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5D Anti-Collision Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*

Site Name: *Green Wave 20-29 Fed 76H,77H,78H Pad*

Well Name: *Green Wave 20-29 Fed 78H Lat*

12 May 2015



Weatherford®



Weatherford®

Green Wave 20-29 Fed 78H Lat

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 Green Wave 20-29 Fed 76H, 77H, 78H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.45	
	Position	Northing : 375210.52 US ft	Latitude : 32° 1' 43.35"	
		Easting : 803702.93 US ft	Longitude : -103° 29' 12.16"	
	Elevation above Mean Sea Level: 3349.00 US ft			
Comment :				
Slot Name Green Wave 20-29 Fed 78H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.59 US ft	Northing : 375211.11 US ft	Latitude : 32° 1' 43.35"	
	+E / -W : 99.95 US ft	Easting : 803802.88 US ft	Longitude : -103° 29' 11.00"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3348.00 US ft				
Comment :				
Well Name Green Wave 20-29 Fed 78H Lat	Type : Sidetrack	UWI :	Plan : Working Plan	
	Parent : Green Wave 20-29 Fed 78H Pilot	Tie Point Method : TVD	Tie Point : 12115.00 US ft	
	Rig Height : Kelly Bushing : 30.00 US ft	Comment :		
	Relative to Mean Sea Level: 3378.00 US ft			
	Closure Distance : 7533.71 US ft	Closure Azimuth : 175.041°		
	Vertical Section (Position of Origin Relative to Slot) \			
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az : 179.49°	
	Magnetic Parameters			
	Model : BGGM	Field Strength : 48025.3nT	Dec : 7.18°	Dip : 59.90°
			Date : 15/Nov/2015	

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Green Wave 20-29 Fed 78H Lat (p)	0.00	19989.92	100.00	2

Secondary Well Names
Green Wave 20-29 Fed 76H (p)
Green Wave 20-29 Fed 77H (p)
Green Wave 20-29 Fed 78H Pilot (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

5D Anti-Collision Report

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

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
Green Wave 20-29 Fed 78H Pilot (p)	12142.54	12142.54	12115.00	0.00	-53.58	0.00	SF (Hi)
Green Wave 20-29 Fed 77H (p)	19989.92	19912.86	12614.00	659.92	380.46	2.36	
Green Wave 20-29 Fed 76H (p)	19989.92	19977.15	12614.00	1270.08	990.28	4.54	

Primary Well : Green Wave 20-29 Fed 78H Lat (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
12142.54	12115.00	85.69	28.36	26.52	Green Wave 20-29 Fed 78H Pilot (p)	0.00	-53.58	0.00	SF (Hi)
12242.54	12214.39	180.00	28.28	26.70	Green Wave 20-29 Fed 78H Pilot (p)	9.57	-48.09	0.17	SF (Hi)
12342.54	12310.12	180.00	27.76	26.87	Green Wave 20-29 Fed 78H Pilot (p)	37.93	-20.06	0.65	SF (Hi)
12442.54	12398.69	180.00	27.08	26.81	Green Wave 20-29 Fed 78H Pilot (p)	84.03	25.76	1.44	SF (Med)
12542.54	12476.83	180.00	27.24	25.75	Green Wave 20-29 Fed 78H Pilot (p)	146.19	87.57	2.49	
12642.54	12541.67	180.00	27.48	24.67	Green Wave 20-29 Fed 78H Pilot (p)	222.11	163.30	3.78	
12742.54	12590.84	180.00	27.76	23.71	Green Wave 20-29 Fed 78H Pilot (p)	309.01	250.04	5.24	
12842.54	12622.52	180.00	28.12	22.95	Green Wave 20-29 Fed 78H Pilot (p)	403.70	344.56	6.83	
12942.54	12635.55	180.00	28.69	22.84	Green Wave 20-29 Fed 78H Pilot (p)	502.69	443.54	8.50	
13042.54	12635.62	359.98	29.30	22.94	Green Wave 20-29 Fed 78H Pilot (p)	602.69	543.52	10.19	
13142.54	12635.31	89.13	29.90	23.07	Green Wave 20-29 Fed 77H (p)	660.89	600.34	10.91	
13242.54	12635.00	89.13	30.75	23.21	Green Wave 20-29 Fed 77H (p)	660.88	598.75	10.64	
13342.54	12634.69	89.13	31.59	23.38	Green Wave 20-29 Fed 77H (p)	660.86	597.07	10.36	
13442.54	12634.37	89.13	32.47	23.55	Green Wave 20-29 Fed 77H (p)	660.85	595.29	10.08	
13542.54	12634.06	89.13	33.56	23.78	Green Wave 20-29 Fed 77H (p)	660.83	593.19	9.77	
13642.54	12633.75	89.13	34.65	24.05	Green Wave 20-29 Fed 77H (p)	660.82	591.03	9.47	
13742.54	12633.44	89.13	35.76	24.34	Green Wave 20-29 Fed 77H (p)	660.81	588.79	9.18	
13842.54	12633.13	89.13	36.88	24.65	Green Wave 20-29 Fed 77H (p)	660.79	586.47	8.89	
13942.54	12632.82	89.13	38.13	24.94	Green Wave 20-29 Fed 77H (p)	660.78	584.03	8.61	
14042.54	12632.51	89.13	39.46	25.24	Green Wave 20-29 Fed 77H (p)	660.76	581.40	8.33	

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Primary Well : Green Wave 20-29 Fed 77H Lat (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)	IES (US ft)	SF	Risk
14142.54	12632.20	89.13	40.82	25.51	Green Wave 20-29 Fed 77H (p)	660.75	578.71	8.05	
14242.54	12631.88	89.13	42.20	25.94	Green Wave 20-29 Fed 77H (p)	660.73	575.96	7.79	
14342.54	12631.57	89.13	43.59	26.33	Green Wave 20-29 Fed 77H (p)	660.72	573.16	7.55	
14442.54	12631.26	89.13	45.00	26.69	Green Wave 20-29 Fed 77H (p)	660.71	570.31	7.31	
14542.54	12630.95	89.13	46.42	27.14	Green Wave 20-29 Fed 77H (p)	660.69	567.42	7.08	
14642.54	12630.64	89.13	47.85	27.60	Green Wave 20-29 Fed 77H (p)	660.68	564.50	6.87	
14742.54	12630.33	89.13	49.29	28.01	Green Wave 20-29 Fed 77H (p)	660.66	561.56	6.67	
14842.54	12630.02	89.13	50.80	28.40	Green Wave 20-29 Fed 77H (p)	660.65	558.58	6.47	
14942.54	12629.71	89.13	52.36	28.87	Green Wave 20-29 Fed 77H (p)	660.63	555.55	6.29	
15042.54	12629.40	89.13	53.93	29.20	Green Wave 20-29 Fed 77H (p)	660.62	552.43	6.11	
15142.54	12629.08	89.13	55.50	29.73	Green Wave 20-29 Fed 77H (p)	660.61	549.23	5.93	
15242.54	12628.77	89.13	57.10	30.24	Green Wave 20-29 Fed 77H (p)	660.59	546.01	5.77	
15342.54	12628.46	89.13	58.73	30.71	Green Wave 20-29 Fed 77H (p)	660.58	542.77	5.61	
15442.54	12628.15	89.13	60.37	31.15	Green Wave 20-29 Fed 77H (p)	660.56	539.50	5.46	
15542.54	12627.84	89.13	62.02	31.66	Green Wave 20-29 Fed 77H (p)	660.55	536.21	5.31	
15642.54	12627.53	89.13	63.68	32.22	Green Wave 20-29 Fed 77H (p)	660.54	532.90	5.18	
15742.54	12627.22	89.13	65.35	32.78	Green Wave 20-29 Fed 77H (p)	660.52	529.58	5.04	
15842.54	12626.91	89.13	67.02	33.33	Green Wave 20-29 Fed 77H (p)	660.51	526.23	4.92	
15942.54	12626.59	89.13	68.70	33.88	Green Wave 20-29 Fed 77H (p)	660.49	522.87	4.80	
16042.54	12626.28	89.13	70.39	34.43	Green Wave 20-29 Fed 77H (p)	660.48	519.50	4.68	
16142.54	12625.97	89.13	72.09	34.98	Green Wave 20-29 Fed 77H (p)	660.46	516.11	4.58	
16242.54	12625.66	89.13	73.79	35.53	Green Wave 20-29 Fed 77H (p)	660.45	512.71	4.47	
16342.54	12625.35	89.13	75.49	36.09	Green Wave 20-29 Fed 77H (p)	660.44	509.29	4.37	
16442.54	12625.04	89.13	77.20	36.66	Green Wave 20-29 Fed 77H (p)	660.42	505.87	4.27	
16542.54	12624.73	89.13	78.92	37.22	Green Wave 20-29 Fed 77H (p)	660.41	502.43	4.18	
16642.54	12624.42	89.13	80.64	37.80	Green Wave 20-29 Fed 77H (p)	660.39	498.99	4.09	

5D Anti-Collision Report

Primary Well : Green Wave 20-29 Fed 78H Lat (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
16742.54	12624.11	89.13	82.36	38.37	Green Wave 20-29 Fed 77H (p)	660.38	495.53	4.01	
16842.54	12623.79	89.13	84.09	38.96	Green Wave 20-29 Fed 77H (p)	660.36	492.07	3.92	
16942.54	12623.48	89.13	85.82	39.54	Green Wave 20-29 Fed 77H (p)	660.35	488.60	3.84	
17042.54	12623.17	89.13	87.56	40.13	Green Wave 20-29 Fed 77H (p)	660.34	485.12	3.77	
17142.54	12622.86	89.13	89.30	40.73	Green Wave 20-29 Fed 77H (p)	660.32	481.63	3.70	
17242.54	12622.55	89.13	91.04	41.32	Green Wave 20-29 Fed 77H (p)	660.31	478.14	3.62	
17342.54	12622.24	89.13	92.79	41.94	Green Wave 20-29 Fed 77H (p)	660.29	474.64	3.56	
17442.54	12621.93	89.13	94.54	42.57	Green Wave 20-29 Fed 77H (p)	660.28	471.13	3.49	
17542.54	12621.62	89.13	96.29	43.20	Green Wave 20-29 Fed 77H (p)	660.26	467.62	3.43	
17642.54	12621.30	89.13	98.05	43.84	Green Wave 20-29 Fed 77H (p)	660.25	464.10	3.37	
17742.54	12620.99	89.13	99.80	44.48	Green Wave 20-29 Fed 77H (p)	660.24	460.57	3.31	
17842.54	12620.68	89.13	101.56	45.12	Green Wave 20-29 Fed 77H (p)	660.22	457.04	3.25	
17942.54	12620.37	89.13	103.33	45.76	Green Wave 20-29 Fed 77H (p)	660.21	453.51	3.19	
18042.54	12620.06	89.13	105.09	46.41	Green Wave 20-29 Fed 77H (p)	660.19	449.97	3.14	
18142.54	12619.75	89.13	106.86	47.05	Green Wave 20-29 Fed 77H (p)	660.18	446.43	3.09	
18242.54	12619.44	89.13	108.62	47.70	Green Wave 20-29 Fed 77H (p)	660.17	442.88	3.04	
18342.54	12619.13	89.13	110.39	48.36	Green Wave 20-29 Fed 77H (p)	660.15	439.33	2.99	
18442.54	12618.82	89.13	112.17	49.01	Green Wave 20-29 Fed 77H (p)	660.14	435.78	2.94	
18542.54	12618.50	89.13	113.94	49.67	Green Wave 20-29 Fed 77H (p)	660.12	432.22	2.90	
18642.54	12618.19	89.13	115.71	50.33	Green Wave 20-29 Fed 77H (p)	660.11	428.66	2.85	
18742.54	12617.88	89.13	117.49	50.99	Green Wave 20-29 Fed 77H (p)	660.09	425.09	2.81	
18842.54	12617.57	89.13	119.27	51.65	Green Wave 20-29 Fed 77H (p)	660.08	421.53	2.77	
18942.54	12617.26	89.13	121.05	52.31	Green Wave 20-29 Fed 77H (p)	660.07	417.96	2.73	
19042.54	12616.95	89.13	122.83	52.98	Green Wave 20-29 Fed 77H (p)	660.05	414.38	2.69	
19142.54	12616.64	89.13	124.61	53.64	Green Wave 20-29 Fed 77H (p)	660.04	410.81	2.65	
19242.54	12616.33	89.13	126.40	54.31	Green Wave 20-29 Fed 77H (p)	660.02	407.23	2.61	

5D Anti-Collision Report

Primary Well : Green Wave 20-29 Fed 78H Lat (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
19342.54	12616.01	89.13	128.18	54.98	Green Wave 20-29 Fed 77H (p)	660.01	403.64	2.57	
19442.54	12615.70	89.13	129.97	55.66	Green Wave 20-29 Fed 77H (p)	659.99	400.06	2.54	
19542.54	12615.39	89.13	131.75	56.33	Green Wave 20-29 Fed 77H (p)	659.98	396.47	2.50	
19642.54	12615.08	89.13	133.54	57.00	Green Wave 20-29 Fed 77H (p)	659.97	392.89	2.47	
19742.54	12614.77	89.13	135.33	57.68	Green Wave 20-29 Fed 77H (p)	659.95	389.30	2.44	
19842.54	12614.46	89.13	137.12	58.36	Green Wave 20-29 Fed 77H (p)	659.94	385.70	2.41	
19942.54	12614.15	89.13	138.91	59.04	Green Wave 20-29 Fed 77H (p)	659.92	382.11	2.38	
19989.92	12614.00	89.13	139.76	59.36	Green Wave 20-29 Fed 77H (p)	659.92	380.46	2.36	

Secondary Well : Green Wave 20-29 Fed 76H (p) (TVD Relative to Kelly Bushing (Primary) ; All Azimuth Relative to GRID NORTH)									
PH 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
12142.54	12115.08	12144.08	269.62	28.27	26.43	1270.01	1216.53	23.75	
12242.54	12214.42	12244.33	90.01	28.15	26.61	1270.00	1216.13	23.58	
12342.54	12309.09	12344.06	89.88	27.58	26.78	1270.01	1215.83	23.44	
12442.54	12395.74	12443.28	89.76	26.96	26.57	1270.01	1215.60	23.34	
12542.54	12471.39	12542.03	89.65	27.13	25.61	1270.03	1215.12	23.13	
12642.54	12533.53	12640.35	89.56	27.34	24.49	1270.04	1214.67	22.94	
12742.54	12580.17	12738.32	89.48	27.61	23.61	1270.06	1214.17	22.73	
12842.54	12609.84	12836.00	89.41	28.04	22.91	1270.07	1213.42	22.42	
12942.54	12621.67	12933.47	89.37	28.55	22.81	1270.08	1212.37	22.01	
13042.54	12621.62	13033.04	89.37	29.12	22.90	1270.08	1211.21	21.58	
13142.54	12621.30	13133.04	89.37	29.77	23.03	1270.08	1209.95	21.12	
13242.54	12620.99	13233.04	89.37	30.57	23.17	1270.08	1208.32	20.56	
13342.54	12620.68	13333.04	89.37	31.43	23.34	1270.08	1206.61	20.01	
13442.54	12620.37	13433.04	89.37	32.26	23.51	1270.08	1204.91	19.49	
13542.54	12620.06	13533.04	89.37	33.37	23.76	1270.08	1202.71	18.85	
13642.54	12619.75	13633.04	89.37	34.47	24.03	1270.08	1200.49	18.25	
13742.54	12619.44	13733.04	89.37	35.58	24.32	1270.08	1198.26	17.68	
13842.54	12619.13	13833.04	89.37	36.72	24.62	1270.08	1195.97	17.14	
13942.54	12618.81	13933.04	89.37	37.91	24.92	1270.08	1193.58	16.60	
14042.54	12618.50	14033.04	89.37	39.25	25.21	1270.08	1190.88	16.04	
14142.54	12618.19	14133.04	89.37	40.62	25.49	1270.08	1188.14	15.50	
14242.54	12617.88	14233.04	89.37	42.00	25.93	1270.08	1185.37	14.99	
14342.54	12617.57	14333.04	89.37	43.39	26.30	1270.08	1182.56	14.51	
14442.54	12617.26	14433.04	89.37	44.80	26.68	1270.08	1179.73	14.06	
14542.54	12616.95	14533.04	89.37	46.23	27.11	1270.08	1176.88	13.63	
14642.54	12616.63	14633.04	89.37	47.65	27.59	1270.08	1174.03	13.22	
14742.54	12616.32	14733.04	89.37	49.09	28.01	1270.08	1171.16	12.84	
14842.54	12616.01	14833.04	89.37	50.62	28.36	1270.08	1168.27	12.48	
14942.54	12615.70	14933.04	89.37	52.19	28.85	1270.08	1165.29	12.12	
15042.54	12615.39	15033.04	89.37	53.76	29.18	1270.08	1162.11	11.76	
15142.54	12615.08	15133.04	89.37	55.33	29.72	1270.08	1158.89	11.42	
15242.54	12614.77	15233.04	89.37	56.91	30.23	1270.08	1155.64	11.10	
15342.54	12614.46	15333.04	89.37	58.52	30.70	1270.08	1152.38	10.79	
15442.54	12614.14	15433.04	89.37	60.16	31.14	1270.08	1149.09	10.50	
15542.54	12613.83	15533.04	89.37	61.81	31.66	1270.08	1145.79	10.22	
15642.54	12613.52	15633.04	89.37	63.47	32.22	1270.08	1142.46	9.95	
15742.54	12613.21	15733.04	89.37	65.14	32.77	1270.08	1139.13	9.70	

SD Anti-Collision Report

Secondary Well : Green Wave 20-29 Feb 76H (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
15842.54	12612.90	15833.04	89.37	66.82	33.32	1270.08	1135.77	9.46	
15942.54	12612.59	15933.04	89.37	68.50	33.87	1270.08	1132.41	9.23	
16042.54	12612.28	16033.04	89.37	70.19	34.42	1270.08	1129.03	9.00	
16142.54	12611.97	16133.04	89.37	71.88	34.97	1270.08	1125.64	8.79	
16242.54	12611.65	16233.04	89.37	73.58	35.53	1270.08	1122.23	8.59	
16342.54	12611.34	16333.04	89.37	75.29	36.09	1270.08	1118.82	8.40	
16442.54	12611.03	16433.04	89.37	77.00	36.66	1270.08	1115.39	8.21	
16542.54	12610.72	16533.04	89.37	78.72	37.23	1270.08	1111.96	8.03	
16642.54	12610.41	16633.04	89.37	80.44	37.80	1270.08	1108.52	7.86	
16742.54	12610.10	16733.04	89.37	82.17	38.38	1270.08	1105.06	7.70	
16842.54	12609.79	16833.04	89.37	83.90	38.96	1270.08	1101.60	7.54	
16942.54	12609.48	16933.04	89.37	85.63	39.55	1270.08	1098.14	7.39	
17042.54	12609.16	17033.04	89.37	87.37	40.14	1270.08	1094.66	7.24	
17142.54	12608.85	17133.04	89.37	89.11	40.73	1270.08	1091.18	7.10	
17242.54	12608.54	17233.04	89.37	90.85	41.33	1270.08	1087.69	6.96	
17342.54	12608.23	17333.04	89.37	92.60	41.94	1270.08	1084.19	6.83	
17442.54	12607.92	17433.04	89.37	94.35	42.57	1270.08	1080.69	6.71	
17542.54	12607.61	17533.04	89.37	96.10	43.21	1270.08	1077.19	6.58	
17642.54	12607.30	17633.04	89.37	97.86	43.84	1270.08	1073.68	6.47	
17742.54	12606.99	17733.04	89.37	99.62	44.48	1270.08	1070.16	6.35	
17842.54	12606.67	17833.04	89.37	101.38	45.12	1270.08	1066.64	6.24	
17942.54	12606.36	17933.04	89.37	103.14	45.77	1270.08	1063.11	6.14	
18042.54	12606.05	18033.04	89.37	104.91	46.41	1270.08	1059.58	6.03	
18142.54	12605.74	18133.04	89.37	106.67	47.06	1270.08	1056.05	5.93	
18242.54	12605.43	18233.04	89.37	108.44	47.71	1270.08	1052.51	5.84	
18342.54	12605.12	18333.04	89.37	110.21	48.37	1270.08	1048.97	5.74	
18442.54	12604.81	18433.04	89.37	111.99	49.02	1270.08	1045.43	5.65	
18542.54	12604.50	18533.04	89.37	113.76	49.68	1270.08	1041.88	5.57	
18642.54	12604.18	18633.04	89.37	115.53	50.34	1270.08	1038.33	5.48	
18742.54	12603.87	18733.04	89.37	117.31	51.00	1270.08	1034.77	5.40	
18842.54	12603.56	18833.04	89.37	119.09	51.66	1270.08	1031.21	5.32	
18942.54	12603.25	18933.04	89.37	120.87	52.32	1270.08	1027.65	5.24	
19042.54	12602.94	19033.04	89.37	122.65	52.99	1270.08	1024.09	5.16	
19142.54	12602.63	19133.04	89.37	124.44	53.66	1270.08	1020.52	5.09	
19242.54	12602.32	19233.04	89.37	126.22	54.33	1270.08	1016.96	5.02	
19342.54	12602.00	19333.04	89.37	128.01	55.00	1270.08	1013.39	4.95	
19442.54	12601.69	19433.04	89.37	129.79	55.67	1270.08	1009.81	4.88	
19542.54	12601.38	19533.04	89.37	131.58	56.34	1270.08	1006.24	4.81	
19642.54	12601.07	19633.04	89.37	133.37	57.02	1270.08	1002.66	4.75	
19742.54	12600.76	19733.04	89.37	135.16	57.69	1270.08	999.08	4.69	
19842.54	12600.45	19833.04	89.37	136.95	58.37	1270.08	995.50	4.63	
19942.54	12600.14	19933.04	89.37	138.74	59.05	1270.08	991.92	4.57	
19989.92	12600.00	19977.15	89.37	139.53	59.35	1270.08	990.28	4.54	

Secondary Well : Green Wave 20-29 Feb 77H (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
12142.54	12112.41	12113.41	265.97	27.12	27.11	636.14	582.01	11.75	
12242.54	12190.36	12191.77	86.35	27.26	27.10	637.65	583.27	11.73	
12342.54	12266.44	12270.25	86.30	27.38	26.78	641.32	586.83	11.77	
12442.54	12350.90	12362.33	86.43	27.51	26.28	646.29	591.40	11.77	
12542.54	12431.36	12459.07	86.71	27.69	25.49	650.78	595.53	11.78	
12642.54	12501.70	12557.49	87.10	27.88	24.55	654.59	598.87	11.75	
12742.54	12558.85	12657.74	87.60	28.15	23.71	657.60	601.34	11.69	
12842.54	12599.86	12759.89	88.19	28.51	23.06	659.69	602.62	11.56	
12942.54	12622.15	12863.95	88.85	28.97	22.67	660.76	602.64	11.37	
13042.54	12625.56	12967.25	89.13	29.52	22.78	660.91	601.61	11.15	
13142.54	12625.25	13067.25	89.13	30.17	22.88	660.89	600.34	10.91	
13242.54	12624.94	13167.25	89.13	30.91	23.00	660.88	598.75	10.64	

5D Anti-Collision Report

Secondary Well : Green Wave 20-29 Fed 77H (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
13342.54	12624.63	13267.25	89.13	31.73	23.19	660.86	597.07	10.36	
13442.54	12624.32	13367.25	89.13	32.63	23.40	660.85	595.29	10.08	
13542.54	12624.01	13467.25	89.13	33.61	23.62	660.83	593.19	9.77	
13642.54	12623.70	13567.25	89.13	34.66	23.86	660.82	591.03	9.47	
13742.54	12623.39	13667.25	89.13	35.76	24.12	660.81	588.79	9.18	
13842.54	12623.08	13767.25	89.13	36.93	24.38	660.79	586.47	8.89	
13942.54	12622.77	13867.25	89.13	38.15	24.64	660.78	584.03	8.61	
14042.54	12622.46	13967.25	89.13	39.41	24.90	660.76	581.40	8.33	
14142.54	12622.15	14067.25	89.13	40.72	25.24	660.75	578.71	8.05	
14242.54	12621.84	14167.25	89.13	42.07	25.62	660.73	575.96	7.79	
14342.54	12621.53	14267.25	89.13	43.45	25.98	660.72	573.16	7.55	
14442.54	12621.22	14367.25	89.13	44.86	26.29	660.71	570.31	7.31	
14542.54	12620.91	14467.25	89.13	46.30	26.72	660.69	567.42	7.08	
14642.54	12620.60	14567.25	89.13	47.77	27.12	660.68	564.50	6.87	
14742.54	12620.29	14667.25	89.13	49.26	27.52	660.66	561.56	6.67	
14842.54	12619.98	14767.25	89.13	50.78	27.96	660.65	558.58	6.47	
14942.54	12619.67	14867.25	89.13	52.31	28.40	660.63	555.55	6.29	
15042.54	12619.36	14967.25	89.13	53.86	28.84	660.62	552.43	6.11	
15142.54	12619.04	15067.25	89.13	55.43	29.31	660.61	549.23	5.93	
15242.54	12618.73	15167.25	89.13	57.02	29.80	660.59	546.01	5.77	
15342.54	12618.42	15267.25	89.13	58.62	30.18	660.58	542.77	5.61	
15442.54	12618.11	15367.25	89.13	60.23	30.76	660.56	539.50	5.46	
15542.54	12617.80	15467.25	89.13	61.85	31.29	660.55	536.21	5.31	
15642.54	12617.49	15567.25	89.13	63.49	31.78	660.54	532.90	5.18	
15742.54	12617.18	15667.25	89.13	65.13	32.25	660.52	529.58	5.04	
15842.54	12616.87	15767.25	89.13	66.79	32.74	660.51	526.23	4.92	
15942.54	12616.56	15867.25	89.13	68.45	33.32	660.49	522.87	4.80	
16042.54	12616.25	15967.25	89.13	70.12	33.90	660.48	519.50	4.68	
16142.54	12615.94	16067.25	89.13	71.80	34.47	660.46	516.11	4.58	
16242.54	12615.63	16167.25	89.13	73.49	35.03	660.45	512.71	4.47	
16342.54	12615.32	16267.25	89.13	75.18	35.60	660.44	509.29	4.37	
16442.54	12615.01	16367.25	89.13	76.88	36.17	660.42	505.87	4.27	
16542.54	12614.70	16467.25	89.13	78.58	36.74	660.41	502.43	4.18	
16642.54	12614.39	16567.25	89.13	80.29	37.31	660.39	498.99	4.09	
16742.54	12614.08	16667.25	89.13	82.01	37.89	660.38	495.53	4.01	
16842.54	12613.77	16767.25	89.13	83.73	38.47	660.36	492.07	3.92	
16942.54	12613.46	16867.25	89.13	85.45	39.05	660.35	488.60	3.84	
17042.54	12613.15	16967.25	89.13	87.18	39.63	660.34	485.12	3.77	
17142.54	12612.84	17067.25	89.13	88.91	40.22	660.32	481.63	3.70	
17242.54	12612.52	17167.25	89.13	90.65	40.82	660.31	478.14	3.62	
17342.54	12612.21	17267.25	89.13	92.39	41.42	660.29	474.64	3.56	
17442.54	12611.90	17367.25	89.13	94.13	42.02	660.28	471.13	3.49	
17542.54	12611.59	17467.25	89.13	95.88	42.62	660.26	467.62	3.43	
17642.54	12611.28	17567.25	89.13	97.63	43.23	660.25	464.10	3.37	
17742.54	12610.97	17667.25	89.13	99.38	43.87	660.24	460.57	3.31	
17842.54	12610.66	17767.25	89.13	101.14	44.51	660.22	457.04	3.25	
17942.54	12610.35	17867.25	89.13	102.89	45.15	660.21	453.51	3.19	
18042.54	12610.04	17967.25	89.13	104.65	45.80	660.19	449.97	3.14	
18142.54	12609.73	18067.25	89.13	106.42	46.44	660.18	446.43	3.09	
18242.54	12609.42	18167.25	89.13	108.18	47.09	660.17	442.88	3.04	
18342.54	12609.11	18267.25	89.13	109.95	47.74	660.15	439.33	2.99	
18442.54	12608.80	18367.25	89.13	111.71	48.40	660.14	435.78	2.94	
18542.54	12608.49	18467.25	89.13	113.48	49.05	660.12	432.22	2.90	
18642.54	12608.18	18567.25	89.13	115.26	49.71	660.11	428.66	2.85	
18742.54	12607.87	18667.25	89.13	117.03	50.37	660.09	425.09	2.81	
18842.54	12607.56	18767.25	89.13	118.81	51.03	660.08	421.53	2.77	
18942.54	12607.25	18867.25	89.13	120.58	51.69	660.07	417.96	2.73	
19042.54	12606.94	18967.25	89.13	122.36	52.36	660.05	414.38	2.69	

5D Anti-Collision Report

Secondary Well : Green Wave 20-29 Feb 77H (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
19142.54	12606.63	19067.25	89.13	124.14	53.03	660.04	410.81	2.65	
19242.54	12606.31	19167.25	89.13	125.92	53.69	660.02	407.23	2.61	
19342.54	12606.00	19267.25	89.13	127.70	54.36	660.01	403.64	2.57	
19442.54	12605.69	19367.25	89.13	129.49	55.03	659.99	400.06	2.54	
19542.54	12605.38	19467.25	89.13	131.27	55.71	659.98	396.47	2.50	
19642.54	12605.07	19567.25	89.13	133.06	56.38	659.97	392.89	2.47	
19742.54	12604.76	19667.25	89.13	134.85	57.06	659.95	389.30	2.44	
19842.54	12604.45	19767.25	89.13	136.63	57.73	659.94	385.70	2.41	
19942.54	12604.14	19867.25	89.13	138.42	58.41	659.92	382.11	2.38	
19989.92	12604.00	19912.86	89.13	139.24	58.72	659.92	380.46	2.36	

Secondary Well : Green Wave 20-29 Feb 78H Pilot (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
12142.54	12115.00	12142.54	85.69	28.36	26.52	0.00	-53.58	0.00	SF (Hi)
12242.54	12214.39	12241.92	180.00	28.56	26.73	9.57	-48.09	0.17	SF (Hi)
12342.54	12310.12	12337.66	180.00	28.76	26.93	37.93	-20.06	0.65	SF (Hi)
12442.54	12398.69	12426.22	180.00	28.94	27.12	84.03	25.76	1.44	SF (Med)
12542.54	12476.83	12504.36	180.00	29.10	27.29	146.19	87.57	2.49	
12642.54	12541.67	12569.21	180.00	29.23	27.43	222.11	163.30	3.78	
12742.54	12590.84	12618.38	180.00	29.33	27.54	309.01	250.04	5.24	
12842.54	12622.52	12650.06	180.00	29.39	27.61	403.70	344.56	6.83	
12942.54	12635.55	12663.09	180.00	29.42	27.63	502.69	443.54	8.50	
13042.54	12635.62	12663.16	359.98	29.42	27.63	602.69	543.52	10.19	
13142.54	12635.31	12662.85	359.98	29.42	27.63	702.69	643.54	11.88	
13242.54	12635.00	12662.53	359.98	29.42	27.63	802.69	743.50	13.56	
13342.54	12634.69	12662.22	359.99	29.42	27.63	902.69	843.55	15.26	
13442.54	12634.37	12661.91	359.99	29.42	27.63	1002.69	943.58	16.96	
13542.54	12634.06	12661.60	359.99	29.42	27.63	1102.69	1043.53	18.64	
13642.54	12633.75	12661.29	359.99	29.42	27.63	1202.69	1143.53	20.33	
13742.54	12633.44	12660.98	359.99	29.42	27.63	1302.69	1243.54	22.02	
13842.54	12633.13	12660.67	359.99	29.41	27.63	1402.68	1343.50	23.70	
13942.54	12632.82	12660.36	359.99	29.41	27.63	1502.68	1443.47	25.38	
14042.54	12632.51	12660.04	359.99	29.41	27.63	1602.68	1543.45	27.06	
14142.54	12632.20	12659.73	359.99	29.41	27.63	1702.68	1643.46	28.75	
14242.54	12631.88	12659.42	359.99	29.41	27.63	1802.68	1743.52	30.47	
14342.54	12631.57	12659.11	359.99	29.41	27.62	1902.68	1843.47	32.13	
14442.54	12631.26	12658.80	359.99	29.41	27.62	2002.68	1943.42	33.79	
14542.54	12630.95	12658.49	359.99	29.41	27.62	2102.68	2043.40	35.47	
14642.54	12630.64	12658.18	359.99	29.41	27.62	2202.68	2143.35	37.13	
14742.54	12630.33	12657.87	359.99	29.41	27.62	2302.68	2243.27	38.76	
14842.54	12630.02	12657.56	359.99	29.41	27.62	2402.68	2343.36	40.50	
14942.54	12629.71	12657.24	360.00	29.41	27.62	2502.68	2443.26	42.12	
15042.54	12629.40	12656.93	360.00	29.41	27.62	2602.68	2543.26	43.80	
15142.54	12629.08	12656.62	360.00	29.41	27.62	2702.68	2643.23	45.46	
15242.54	12628.77	12656.31	360.00	29.41	27.62	2802.68	2743.16	47.09	
15342.54	12628.46	12656.00	360.00	29.40	27.62	2902.68	2843.14	48.75	
15442.54	12628.15	12655.69	360.00	29.40	27.62	3002.68	2943.10	50.40	
15542.54	12627.84	12655.38	360.00	29.40	27.62	3102.68	3043.09	52.07	
15642.54	12627.53	12655.07	360.00	29.40	27.62	3202.68	3143.08	53.74	
15742.54	12627.22	12654.75	360.00	29.40	27.62	3302.68	3243.07	55.41	
15842.54	12626.91	12654.44	360.00	29.40	27.61	3402.68	3343.07	57.09	
15942.54	12626.59	12654.13	360.00	29.40	27.61	3502.67	3443.03	58.72	
16042.54	12626.28	12653.82	360.00	29.40	27.61	3602.67	3542.98	60.35	
16142.54	12625.97	12653.51	360.00	29.40	27.61	3702.67	3642.93	61.97	
16242.54	12625.66	12653.20	360.00	29.40	27.61	3802.67	3742.87	63.59	
16342.54	12625.35	12652.89	360.00	29.40	27.61	3902.67	3842.82	65.21	
16442.54	12625.04	12652.58	360.00	29.40	27.61	4002.67	3942.77	66.82	
16542.54	12624.73	12652.27	360.00	29.40	27.61	4102.67	4042.72	68.44	

5D Anti-Collision Report

Secondary Well: Green Wave 20-29 Fed 78H Pilot (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
16642.54	12624.42	12651.95	360.00	29.40	27.61	4202.67	4142.68	70.05	
16742.54	12624.11	12651.64	360.00	29.40	27.61	4302.67	4242.63	71.66	
16842.54	12623.79	12651.33	360.00	29.40	27.61	4402.67	4342.58	73.27	
16942.54	12623.48	12651.02	360.00	29.39	27.61	4502.67	4442.53	74.87	
17042.54	12623.17	12650.71	360.00	29.39	27.61	4602.67	4542.48	76.47	
17142.54	12622.86	12650.40	360.00	29.39	27.61	4702.67	4642.43	78.07	
17242.54	12622.55	12650.09	360.00	29.39	27.61	4802.67	4742.38	79.67	
17342.54	12622.24	12649.78	360.00	29.39	27.60	4902.67	4842.33	81.26	
17442.54	12621.93	12649.46	360.00	29.39	27.60	5002.67	4942.28	82.85	
17542.54	12621.62	12649.15	360.00	29.39	27.60	5102.67	5042.23	84.43	
17642.54	12621.30	12648.84	360.00	29.39	27.60	5202.67	5142.18	86.01	
17742.54	12620.99	12648.53	360.00	29.39	27.60	5302.67	5242.13	87.59	
17842.54	12620.68	12648.22	360.00	29.39	27.60	5402.67	5342.07	89.16	
17942.54	12620.37	12647.91	360.00	29.39	27.60	5502.66	5442.02	90.73	
18042.54	12620.06	12647.60	360.00	29.39	27.60	5602.66	5541.96	92.30	
18142.54	12619.75	12647.29	360.00	29.39	27.60	5702.66	5641.91	93.86	
18242.54	12619.44	12646.98	360.00	29.39	27.60	5802.66	5741.85	95.42	
18342.54	12619.13	12646.66	360.00	29.39	27.60	5902.66	5841.79	96.97	
18442.54	12618.82	12646.35	360.00	29.39	27.60	6002.66	5941.73	98.52	
18542.54	12618.50	12646.04	360.00	29.38	27.60	6102.66	6041.67	100.06	
18642.54	12618.19	12645.73	360.00	29.38	27.60	6202.66	6141.61	101.60	
18742.54	12617.88	12645.42	360.00	29.38	27.60	6302.66	6241.55	103.14	
18842.54	12617.57	12645.11	360.00	29.38	27.59	6402.66	6341.49	104.67	
18942.54	12617.26	12644.80	360.00	29.38	27.59	6502.66	6441.43	106.20	
19042.54	12616.95	12644.49	360.00	29.38	27.59	6602.66	6541.36	107.72	
19142.54	12616.64	12644.17	360.00	29.38	27.59	6702.66	6641.30	109.24	
19242.54	12616.33	12643.86	360.00	29.38	27.59	6802.66	6741.24	110.75	
19342.54	12616.01	12643.55	360.00	29.38	27.59	6902.66	6841.17	112.26	
19442.54	12615.70	12643.24	360.00	29.38	27.59	7002.66	6941.10	113.76	
19542.54	12615.39	12642.93	360.00	29.38	27.59	7102.66	7041.03	115.26	
19642.54	12615.08	12642.62	360.00	29.38	27.59	7202.66	7140.97	116.75	
19742.54	12614.77	12642.31	360.00	29.38	27.59	7302.66	7240.90	118.24	
19842.54	12614.46	12642.00	360.00	29.38	27.59	7402.66	7340.83	119.73	
19942.54	12614.15	12641.69	360.00	29.38	27.59	7502.66	7440.76	121.21	
19989.92	12614.00	12641.54	360.00	29.38	27.59	7550.03	7488.10	121.91	

**Weatherford****Weatherford Drilling Services**

GeoDec4 v2.1.0.0

Report Date: May 12, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Green Wave 20-29 Fed 78H
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: 375211.11 US Survey Foot	Latitude: 32.028707 Degree
East: 803802.88 US Survey Foot	Longitude: -103.486388 Degree
Convergence: 0.45°	
Declination: 7.18°	
Total Correction: 6.73°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 01' 43.35" N
Longitude = 103° 29' 11.00" W

Magnetic Declination = 7.18 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6712
Local Field Strength = 48025 nT	Magnetic Vector X = 23897 nT
Magnetic Dip = 59.90 deg	Magnetic Vector Y = 3009 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41549 nT
Run Date = November 15, 2015	Magnetic Vector H = 24086 nT

Signed: _____ Date: _____

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