84	4.84	50.00	39.53	4.77	
2300.00	2300.00	2302.00	269.54	5.06	5.06	50.00	39.08	4.58	
2400.00	2400.00	2402.00	269.54	5.29	5.29	50.00	38.63	4.40	
2500.00	2500.00	2502.00	269.54	5.51	5.51	50.00	38.18	4.23	
2600.00	2600.00	2602.00	269.54	5.74	5.74	50.00	37.73	4.07	
2700.00	2700.00	2702.00	269.54	5.96	5.96	50.00	37.28	3.93	
2800.00	2800.00	2802.00	269.54	6.19	6.19	50.00	36.83	3.80	
2900.00	2900.00	2902.00	269.54	6.41	6.41	50.00	36.38	3.67	
3000.00	3000.00	3002.00	269.54	6.64	6.64	50.00	35.93	3.55	
3100.00	3100.00	3102.00	269.54	6.86	6.86	50.00	35.48	3.44	

5D Anti-Collision Report

Secondary Well: Black Mamba 15 State Com 7H (P) (TVD Relative to Kelly Bushing (Primary)); All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
3200.00	3200.00	3202.00	269.54	7.09	7.09	50.00	35.03	3.34	
3300.00	3300.00	3302.00	269.54	7.31	7.31	50.00	34.58	3.24	
3400.00	3400.00	3402.00	269.54	7.53	7.53	50.00	34.13	3.15	
3500.00	3500.00	3502.00	269.54	7.76	7.76	50.00	33.69	3.06	
3600.00	3600.00	3602.00	269.54	7.98	7.98	50.00	33.24	2.98	
3700.00	3700.00	3702.00	269.54	8.21	8.21	50.00	32.79	2.90	
3800.00	3800.00	3802.00	269.54	8.43	8.43	50.00	32.34	2.83	
3900.00	3900.00	3902.00	269.54	8.66	8.66	50.00	31.89	2.76	
4000.00	4000.00	4002.00	269.54	8.88	8.88	50.00	31.44	2.69	
4100.00	4100.00	4102.00	269.54	9.11	9.11	50.00	30.99	2.63	
4200.00	4200.00	4202.00	269.54	9.33	9.33	50.00	30.54	2.57	
4300.00	4300.00	4302.00	269.54	9.56	9.56	50.00	30.09	2.51	
4400.00	4400.00	4402.00	269.54	9.78	9.78	50.00	29.64	2.46	
4500.00	4500.00	4502.00	269.54	10.01	10.01	50.00	29.19	2.40	
4600.00	4600.00	4602.00	269.54	10.23	10.23	50.00	28.74	2.35	
4700.00	4700.00	4702.00	269.54	10.46	10.46	50.00	28.29	2.30	
4800.00	4800.00	4802.00	269.54	10.68	10.68	50.00	27.84	2.26	
4900.00	4900.00	4902.00	269.54	10.91	10.91	50.00	27.39	2.21	
5000.00	5000.00	5002.00	269.54	11.13	11.13	50.00	26.94	2.17	
5100.00	5100.00	5102.00	269.54	11.36	11.36	50.00	26.49	2.13	
5200.00	5200.00	5202.00	269.54	11.58	11.58	50.00	26.28	2.11	
5300.00	5299.97	5301.97	269.54	11.81	11.81	50.00	25.87	2.07	
5400.00	5398.19	5400.21	269.56	12.01	12.00	51.79	27.23	2.11	
5500.00	5496.06	5498.22	269.60	12.21	12.17	56.99	32.06	2.29	
5600.00	5594.31	5596.81	269.65	12.41	12.35	65.23	39.91	2.58	
5700.00	5693.56	5696.43	269.69	12.61	12.55	73.95	48.19	2.87	
5800.00	5792.80	5796.05	269.72	12.82	12.75	82.66	56.48	3.16	
5900.00	5892.04	5895.67	269.75	13.03	12.95	91.38	64.77	3.43	
6000.00	5991.28	5995.29	269.77	13.24	13.15	100.09	73.06	3.70	
6100.00	6090.52	6094.91	269.79	13.46	13.35	108.81	81.35	3.96	
6200.00	6189.76	6194.53	269.80	13.68	13.55	117.52	89.64	4.21	
6300.00	6289.00	6294.15	269.82	13.89	13.75	126.24	97.93	4.46	
6400.00	6388.24	6393.77	269.83	14.12	13.96	134.95	106.21	4.70	
6500.00	6487.48	6493.39	269.84	14.34	14.16	143.67	114.50	4.93	
6600.00	6586.72	6593.00	269.85	14.56	14.37	152.39	122.79	5.15	
6700.00	6685.96	6692.62	269.86	14.79	14.58	161.10	131.07	5.36	
6800.00	6785.20	6792.24	269.86	15.02	14.79	169.82	139.35	5.57	
6900.00	6884.44	6891.86	269.87	15.25	14.99	178.53	147.64	5.78	
7000.00	6983.68	6991.48	269.88	15.48	15.20	187.25	155.92	5.98	
7100.00	7082.92	7091.10	269.88	15.71	15.41	195.96	164.20	6.17	
7200.00	7182.16	7190.72	269.89	15.94	15.62	204.68	172.48	6.36	
7300.00	7281.40	7290.34	269.89	16.18	15.83	213.39	180.76	6.54	
7400.00	7380.64	7389.96	269.90	16.41	16.05	222.11	189.05	6.72	
7500.00	7479.88	7489.58	269.90	16.65	16.26	230.83	197.33	6.89	
7600.00	7579.12	7589.20	269.90	16.89	16.47	239.54	205.60	7.06	
7700.00	7678.36	7688.82	269.91	17.13	16.68	248.26	213.88	7.22	
7800.00	7777.60	7788.44	269.91	17.37	16.90	256.97	222.16	7.38	
7900.00	7876.84	7888.06	269.91	17.61	17.11	265.69	230.44	7.54	
8000.00	7976.08	7987.68	269.92	17.85	17.33	274.40	238.72	7.69	
8100.00	8075.32	8087.30	269.92	18.09	17.54	283.12	246.99	7.84	
8200.00	8174.56	8186.92	269.92	18.34	17.76	291.83	255.27	7.98	
8300.00	8273.81	8286.54	269.92	18.58	17.97	300.55	263.55	8.12	
8400.00	8373.05	8386.16	269.93	18.83	18.19	309.27	271.82	8.26	
8500.00	8472.29	8485.77	269.93	19.07	18.41	317.98	280.10	8.39	
8600.00	8571.53	8585.39	269.93	19.32	18.62	326.70	288.37	8.52	
8700.00	8670.77	8685.01	269.93	19.57	18.84	335.41	296.65	8.65	
8800.00	8770.01	8784.63	269.93	19.82	19.06	344.13	304.92	8.78	
8900.00	8869.25	8884.25	269.93	20.07	19.28	352.84	313.19	8.90	

5D Anti-Collision Report

Secondary Well	Black Mamba	15 State Coma	H (p) (ftVD Relative to Kelly Bushing (Primary))	All Azimuth Relative to GRID NORTH					
Prim MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
9000.00	8968.49	8983.87	269.94	20.32	19.49	361.56	321.47	9.02	
9100.00	9067.73	9083.49	269.94	20.57	19.71	370.27	329.74	9.14	
9200.00	9166.97	9183.11	269.94	20.82	19.93	378.99	338.01	9.25	
9300.00	9274.47	9290.97	269.94	21.08	20.18	387.14	345.66	9.33	
9400.00	9389.96	9406.59	269.94	21.31	20.42	391.72	349.74	9.33	
9500.00	9500.00	9516.64	269.94	21.52	20.63	392.54	350.11	9.25	
9600.00	9600.00	9616.64	269.94	21.73	20.85	392.54	349.67	9.16	
9700.00	9700.00	9716.64	269.94	21.94	21.06	392.54	349.22	9.06	
9800.00	9800.00	9816.64	269.94	22.15	21.28	392.54	348.78	8.97	
9900.00	9900.00	9916.64	269.94	22.36	21.50	392.54	348.34	8.88	
10000.00	10000.00	10016.64	269.94	22.57	21.72	392.54	347.89	8.79	
10100.00	10100.00	10116.64	269.94	22.79	21.94	392.54	347.45	8.71	
10200.00	10200.00	10216.64	269.94	23.00	22.16	392.54	347.01	8.62	
10300.00	10300.00	10316.64	90.71	23.21	22.38	392.54	346.59	8.54	
10400.00	10399.23	10415.87	92.31	23.42	22.59	392.84	346.53	8.48	
10500.00	10498.60	10515.30	95.94	23.53	22.80	394.82	348.13	8.46	
10600.00	10603.31	10621.84	99.84	23.33	22.99	398.84	351.93	8.50	
10700.00	10708.57	10734.89	103.49	23.18	22.65	404.40	357.21	8.57	
10800.00	10809.31	10855.00	106.74	23.42	21.54	410.76	363.21	8.64	
10900.00	10898.76	10982.19	109.45	23.77	20.13	416.99	369.16	8.72	
11000.00	10968.91	11115.73	111.44	24.28	18.75	422.09	373.98	8.77	
11100.00	11011.94	11253.92	112.57	24.95	17.78	425.19	376.42	8.72	
11200.00	11022.94	11386.79	112.77	25.88	17.72	425.73	375.78	8.52	
11300.00	11022.63	11486.79	112.63	26.67	17.89	425.30	373.96	8.28	
11400.00	11022.32	11586.78	112.49	27.58	18.08	424.87	371.90	8.02	
11500.00	11022.01	11686.77	112.35	28.51	18.29	424.45	369.73	7.76	
11600.00	11021.70	11786.77	112.20	29.52	18.54	424.03	367.43	7.49	
11700.00	11021.39	11886.76	112.06	30.70	18.81	423.60	364.89	7.21	
11800.00	11021.08	11986.75	111.92	31.92	19.10	423.19	362.23	6.94	
11900.00	11020.77	12086.75	111.78	33.18	19.41	422.77	359.44	6.68	
12000.00	11020.46	12186.74	111.63	34.48	19.75	422.36	356.56	6.42	
12100.00	11020.15	12286.73	111.49	35.81	20.10	421.95	353.60	6.17	
12200.00	11019.84	12386.73	111.34	37.18	20.46	421.54	350.56	5.94	
12300.00	11019.54	12486.72	111.20	38.58	20.85	421.14	347.45	5.72	
12400.00	11019.23	12586.72	111.06	40.02	21.30	420.74	344.28	5.50	
12500.00	11018.92	12686.71	110.91	41.47	21.76	420.34	341.05	5.30	
12600.00	11018.61	12786.70	110.77	42.96	22.23	419.94	337.76	5.11	
12700.00	11018.30	12886.70	110.62	44.50	22.66	419.55	334.42	4.93	
12800.00	11017.99	12986.69	110.48	46.07	23.17	419.16	331.04	4.76	
12900.00	11017.68	13086.68	110.33	47.67	23.65	418.77	327.66	4.60	
13000.00	11017.37	13186.68	110.18	49.28	24.13	418.38	324.41	4.45	
13100.00	11017.06	13286.67	110.04	50.90	24.69	418.00	320.79	4.30	
13200.00	11016.75	13386.66	109.89	52.54	25.22	417.62	317.30	4.16	
13300.00	11016.44	13486.66	109.75	54.19	25.66	417.24	313.63	4.03	
13400.00	11016.13	13586.65	109.60	55.85	26.29	416.87	310.01	3.90	
13500.00	11015.82	13686.64	109.45	57.52	26.86	416.49	306.39	3.78	
13600.00	11015.51	13786.64	109.30	59.19	27.41	416.12	302.76	3.67	
13700.00	11015.20	13886.63	109.16	60.88	27.96	415.76	299.12	3.56	
13800.00	11014.89	13986.63	109.01	62.58	28.52	415.39	295.46	3.46	
13900.00	11014.59	14086.62	108.86	64.28	29.08	415.03	291.78	3.37	
14000.00	11014.28	14186.61	108.71	65.99	29.65	414.67	288.09	3.28	
14100.00	11013.97	14286.61	108.56	67.70	30.26	414.32	284.39	3.19	
14200.00	11013.66	14386.60	108.41	69.42	30.87	413.97	280.67	3.11	
14300.00	11013.35	14486.59	108.26	71.15	31.50	413.62	276.94	3.03	
14400.00	11013.04	14586.59	108.11	72.88	32.12	413.27	273.20	2.95	
14500.00	11012.73	14686.58	107.96	74.62	32.75	412.93	269.45	2.88	
14600.00	11012.42	14786.57	107.81	76.36	33.38	412.58	265.69	2.81	
14700.00	11012.11	14886.57	107.66	78.10	34.01	412.25	261.92	2.74	

5D Anti-Collision Report

Secondary Well: Black Mamba 15 State Com 9H (p) (TVD Relative to Kelly Bushing (Primary)) All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
14800.00	11011.80	14986.56	107.51	79.85	34.65	411.91	258.14	2.68	
14900.00	11011.49	15086.55	107.36	81.60	35.29	411.58	254.36	2.62	
15000.00	11011.18	15186.55	107.21	83.36	35.94	411.25	250.56	2.56	
15100.00	11010.87	15286.54	107.06	85.11	36.59	410.92	246.76	2.50	
15200.00	11010.56	15386.54	106.91	86.88	37.24	410.60	242.95	2.45	
15300.00	11010.25	15486.53	106.76	88.64	37.89	410.27	239.14	2.40	
15400.00	11009.94	15586.52	106.60	90.41	38.54	409.96	235.32	2.35	
15500.00	11009.64	15686.52	106.45	92.18	39.20	409.64	231.50	2.30	
15600.00	11009.33	15786.51	106.30	93.95	39.86	409.33	227.67	2.25	
15700.00	11009.02	15886.50	106.15	95.72	40.53	409.02	223.84	2.21	
15800.00	11008.71	15986.50	105.99	97.50	41.19	408.71	220.00	2.17	
15900.00	11008.40	16086.49	105.84	99.28	41.86	408.41	216.16	2.12	
16000.00	11008.09	16186.48	105.69	101.05	42.53	408.11	212.31	2.08	
16031.74	11008.00	16215.03	105.64	101.56	42.72	408.02	211.11	2.07	

Secondary Well: Black Mamba 15 State Com 9H (p) (TVD Relative to Kelly Bushing (Primary)) All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
0.00	1.00	0.00	89.52	0.00	0.00	50.00	49.20	62.02	
100.00	100.00	99.00	89.52	0.11	0.11	49.99	48.97	48.71	
200.00	200.00	199.00	89.52	0.34	0.34	49.99	48.52	33.89	
300.00	300.00	299.00	89.52	0.56	0.56	49.99	48.07	25.98	
400.00	400.00	399.00	89.52	0.78	0.78	49.99	47.62	21.06	
500.00	500.00	499.00	89.52	1.01	1.01	49.99	47.17	17.71	
600.00	600.00	599.00	89.52	1.23	1.23	49.99	46.72	15.28	
700.00	700.00	699.00	89.52	1.46	1.46	49.99	46.27	13.43	
800.00	800.00	799.00	89.52	1.68	1.68	49.99	45.82	11.98	
900.00	900.00	899.00	89.52	1.91	1.91	49.99	45.37	10.82	
1000.00	1000.00	999.00	89.52	2.13	2.13	49.99	44.92	9.86	
1100.00	1100.00	1099.00	89.52	2.36	2.36	49.99	44.47	9.06	
1200.00	1200.00	1199.00	89.52	2.58	2.58	49.99	44.02	8.37	
1300.00	1300.00	1299.00	89.52	2.81	2.81	49.99	43.57	7.79	
1400.00	1400.00	1399.00	89.52	3.03	3.03	49.99	43.12	7.28	
1500.00	1500.00	1499.00	89.52	3.26	3.26	49.99	42.67	6.83	
1600.00	1600.00	1599.00	89.52	3.48	3.48	49.99	42.22	6.44	
1700.00	1700.00	1699.00	89.52	3.71	3.71	49.99	41.77	6.08	
1800.00	1800.00	1799.00	89.52	3.93	3.93	49.99	41.32	5.77	
1900.00	1900.00	1899.00	89.52	4.16	4.16	49.99	40.88	5.48	
2000.00	2000.00	1999.00	89.52	4.38	4.38	49.99	40.43	5.23	
2100.00	2100.00	2099.00	89.52	4.61	4.61	49.99	39.98	4.99	
2200.00	2200.00	2199.00	89.52	4.83	4.83	49.99	39.53	4.78	
2300.00	2300.00	2299.00	89.52	5.06	5.06	49.99	39.08	4.58	
2400.00	2400.00	2399.00	89.52	5.28	5.28	49.99	38.63	4.40	
2500.00	2500.00	2499.00	89.52	5.51	5.51	49.99	38.18	4.23	
2600.00	2600.00	2599.00	89.52	5.73	5.73	49.99	37.73	4.08	
2700.00	2700.00	2699.00	89.52	5.95	5.95	49.99	37.28	3.93	
2800.00	2800.00	2799.00	89.52	6.18	6.18	49.99	36.83	3.80	
2900.00	2900.00	2899.00	89.52	6.40	6.40	49.99	36.38	3.67	
3000.00	3000.00	2999.00	89.52	6.63	6.63	49.99	35.93	3.56	
3100.00	3100.00	3099.00	89.52	6.85	6.85	49.99	35.48	3.45	
3200.00	3200.00	3199.00	89.52	7.08	7.08	49.99	35.03	3.34	
3300.00	3300.00	3299.00	89.52	7.30	7.30	49.99	34.58	3.24	
3400.00	3400.00	3399.00	89.52	7.53	7.53	49.99	34.13	3.15	
3500.00	3500.00	3499.00	89.52	7.75	7.75	49.99	33.68	3.07	
3600.00	3600.00	3599.00	89.52	7.98	7.98	49.99	33.23	2.98	
3700.00	3700.00	3699.00	89.52	8.20	8.20	49.99	32.78	2.91	
3800.00	3800.00	3799.00	89.52	8.43	8.43	49.99	32.33	2.83	
3900.00	3900.00	3899.00	89.52	8.65	8.65	49.99	31.88	2.76	
4000.00	4000.00	3999.00	89.52	8.88	8.88	49.99	31.43	2.69	

5D Anti-Collision Report

Secondary Well: Black Mamba 15 State Com 9H (P) (TVD Relative to Kelly Bushing (Primary)) / All Azimuth Relative to GRID (North)									
Pr. MD (US ft)	TVD (US ft)	Sec MD (US ft)	T. Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
4100.00	4100.00	4099.00	89.52	9.10	9.10	49.99	30.98	2.63	
4200.00	4200.00	4199.00	89.52	9.33	9.33	49.99	30.54	2.57	
4300.00	4300.00	4299.00	89.52	9.55	9.55	49.99	30.09	2.51	
4400.00	4400.00	4399.00	89.52	9.78	9.78	49.99	29.64	2.46	
4500.00	4500.00	4499.00	89.52	10.00	10.00	49.99	29.19	2.40	
4600.00	4600.00	4599.00	89.52	10.23	10.23	49.99	28.74	2.35	
4700.00	4700.00	4699.00	89.52	10.45	10.45	49.99	28.29	2.30	
4800.00	4800.00	4799.00	89.52	10.68	10.68	49.99	27.84	2.26	
4900.00	4900.00	4899.00	89.52	10.90	10.90	49.99	27.39	2.21	
5000.00	5000.00	4999.00	89.52	11.12	11.12	49.99	26.94	2.17	
5100.00	5100.00	5099.00	89.52	11.35	11.35	49.99	26.49	2.13	
5200.00	5200.00	5199.00	89.52	11.57	11.57	49.99	26.16	2.10	
5300.00	5300.00	5299.00	89.52	11.80	11.80	49.99	25.83	2.07	
5400.00	5398.25	5397.26	89.53	12.01	12.00	51.67	27.13	2.11	
5500.00	5496.13	5495.28	89.58	12.20	12.17	56.78	31.86	2.28	
5600.00	5594.34	5593.82	89.63	12.40	12.34	64.96	39.66	2.57	
5700.00	5693.58	5693.44	89.67	12.61	12.54	73.67	47.95	2.86	
5800.00	5792.82	5793.06	89.71	12.81	12.74	82.39	56.24	3.15	
5900.00	5892.06	5892.68	89.73	13.02	12.94	91.11	64.53	3.43	
6000.00	5991.30	5992.30	89.76	13.23	13.14	99.82	72.82	3.70	
6100.00	6090.54	6091.92	89.78	13.45	13.34	108.54	81.11	3.96	
6200.00	6189.78	6191.54	89.79	13.67	13.54	117.25	89.40	4.21	
6300.00	6289.02	6291.16	89.81	13.88	13.74	125.97	97.69	4.45	
6400.00	6388.26	6390.78	89.82	14.10	13.95	134.68	105.98	4.69	
6500.00	6487.50	6490.40	89.83	14.33	14.15	143.40	114.26	4.92	
6600.00	6586.74	6590.02	89.84	14.55	14.36	152.11	122.55	5.15	
6700.00	6685.98	6689.64	89.85	14.77	14.57	160.83	130.83	5.36	
6800.00	6785.22	6789.26	89.86	15.00	14.77	169.55	139.12	5.57	
6900.00	6884.46	6888.88	89.86	15.23	14.98	178.26	147.40	5.78	
7000.00	6983.70	6988.50	89.87	15.46	15.19	186.98	155.69	5.98	
7100.00	7082.94	7088.11	89.88	15.69	15.40	195.69	163.97	6.17	
7200.00	7182.18	7187.73	89.88	15.92	15.61	204.41	172.25	6.36	
7300.00	7281.43	7287.35	89.89	16.16	15.82	213.12	180.53	6.54	
7400.00	7380.67	7386.97	89.89	16.39	16.03	221.84	188.81	6.72	
7500.00	7479.91	7486.59	89.90	16.63	16.24	230.55	197.09	6.89	
7600.00	7579.15	7586.21	89.90	16.87	16.46	239.27	205.37	7.06	
7700.00	7678.39	7685.83	89.90	17.11	16.67	247.99	213.65	7.22	
7800.00	7777.63	7785.45	89.91	17.34	16.88	256.70	221.93	7.38	
7900.00	7876.87	7885.07	89.91	17.59	17.10	265.42	230.21	7.54	
8000.00	7976.11	7984.69	89.91	17.83	17.31	274.13	238.49	7.69	
8100.00	8075.35	8084.31	89.91	18.07	17.53	282.85	246.76	7.84	
8200.00	8174.59	8183.93	89.92	18.31	17.74	291.56	255.04	7.98	
8300.00	8273.83	8283.55	89.92	18.56	17.96	300.28	263.32	8.12	
8400.00	8373.07	8383.17	89.92	18.80	18.17	308.99	271.59	8.26	
8500.00	8472.31	8482.79	89.92	19.05	18.39	317.71	279.87	8.40	
8600.00	8571.55	8582.41	89.93	19.29	18.61	326.43	288.14	8.53	
8700.00	8670.79	8682.03	89.93	19.54	18.82	335.14	296.42	8.65	
8800.00	8770.03	8781.65	89.93	19.79	19.04	343.86	304.69	8.78	
8900.00	8869.27	8881.26	89.93	20.04	19.26	352.57	312.97	8.90	
9000.00	8968.51	8980.88	89.93	20.28	19.48	361.29	321.24	9.02	
9100.00	9067.75	9080.50	89.93	20.53	19.69	370.00	329.51	9.14	
9200.00	9177.17	9190.25	89.94	20.79	19.95	377.83	336.81	9.21	
9300.00	9292.26	9305.45	89.94	21.02	20.18	381.86	340.36	9.20	
9400.00	9400.00	9413.19	89.94	21.23	20.39	382.37	340.43	9.12	
9500.00	9500.00	9513.19	89.94	21.44	20.61	382.37	339.99	9.02	
9600.00	9600.00	9613.19	89.94	21.65	20.83	382.37	339.54	8.93	
9700.00	9700.00	9713.19	89.94	21.86	21.05	382.37	339.10	8.84	
9800.00	9800.00	9813.19	89.94	22.07	21.26	382.37	338.66	8.75	

SD Anti-Collision Report

Secondary Well ID (US ft)	Black Manba 15 State TVD (US ft)	Com 9H (b) Sec MD (US ft)	(if VD Relative to Kelly Bushing (Primary)) T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	CC (US ft)	All Azimuth Relative to GRID NORTH ES (US ft)	SF	Risk
9900.00	9900.00	9913.19	89.94	22.29	21.48	382.37	338.22	8.66	
10000.00	10000.00	10013.19	89.94	22.50	21.70	382.37	337.77	8.57	
10100.00	10100.00	10113.19	89.94	22.71	21.92	382.37	337.33	8.49	
10200.00	10200.00	10213.19	89.94	22.93	22.14	382.37	336.89	8.41	
10300.00	10300.00	10313.19	270.65	23.14	22.36	382.37	336.47	8.33	
10400.00	10399.23	10412.43	268.98	23.35	22.58	382.41	336.23	8.28	
10500.00	10498.63	10511.97	265.41	23.38	22.78	383.66	336.96	8.21	
10600.00	10501.16	10616.86	261.76	23.16	22.93	386.59	339.65	8.24	
10700.00	10702.97	10727.31	258.31	23.17	22.46	390.88	343.71	8.29	
10800.00	10799.38	10843.69	255.21	23.43	21.37	396.00	348.37	8.31	
10900.00	10884.42	10966.04	252.57	23.77	20.03	401.22	353.23	8.36	
11000.00	10951.31	11093.84	250.56	24.23	18.69	405.75	357.40	8.39	
11100.00	10993.41	11225.89	249.28	24.97	17.78	408.84	359.79	8.33	
11200.00	11005.97	11357.28	248.86	25.84	17.66	409.88	359.68	8.17	
11300.00	11005.55	11457.28	249.02	26.70	17.82	409.43	357.73	7.92	
11400.00	11005.14	11557.27	249.19	27.58	18.01	408.98	355.66	7.67	
11500.00	11004.73	11657.26	249.35	28.49	18.23	408.53	353.46	7.42	
11600.00	11004.31	11757.25	249.51	29.57	18.47	408.09	351.04	7.15	
11700.00	11003.90	11857.24	249.67	30.74	18.74	407.65	348.42	6.88	
11800.00	11003.49	11957.24	249.84	31.95	19.03	407.21	345.69	6.62	
11900.00	11003.08	12057.23	250.00	33.20	19.34	406.78	342.87	6.36	
12000.00	11002.66	12157.22	250.16	34.49	19.67	406.35	339.95	6.12	
12100.00	11002.25	12257.21	250.33	35.82	20.02	405.93	336.95	5.89	
12200.00	11001.84	12357.21	250.49	37.19	20.39	405.50	333.88	5.66	
12300.00	11001.42	12457.20	250.66	38.59	20.77	405.09	330.73	5.45	
12400.00	11001.01	12557.19	250.82	40.02	21.20	404.67	327.52	5.25	
12500.00	11000.60	12657.18	250.99	41.47	21.67	404.26	324.25	5.05	
12600.00	11000.18	12757.18	251.15	43.01	22.14	403.85	320.93	4.87	
12700.00	10999.77	12857.17	251.32	44.56	22.59	403.44	317.55	4.70	
12800.00	10999.36	12957.16	251.48	46.14	23.06	403.04	314.13	4.53	
12900.00	10998.95	13057.15	251.65	47.73	23.54	402.64	310.69	4.38	
13000.00	10998.53	13157.14	251.82	49.34	24.05	402.25	307.37	4.24	
13100.00	10998.12	13257.14	251.98	50.97	24.60	401.85	303.76	4.10	
13200.00	10997.71	13357.13	252.15	52.60	25.13	401.47	300.18	3.96	
13300.00	10997.29	13457.12	252.32	54.25	25.59	401.08	296.48	3.83	
13400.00	10996.88	13557.11	252.49	55.91	26.21	400.70	292.82	3.71	
13500.00	10996.47	13657.11	252.66	57.58	26.77	400.32	289.16	3.60	
13600.00	10996.05	13757.10	252.83	59.25	27.31	399.95	285.50	3.49	
13700.00	10995.64	13857.09	252.99	60.94	27.86	399.57	281.82	3.39	
13800.00	10995.23	13957.08	253.16	62.63	28.41	399.21	278.12	3.30	
13900.00	10994.81	14057.08	253.33	64.34	28.97	398.84	274.42	3.21	
14000.00	10994.40	14157.07	253.50	66.04	29.56	398.48	270.69	3.12	
14100.00	10993.99	14257.06	253.67	67.76	30.18	398.12	266.96	3.04	
14200.00	10993.58	14357.05	253.85	69.48	30.79	397.77	263.21	2.96	
14300.00	10993.16	14457.05	254.02	71.20	31.41	397.42	259.46	2.88	
14400.00	10992.75	14557.04	254.19	72.94	32.04	397.07	255.69	2.81	
14500.00	10992.34	14657.03	254.36	74.67	32.66	396.73	251.91	2.74	
14600.00	10991.92	14757.02	254.53	76.41	33.29	396.39	248.12	2.67	
14700.00	10991.51	14857.01	254.70	78.16	33.93	396.05	244.33	2.61	
14800.00	10991.10	14957.01	254.88	79.90	34.57	395.72	240.53	2.55	
14900.00	10990.68	15057.00	255.05	81.65	35.21	395.39	236.72	2.49	
15000.00	10990.27	15156.99	255.22	83.41	35.85	395.07	232.91	2.44	
15100.00	10989.86	15256.98	255.40	85.17	36.50	394.75	229.09	2.38	
15200.00	10989.45	15356.98	255.57	86.93	37.15	394.43	225.26	2.33	
15300.00	10989.03	15456.97	255.74	88.69	37.80	394.11	221.43	2.28	
15400.00	10988.62	15556.96	255.92	90.46	38.46	393.80	217.60	2.23	
15500.00	10988.21	15656.95	256.09	92.23	39.11	393.50	213.76	2.19	
15600.00	10987.79	15756.95	256.27	94.00	39.77	393.19	209.92	2.15	

HOBBS OCD

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5D Anti-Collision Report

Secondary Well: Black Mamba 15 State Com 9H (p) (TVD Relative to Kelly Bushing (Primary); All Azimuth Relative to GRID NORTH)									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
15700.00	10987.38	15856.94	256.44	95.77	40.44	392.89	206.08	2.10	
15800.00	10986.97	15956.93	256.62	97.55	41.10	392.60	202.23	2.06	
15900.00	10986.55	16056.92	256.79	99.33	41.77	392.31	198.38	2.02	
16000.00	10986.14	16156.92	256.97	101.11	42.44	392.02	194.53	1.99	SF (Lo)
16031.74	10986.01	16188.66	257.02	101.67	42.65	391.93	193.31	1.97	SF (Lo)



Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: June 03, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Black Mamba 15 State Com 8H
API Number: _____
Rig Name: _____
Location: Lea Co, NM Nad83 NME
Block: _____
Engineer: RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 478571.11 US Survey Foot	Latitude: 32.313259 Degree
East: 782055.33 US Survey Foot	Longitude: -103.554144 Degree
Convergence: 0.42°	
Declination: 7.22°	
Total Correction: 6.80°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 18' 47.73" N
Longitude = 103° 33' 14.92" W

Magnetic Declination = 7.22 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6530
Local Field Strength = 48264 nT	Magnetic Vector X = 23778 nT
Magnetic Dip = 60.22 deg	Magnetic Vector Y = 3011 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 41892 nT
Run Date = October 30, 2015	Magnetic Vector H = 23968 nT

Signed: _____ Date: _____

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