



30-025-42427

Bell Lake 19 State 5H APD

- C-102
- Drilling Plan
- Directional Survey

FEB 06 2015

Devon Energy, Bell Lake 19 State 5H

1. Geologic Formations

TVD of target	9,640'	Pilot hole depth	N/A
MD at TD:	14,119'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1,195	Barren	
Top of Salt	1,520	Barren	
Delaware	5,097	Oil	
Cherry Canyon	6,069	Oil	
Brushy Canyon	7,531	Oil	
Bone Spring	9,100	Oil	
Leonard Shale	9,285	Oil	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

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2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,300'	13.375"	54.5	J-55	STC	1.28	3.02	5.06
12.25"	0	3,400'	9.625"	36	J-55	LTC			
12.25"	3,400'	5,200'	9.625"	40	J-55	LTC	1.56	1.74	4.41
8.75"	0	9,095'	7"	29	P-110	BTC			
8.75"	9,095'	14,119'	5.5"	17	P-110	BTC	1.42	2.19	2.07
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

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3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	650	13.5	9.07	1.72	12	Lead: Class C Cement + 4% Bentonite Gel + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1100	12.9	9.81	1.85	17	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
7 x 5- 1/2" Prod	440	10.4	16.9	3.17	16	Lead: Tuned Light ® + 0.125 lb/sk Pol-E-Flake
	1310	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
9-5/8" Intermediate	0'	75%
7" x 5-1/2" Production Casing	4700'	25%

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4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly (FMC Uni-head). This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. - Wellhead will be installed by FMC's representatives. - If the welding is performed by a third party, the FMC's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - FMC representative will install the test plug for the initial BOP test. - FMC will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the FMC Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the FMC Uni-head. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

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	Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns
	See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,300'	FW Gel	8.6-8.8	28-34	N/C
1,300'	5,200'	Saturated Brine	10.0-10.2	28-34	N/C
5,200'	14,119'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

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7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	2549 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe



Bell Lake 19 State 5H
Lea Co, NM

Plan Data for Bell Lake 19 State 5H
Well: Bell Lake 19 State 5H
Type: Main Well
File Number:
Plan Holder: PL
Plan: PLV1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dia: Date:
8000 4826(in) 7.29° 60.00° 2013-06-15



Weatherford

Plan Data for Bell Lake 19 State 5H

Plan Point Information:

Dogleg Severity Unit: */100.00ft Position offsets from Slot centre

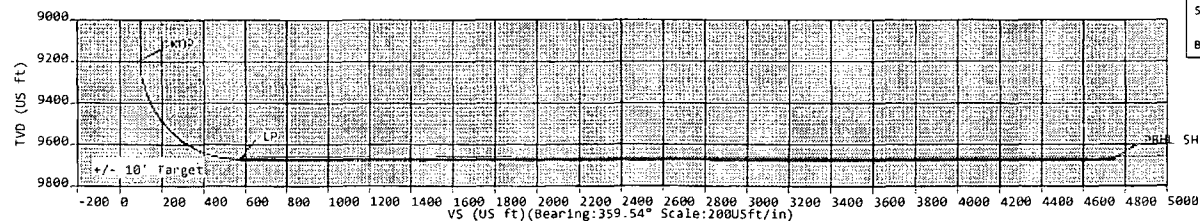
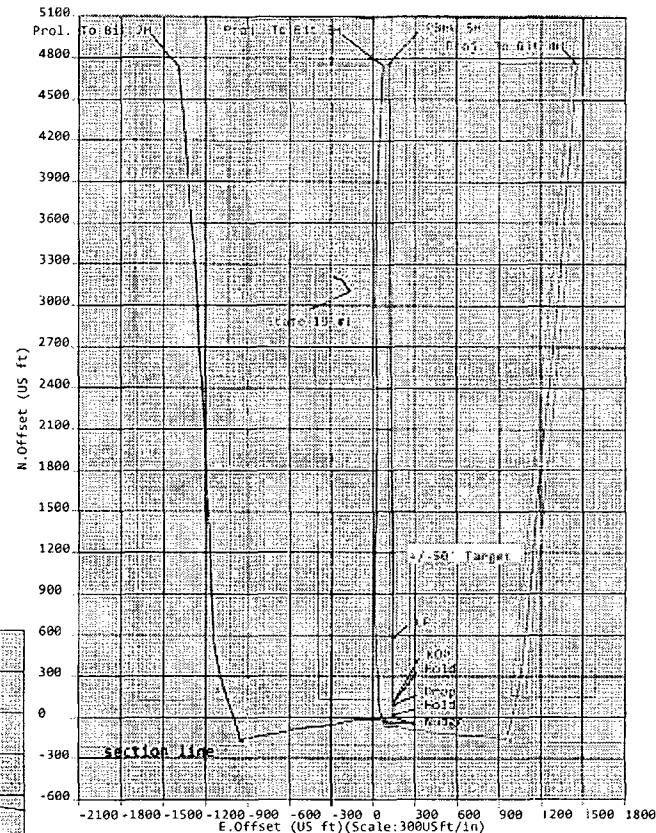
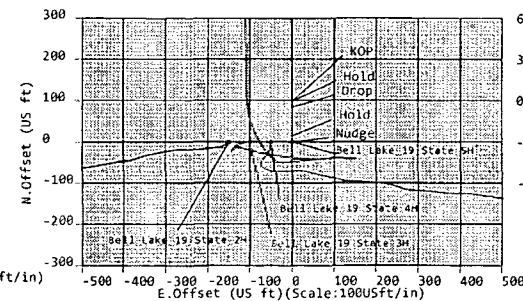
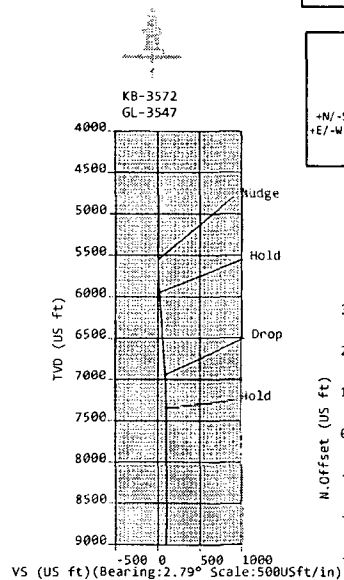
MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
0.00	0.00	0.00	0.00	0.00	0.00	435963.90	765523.80	0.00	0.00
5550.00	0.00	0.00	5550.00	0.00	0.00	435963.90	765523.80	0.00	0.00
5900.00	4.00	359.34	5909.68	13.96	-0.11	435977.86	765523.69	13.93	1.00
6550.00	4.00	359.34	6547.24	83.71	-0.67	436047.61	765523.33	83.58	0.00
7350.00	0.00	0.00	7346.91	97.67	-0.78	436061.57	765523.02	97.51	1.00
9195.63	0.00	0.00	9192.54	97.67	-0.78	436061.57	765523.02	97.51	0.00
9945.63	90.00	359.54	9670.00	575.12	-4.62	436539.02	765519.18	574.71	12.00
14119.74	90.00	359.54	9670.00	4749.10	-38.20	440713.00	765485.60	4741.61	0.00

Plan Data for Bell Lake 19 State 5H

Target Set Information:
Name: Bell Lake 19 State 5H
Position offsets from Slot centre
Name TVD +N/-S +E/-W Northing Easting Shape Comment
(USft) (USft) (USft) (USft)
PBHL 5H 9670.00 4749.10 -38.20 440713.00 765485.60 Cuboid

Plan Data for Bell Lake 19 State 5H

Slot: Bell Lake 19 State 5H
Position:
Offset is from Site centre
+N/-S: 1.11USft Northing: 435963.90USft Latitude: 32°11'47.3"
+E/-W: 149.45USft Easting: 765523.80USft Longitude: -103°36'30.9"
Elevation Above VRD: 3547.00USft



Bell Lake 19 State 2H
Bell Lake 19 State 3H
Bell Lake 19 State 5H
State 19 #1
Bell Lake 19 State 4H

Sign Off: Russell Joyner

SD Plan Report**Devon Energy**

Field Name: *Lea Co, NM Nad 83 NMEZ*
Site Name: *Bell Lake 19 State 2,3,4,5H Pad*
Well Name: *Bell Lake 19 State 5H*
Plan: *P1:V1*

28 January 2015



Bell Lake 19 State 5H

Field Name	Map Units : US ft			Company Name : Devon Energy		
Lea Co, NM Nad 83 NMEZ	Vertical Reference Datum (VRD) : Mean Sea Level					
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)					
	Comment :					
Site Name Bell Lake 19 State 2,3,4,5H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.39			
	Position	Northing : 435962.79 US ft	Latitude : 32° 11' 47.27"			
		Easting : 765374.35 US ft	Longitude : -103° 36' 32.64"			
	Elevation above Mean Sea Level: 3548.00 US ft					
Comment :						
Slot Name Bell Lake 19 State 5H	Position (Offsets relative to Site Centre)					
	+N / -S : 1.11 US ft	Northing : 435963.90 US ft	Latitude : 32° 11' 47.27"			
	+E / -W : 149.45 US ft	Easting : 765523.80 US ft	Longitude : -103° 36' 30.90"			
	Slot TVD Reference : Ground Elevation					
Elevation above Mean Sea Level : 3547.00 US ft						
Comment :						
Well Name Bell Lake 19 State 5H	Type : Main well		UWI :		Plan : P1:V1	
	Rig Height : <i>Kelly Bushing</i> : 25.00 US ft		Comment :			
	Relative to Mean Sea Level: 3572.00 US ft					
	Closure Distance : 4749.25 US ft		Closure Azimuth : 359.539°			
	Vertical Section (Position of Origin Relative to Slot)					
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft		Az : 359.54°	
	Magnetic Parameters					
Model : BGGM	Field Strength : 48164.1nT	Dec : 7.29°	Dip : 60.05°	Date : 15/Jun/2015		

Target Set

Name : Bell Lake 19 State 5H **Number of Targets :** 1

Comment :

Target Name:	Position (Relative to Slot centre)		
PBHL 5H	+N / -S : 4749.10 US ft	Northing : 440713.00 US ft	Latitude : 32° 12' 34.27"
	+E / -W : -38.20 US ft	Easting : 765485.60 US ft	Longitude : -103° 36' 30.97"
Shape:	TVD (Kelly Bushing) : 9670.00 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	

Well path created using minimum curvature

5D Plan Report

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	
5550.00	0.00	0.00	5550.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nudge
5950.00	4.00	359.54	5949.68	13.96	-0.11	13.96	1.00	1.00	0.00	359.54	Hold
6950.00	4.00	359.54	6947.24	83.71	-0.67	83.71	0.00	0.00	0.00	0.00	Drop
7350.00	0.00	0.00	7346.91	97.67	-0.78	97.67	1.00	-1.00	0.00	180.00	Hold
9195.63	0.00	0.00	9192.54	97.67	-0.78	97.67	0.00	0.00	0.00	0.00	KOP
9945.63	90.00	359.54	9670.00	575.12	-4.62	575.14	12.00	12.00	0.00	359.54	LP
14119.74	90.00	359.54	9670.00	4749.10	-38.20	4749.25	0.00	0.00	0.00	0.00	PBHL 5H

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
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	435963.90	765523.80		
5550.00	0.00	0.00	5550.00	0.00	0.00	0.00	0.00	435963.90	765523.80		Nudge
5600.00	0.50	359.54	5600.00	0.22	-0.00	0.22	1.00	435964.12	765523.80		
5700.00	1.50	359.54	5699.98	1.96	-0.02	1.96	1.00	435965.86	765523.78		
5800.00	2.50	359.54	5799.92	5.45	-0.04	5.45	1.00	435969.35	765523.76		
5900.00	3.50	359.54	5899.78	10.69	-0.09	10.69	1.00	435974.59	765523.71		
5950.00	4.00	359.54	5949.68	13.96	-0.11	13.96	1.00	435977.86	765523.69		Hold
6000.00	4.00	359.54	5999.55	17.44	-0.14	17.44	0.00	435981.34	765523.66		
6100.00	4.00	359.54	6099.31	24.42	-0.20	24.42	0.00	435988.32	765523.60		
6200.00	4.00	359.54	6199.07	31.40	-0.25	31.40	0.00	435995.30	765523.55		
6300.00	4.00	359.54	6298.82	38.37	-0.31	38.37	0.00	436002.27	765523.49		
6400.00	4.00	359.54	6398.58	45.35	-0.36	45.35	0.00	436009.25	765523.44		
6500.00	4.00	359.54	6498.34	52.32	-0.42	52.32	0.00	436016.22	765523.38		
6600.00	4.00	359.54	6598.09	59.30	-0.48	59.30	0.00	436023.20	765523.32		
6700.00	4.00	359.54	6697.85	66.27	-0.53	66.27	0.00	436030.17	765523.27		
6800.00	4.00	359.54	6797.60	73.25	-0.59	73.25	0.00	436037.15	765523.21		
6900.00	4.00	359.54	6897.36	80.22	-0.64	80.23	0.00	436044.12	765523.16		
6950.00	4.00	359.54	6947.24	83.71	-0.67	83.71	0.00	436047.61	765523.13		Drop
7000.00	3.50	359.54	6997.13	86.98	-0.70	86.98	1.00	436050.88	765523.10		
7100.00	2.50	359.54	7096.99	92.21	-0.74	92.22	1.00	436056.11	765523.06		
7200.00	1.50	359.54	7196.93	95.70	-0.77	95.71	1.00	436059.60	765523.03		
7300.00	0.50	359.54	7296.91	97.45	-0.78	97.45	1.00	436061.35	765523.02		
7350.00	0.00	0.00	7346.91	97.67	-0.78	97.67	1.00	436061.57	765523.02		Hold
7400.00	0.00	0.00	7396.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
7500.00	0.00	0.00	7496.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
7600.00	0.00	0.00	7596.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
7700.00	0.00	0.00	7696.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
7800.00	0.00	0.00	7796.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
7900.00	0.00	0.00	7896.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8000.00	0.00	0.00	7996.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8100.00	0.00	0.00	8096.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8200.00	0.00	0.00	8196.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8300.00	0.00	0.00	8296.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8400.00	0.00	0.00	8396.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8500.00	0.00	0.00	8496.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8600.00	0.00	0.00	8596.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8700.00	0.00	0.00	8696.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8800.00	0.00	0.00	8796.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
8900.00	0.00	0.00	8896.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
9000.00	0.00	0.00	8996.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
9100.00	0.00	0.00	9096.91	97.67	-0.78	97.67	0.00	436061.57	765523.02		
9195.63	0.00	0.00	9192.54	97.67	-0.78	97.67	0.00	436061.57	765523.02		KOP
9200.00	0.52	359.54	9196.91	97.69	-0.78	97.69	12.00	436061.59	765523.02		
9300.00	12.52	359.54	9296.09	109.03	-0.88	109.03	12.00	436072.93	765522.92		
9400.00	24.52	359.54	9390.73	140.74	-1.13	140.75	12.00	436104.64	765522.67		
9500.00	36.52	359.54	9476.71	191.44	-1.54	191.45	12.00	436155.34	765522.26		
9600.00	48.52	359.54	9550.28	258.90	-2.08	258.91	12.00	436222.80	765521.72		

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)	Eastng (US ft)	Comment
9700.00	60.52	359.54	9608.21	340.19	-2.73	340.20	12.00	436304.09	765521.07	
9800.00	72.52	359.54	9647.97	431.74	-3.47	431.76	12.00	436395.64	765520.33	
9900.00	84.52	359.54	9667.83	529.56	-4.26	529.58	12.00	436493.46	765519.54	
9945.63	90.00	359.54	9670.00	575.12	-4.62	575.14	12.00	436539.02	765519.18	LP
10000.00	90.00	359.54	9670.00	629.49	-5.06	629.51	0.00	436593.39	765518.74	
10100.00	90.00	359.54	9670.00	729.49	-5.87	729.51	0.00	436693.39	765517.93	
10200.00	90.00	359.54	9670.00	829.48	-6.67	829.51	0.00	436793.38	765517.13	
10300.00	90.00	359.54	9670.00	929.48	-7.48	929.51	0.00	436893.38	765516.32	
10400.00	90.00	359.54	9670.00	1029.48	-8.28	1029.51	0.00	436993.38	765515.52	
10500.00	90.00	359.54	9670.00	1129.47	-9.08	1129.51	0.00	437093.37	765514.72	
10600.00	90.00	359.54	9670.00	1229.47	-9.89	1229.51	0.00	437193.37	765513.91	
10700.00	90.00	359.54	9670.00	1329.47	-10.69	1329.51	0.00	437293.37	765513.11	
10800.00	90.00	359.54	9670.00	1429.46	-11.50	1429.51	0.00	437393.36	765512.30	
10900.00	90.00	359.54	9670.00	1529.46	-12.30	1529.51	0.00	437493.36	765511.50	
11000.00	90.00	359.54	9670.00	1629.46	-13.11	1629.51	0.00	437593.36	765510.69	
11100.00	90.00	359.54	9670.00	1729.45	-13.91	1729.51	0.00	437693.35	765509.89	
11200.00	90.00	359.54	9670.00	1829.45	-14.71	1829.51	0.00	437793.35	765509.09	
11300.00	90.00	359.54	9670.00	1929.45	-15.52	1929.51	0.00	437893.35	765508.28	
11400.00	90.00	359.54	9670.00	2029.44	-16.32	2029.51	0.00	437993.34	765507.48	
11500.00	90.00	359.54	9670.00	2129.44	-17.13	2129.51	0.00	438093.34	765506.67	
11600.00	90.00	359.54	9670.00	2229.44	-17.93	2229.51	0.00	438193.34	765505.87	
11700.00	90.00	359.54	9670.00	2329.43	-18.74	2329.51	0.00	438293.33	765505.06	
11800.00	90.00	359.54	9670.00	2429.43	-19.54	2429.51	0.00	438393.33	765504.26	
11900.00	90.00	359.54	9670.00	2529.43	-20.35	2529.51	0.00	438493.33	765503.45	
12000.00	90.00	359.54	9670.00	2629.42	-21.15	2629.51	0.00	438593.32	765502.65	
12100.00	90.00	359.54	9670.00	2729.42	-21.95	2729.51	0.00	438693.32	765501.85	
12200.00	90.00	359.54	9670.00	2829.42	-22.76	2829.51	0.00	438793.32	765501.04	
12300.00	90.00	359.54	9670.00	2929.41	-23.56	2929.51	0.00	438893.31	765500.24	
12400.00	90.00	359.54	9670.00	3029.41	-24.37	3029.51	0.00	438993.31	765499.43	
12500.00	90.00	359.54	9670.00	3129.41	-25.17	3129.51	0.00	439093.31	765498.63	
12600.00	90.00	359.54	9670.00	3229.41	-25.98	3229.51	0.00	439193.31	765497.82	
12700.00	90.00	359.54	9670.00	3329.40	-26.78	3329.51	0.00	439293.30	765497.02	
12800.00	90.00	359.54	9670.00	3429.40	-27.58	3429.51	0.00	439393.30	765496.22	
12900.00	90.00	359.54	9670.00	3529.40	-28.39	3529.51	0.00	439493.30	765495.41	
13000.00	90.00	359.54	9670.00	3629.39	-29.19	3629.51	0.00	439593.29	765494.61	
13100.00	90.00	359.54	9670.00	3729.39	-30.00	3729.51	0.00	439693.29	765493.80	
13200.00	90.00	359.54	9670.00	3829.39	-30.80	3829.51	0.00	439793.29	765493.00	
13300.00	90.00	359.54	9670.00	3929.38	-31.61	3929.51	0.00	439893.28	765492.19	
13400.00	90.00	359.54	9670.00	4029.38	-32.41	4029.51	0.00	439993.28	765491.39	
13500.00	90.00	359.54	9670.00	4129.38	-33.21	4129.51	0.00	440093.28	765490.59	
13600.00	90.00	359.54	9670.00	4229.37	-34.02	4229.51	0.00	440193.27	765489.78	
13700.00	90.00	359.54	9670.00	4329.37	-34.82	4329.51	0.00	440293.27	765488.98	
13800.00	90.00	359.54	9670.00	4429.37	-35.63	4429.51	0.00	440393.27	765488.17	
13900.00	90.00	359.54	9670.00	4529.36	-36.43	4529.51	0.00	440493.26	765487.37	
14000.00	90.00	359.54	9670.00	4629.36	-37.24	4629.51	0.00	440593.26	765486.56	
14100.00	90.00	359.54	9670.00	4729.36	-38.04	4729.51	0.00	440693.26	765485.76	
14119.74	90.00	359.54	9670.00	4749.10	-38.20	4749.25	0.00	440713.00	765485.60	PBHL 5H

5D Anti-Collision Report

Devon Energy

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

Site Name: *Bell Lake 19 State 2,3,4,5H Pad*

Well Name: *Bell Lake 19 State 5H*

28 January 2015




Weatherford®

Bell Lake 19 State 5H

Field Name	Map Units : US ft			Company Name : Devon Energy		
Lea Co, NM Nad 83 NMEZ	Vertical Reference Datum (VRD) : Mean Sea Level					
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)					
	Comment :					
Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.39			
Bell Lake 19 State 2, 3, 4, 5H Pad	Position	Northing : 435962.79 US ft	Latitude : 32° 11' 47.27"			
		Easting : 765374.35 US ft	Longitude : -103° 36' 32.64"			
	Elevation above Mean Sea Level: 3548.00 US ft					
Comment :						
Slot Name	Position (Offsets relative to Site Centre)					
Bell Lake 19 State 5H	+N / -S : 1.11 US ft	Northing : 435963.90 US ft	Latitude : 32° 11' 47.27"			
	+E / -W : 149.45 US ft	Easting : 765523.80 US ft	Longitude : -103° 36' 30.90"			
	Slot TVD Reference : Ground Elevation					
Elevation above Mean Sea Level : 3547.00 US ft						
Comment :						
Well Name	Type : Main well	UWI :	Plan : Working Plan			
Bell Lake 19 State 5H	Rig Height <i>Kelly Bushing</i> : 25.00 US ft	Comment :				
	Relative to Mean Sea Level: 3572.00 US ft					
	Closure Distance : 4749.25 US ft	Closure Azimuth : 359.539°				
Vertical Section (Position of Origin Relative to Slot)						
+N / -S : 0.00 US ft +E / -W : 0.00 US ft Az : 359.54°						
Magnetic Parameters						
Model : BGGM		Field Strength : 48164.1nT	Dec : 7.29°	Dip : 60.05°	Date : 15/Jun/2015	

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Bell Lake 19 State 5H (p)	0.00	14119.74	100.00	2

Secondary Well Names

Bell Lake 19 State 2H (s)
 Bell Lake 19 State 3H (s)
 Bell Lake 19 State 4H (s)
 State 19 #1 (s)

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

AC Filter Info: The following filter(s) have been applied: Separation Factor.

SD 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)

SF	Secondary Well Name	Pri MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	ES (US ft)	SF	Risk
	Bell Lake 19 State 3H (s)	5987.70	5994.65	5987.28	66.35	40.03	2.52	
	State 19 #1 (s)	12494.92	9643.22	9670.00	285.85	203.94	3.49	
	Bell Lake 19 State 4H (s)	2520.70	2527.36	2520.70	71.59	60.99	6.75	
	Bell Lake 19 State 2H (s)	14119.74	15751.99	9670.00	2071.14	1936.31	15.36	

Primary Well : Bell Lake 19 State 5H (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
2100.00	2100.00	210.14	4.61	4.61	Bell Lake 19 State 4H (s)	83.40	74.35	9.22
2200.00	2200.00	201.13	4.83	4.83	Bell Lake 19 State 4H (s)	77.61	68.20	8.25
2300.00	2300.00	191.18	5.06	5.06	Bell Lake 19 State 4H (s)	73.07	63.29	7.47
2400.00	2400.00	180.46	5.28	5.28	Bell Lake 19 State 4H (s)	70.87	60.71	6.98
2500.00	2500.00	169.77	5.51	5.51	Bell Lake 19 State 4H (s)	71.22	60.68	6.76
2600.00	2600.00	160.55	5.73	5.73	Bell Lake 19 State 4H (s)	74.66	63.77	6.86
2700.00	2700.00	153.51	5.96	5.96	Bell Lake 19 State 4H (s)	81.27	70.03	7.23
2800.00	2800.00	147.78	6.18	6.18	Bell Lake 19 State 4H (s)	89.39	77.78	7.70
2900.00	2900.00	143.03	6.41	6.41	Bell Lake 19 State 4H (s)	98.23	86.25	8.20
3000.00	3000.00	139.06	6.63	6.63	Bell Lake 19 State 4H (s)	107.32	94.96	8.68
3100.00	3100.00	135.78	6.86	6.86	Bell Lake 19 State 4H (s)	116.71	103.98	9.17
3200.00	3200.00	133.11	7.08	7.08	Bell Lake 19 State 4H (s)	126.31	113.17	9.62
3300.00	3300.00	261.30	7.31	7.31	Bell Lake 19 State 3H (s)	145.74	131.09	9.95
3400.00	3400.00	261.29	7.53	7.53	Bell Lake 19 State 3H (s)	145.14	130.06	9.62
3500.00	3500.00	261.37	7.76	7.76	Bell Lake 19 State 3H (s)	144.38	128.86	9.31
3600.00	3600.00	261.64	7.98	7.98	Bell Lake 19 State 3H (s)	143.81	127.86	9.02
3700.00	3700.00	261.97	8.20	8.20	Bell Lake 19 State 3H (s)	143.19	126.82	8.75
3800.00	3800.00	262.25	8.43	8.43	Bell Lake 19 State 3H (s)	142.45	125.65	8.48
3900.00	3900.00	262.58	8.65	8.65	Bell Lake 19 State 3H (s)	141.96	124.73	8.24
4000.00	4000.00	262.64	8.88	8.88	Bell Lake 19 State 3H (s)	141.00	123.34	7.98
4100.00	4100.00	262.74	9.10	9.10	Bell Lake 19 State 3H (s)	140.01	121.92	7.74
4200.00	4200.00	263.21	9.33	9.33	Bell Lake 19 State 3H (s)	139.48	120.96	7.53
4300.00	4300.00	263.79	9.55	9.55	Bell Lake 19 State 3H (s)	138.34	119.39	7.30
4400.00	4400.00	264.22	9.78	9.78	Bell Lake 19 State 3H (s)	136.56	117.17	7.04
4500.00	4500.00	264.42	10.00	10.00	Bell Lake 19 State 3H (s)	134.36	114.55	6.78
4600.00	4600.00	264.43	10.23	10.23	Bell Lake 19 State 3H (s)	131.31	111.07	6.49
4700.00	4700.00	264.16	10.45	10.45	Bell Lake 19 State 3H (s)	127.81	107.13	6.18
4800.00	4800.00	263.57	10.68	10.68	Bell Lake 19 State 3H (s)	123.38	102.24	5.84

5D Anti-Collision Report

Primary Well: Bell Lake 19 State 3H (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
4900.00	4900.00	262.71	10.90	10.90	Bell Lake 19 State 3H (s)	119.12	97.56	5.53
5000.00	5000.00	261.80	11.13	11.13	Bell Lake 19 State 3H (s)	114.57	92.57	5.21
5100.00	5100.00	260.79	11.35	11.35	Bell Lake 19 State 3H (s)	110.44	87.99	4.92
5200.00	5200.00	259.56	11.58	11.58	Bell Lake 19 State 3H (s)	106.22	83.35	4.64
5300.00	5300.00	258.10	11.80	11.80	Bell Lake 19 State 3H (s)	100.79	77.50	4.33
5400.00	5400.00	256.21	12.03	12.03	Bell Lake 19 State 3H (s)	94.00	70.29	3.96
5500.00	5500.00	253.88	12.25	12.25	Bell Lake 19 State 3H (s)	86.77	62.63	3.59
5600.00	5600.00	251.55	12.48	12.48	Bell Lake 19 State 3H (s)	79.78	55.17	3.24
5700.00	5699.98	247.22	12.70	12.70	Bell Lake 19 State 3H (s)	73.68	48.64	2.94
5800.00	5799.92	241.00	12.92	12.91	Bell Lake 19 State 3H (s)	69.09	43.62	2.71
5900.00	5899.78	232.91	13.15	13.13	Bell Lake 19 State 3H (s)	66.51	40.58	2.57
6000.00	5999.55	223.58	13.37	13.34	Bell Lake 19 State 3H (s)	66.46	40.11	2.52
6100.00	6099.31	214.32	13.59	13.57	Bell Lake 19 State 3H (s)	68.32	41.50	2.55
6200.00	6199.07	205.84	13.82	13.79	Bell Lake 19 State 3H (s)	71.78	44.53	2.63
6300.00	6298.82	198.31	14.04	14.02	Bell Lake 19 State 3H (s)	76.55	48.84	2.76
6400.00	6398.58	191.68	14.27	14.24	Bell Lake 19 State 3H (s)	82.40	54.21	2.92
6500.00	6498.34	186.06	14.50	14.47	Bell Lake 19 State 3H (s)	89.29	60.69	3.12
6600.00	6598.09	181.28	14.73	14.69	Bell Lake 19 State 3H (s)	96.84	67.76	3.33
6700.00	6697.85	177.22	14.96	14.92	Bell Lake 19 State 3H (s)	104.89	75.38	3.55
6800.00	6797.60	173.83	15.19	15.14	Bell Lake 19 State 3H (s)	113.27	83.38	3.79
6900.00	6897.36	170.95	15.42	15.37	Bell Lake 19 State 3H (s)	121.84	91.46	4.01
7000.00	6997.13	168.37	15.64	15.59	Bell Lake 19 State 3H (s)	130.27	99.48	4.23
7100.00	7096.99	165.97	15.81	15.77	Bell Lake 19 State 3H (s)	137.45	106.24	4.40
7200.00	7196.93	163.62	15.99	15.94	Bell Lake 19 State 3H (s)	143.11	111.56	4.54
7300.00	7296.91	161.27	16.16	16.12	Bell Lake 19 State 3H (s)	147.13	115.22	4.61
7400.00	7396.91	158.45	16.35	16.30	Bell Lake 19 State 3H (s)	149.74	117.40	4.63
7500.00	7496.91	156.23	16.57	16.52	Bell Lake 19 State 3H (s)	152.06	119.25	4.64
7600.00	7596.91	154.15	16.79	16.75	Bell Lake 19 State 3H (s)	154.57	121.34	4.65
7700.00	7696.91	152.14	17.02	16.97	Bell Lake 19 State 3H (s)	157.35	123.73	4.68
7800.00	7796.91	150.21	17.24	17.20	Bell Lake 19 State 3H (s)	160.08	125.99	4.70
7900.00	7896.91	148.36	17.46	17.42	Bell Lake 19 State 3H (s)	162.80	128.27	4.71
8000.00	7996.91	146.55	17.69	17.65	Bell Lake 19 State 3H (s)	165.61	130.66	4.74
8100.00	8096.91	144.78	17.91	17.87	Bell Lake 19 State 3H (s)	168.48	133.09	4.76
8200.00	8196.91	143.10	18.13	18.09	Bell Lake 19 State 3H (s)	171.57	135.75	4.79
8300.00	8296.91	141.51	18.36	18.32	Bell Lake 19 State 3H (s)	174.80	138.57	4.82
8400.00	8396.91	140.00	18.58	18.54	Bell Lake 19 State 3H (s)	178.50	141.81	4.86

5D Anti-Collision Report

Primary Well: Bell Lake 19 State 5H (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
8500.00	8496.91	138.49	18.81	18.77	Bell Lake 19 State 3H (s)	182.71	145.56	4.92	
8600.00	8596.91	137.23	19.03	18.99	Bell Lake 19 State 3H (s)	186.59	149.00	4.96	
8700.00	8696.91	136.11	19.25	19.22	Bell Lake 19 State 3H (s)	190.32	152.30	5.01	
8800.00	8796.91	135.11	19.48	19.44	Bell Lake 19 State 3H (s)	193.90	155.47	5.05	
8900.00	8896.91	134.22	19.70	19.67	Bell Lake 19 State 3H (s)	197.30	158.45	5.08	
9000.00	8996.91	133.46	19.92	19.89	Bell Lake 19 State 3H (s)	200.39	161.12	5.10	
9100.00	9096.91	132.79	20.15	20.12	Bell Lake 19 State 3H (s)	203.05	163.33	5.11	
9200.00	9196.91	132.79	20.37	20.34	Bell Lake 19 State 3H (s)	205.06	164.90	5.11	
9300.00	9296.09	134.19	20.60	20.29	Bell Lake 19 State 3H (s)	213.80	173.16	5.26	
9400.00	9390.73	137.91	20.86	19.73	Bell Lake 19 State 3H (s)	237.34	196.20	5.77	
9500.00	9476.71	142.20	21.16	18.74	Bell Lake 19 State 3H (s)	277.58	235.98	6.67	
9600.00	9550.28	145.32	21.52	17.49	Bell Lake 19 State 3H (s)	334.90	293.05	8.00	
9700.00	9608.21	145.68	21.97	16.17	Bell Lake 19 State 3H (s)	407.80	365.51	9.64	
12100.00	9670.00	269.89	53.67	23.27	State 19 #1 (s)	478.14	419.81	8.20	
12200.00	9670.00	269.86	55.35	23.87	State 19 #1 (s)	402.40	338.40	6.29	
12300.00	9670.00	269.83	57.04	24.48	State 19 #1 (s)	339.46	268.36	4.77	
12400.00	9670.00	269.80	58.74	25.08	State 19 #1 (s)	297.56	219.28	3.80	
12500.00	9670.00	269.77	60.45	25.69	State 19 #1 (s)	286.10	204.15	3.49	
12600.00	9670.00	269.74	62.16	26.31	State 19 #1 (s)	308.48	228.86	3.87	
12700.00	9670.00	269.71	63.88	26.94	State 19 #1 (s)	358.43	284.54	4.85	
12800.00	9670.00	269.68	65.61	27.57	State 19 #1 (s)	426.35	358.05	6.24	
12900.00	9670.00	269.65	67.34	28.20	State 19 #1 (s)	505.06	441.56	7.95	
13000.00	9670.00	269.61	69.08	28.84	State 19 #1 (s)	590.25	530.32	9.85	

Secondary Well: Bell Lake 19 State 3H (s) (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
3300.00	3300.90	3302.50	261.30	6.83	6.79	145.74	131.09	9.95	
3400.00	3401.02	3402.62	261.29	7.04	7.00	145.14	130.06	9.62	
3500.00	3501.00	3502.60	261.37	7.25	7.21	144.38	128.86	9.31	
3600.00	3600.65	3602.25	261.64	7.45	7.41	143.81	127.86	9.02	
3700.00	3701.23	3702.84	261.97	7.66	7.62	143.19	126.82	8.75	
3800.00	3800.64	3802.26	262.25	7.86	7.83	142.45	125.65	8.48	
3900.00	3901.01	3902.63	262.58	8.07	8.04	141.96	124.73	8.24	
4000.00	4001.69	4003.32	262.64	8.28	8.25	141.00	123.34	7.98	
4100.00	4101.07	4102.70	262.74	8.49	8.46	140.01	121.92	7.74	
4200.00	4200.65	4202.29	263.21	8.69	8.67	139.48	120.96	7.53	
4300.00	4302.27	4303.93	263.79	8.90	8.88	138.34	119.39	7.30	
4400.00	4402.66	4404.34	264.22	9.11	9.09	136.56	117.17	7.04	
4500.00	4503.45	4505.15	264.42	9.32	9.30	134.36	114.55	6.78	
4600.00	4604.39	4606.15	264.43	9.53	9.51	131.31	111.07	6.49	
4700.00	4705.01	4706.83	264.16	9.74	9.72	127.81	107.13	6.18	
4800.00	4805.49	4807.41	263.57	9.95	9.93	123.38	102.24	5.84	
4900.00	4905.26	4907.29	262.71	10.16	10.14	119.12	97.56	5.53	

5D Anti-Collision Report

Secondary Well : Bell Lake 19 State 3H (s) (TVD Relative to Kelly Bushing (Primary)) ; All Azimuth Relative to GRID NORTH									Risk
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	
5000.00	5004.99	5007.14	261.80	10.37	10.35	114.57	92.57	5.21	
5100.00	5104.49	5106.75	260.79	10.57	10.56	110.44	87.99	4.92	
5200.00	5205.01	5207.38	259.56	10.78	10.77	106.22	83.35	4.64	
5300.00	5306.24	5308.80	258.10	11.00	10.97	100.79	77.50	4.33	
5400.00	5406.70	5409.55	256.21	11.22	11.18	94.00	70.29	3.96	
5500.00	5506.23	5509.40	253.88	11.43	11.39	86.77	62.63	3.59	
5600.00	5605.51	5609.00	251.55	11.64	11.60	79.78	55.17	3.24	
5700.00	5704.76	5708.56	247.22	11.85	11.80	73.68	48.64	2.94	
5800.00	5803.89	5807.98	241.00	12.06	12.01	69.09	43.62	2.71	
5900.00	5903.15	5907.52	232.91	12.27	12.21	66.51	40.58	2.57	
6000.00	6002.25	6006.89	223.58	12.49	12.42	66.46	40.11	2.52	
6100.00	6101.40	6106.32	214.32	12.71	12.63	68.32	41.50	2.55	
6200.00	6200.59	6205.78	205.84	12.92	12.84	71.78	44.53	2.63	
6300.00	6299.82	6305.28	198.31	13.14	13.05	76.55	48.84	2.76	
6400.00	6398.92	6404.67	191.68	13.36	13.26	82.40	54.21	2.92	
6500.00	6498.05	6504.06	186.06	13.58	13.47	89.29	60.69	3.12	
6600.00	6597.26	6603.55	181.28	13.81	13.68	96.84	67.76	3.33	
6700.00	6696.51	6703.06	177.22	14.03	13.89	104.89	75.38	3.55	
6800.00	6795.82	6802.63	173.83	14.25	14.10	113.27	83.38	3.79	
6900.00	6895.29	6902.34	170.95	14.47	14.31	121.84	91.46	4.01	
7000.00	6994.64	7001.95	168.37	14.70	14.53	130.27	99.48	4.23	
7100.00	7093.89	7101.45	165.97	14.92	14.74	137.45	106.24	4.40	
7200.00	7193.69	7201.49	163.62	15.15	14.95	143.11	111.56	4.54	
7300.00	7293.29	7301.34	161.27	15.37	15.16	147.13	115.22	4.61	
7400.00	7393.42	7401.69	158.45	15.59	15.38	149.74	117.40	4.63	
7500.00	7493.38	7501.85	156.23	15.82	15.59	152.06	119.25	4.64	
7600.00	7592.77	7601.42	154.15	16.04	15.80	154.57	121.34	4.65	
7700.00	7692.47	7701.32	152.14	16.26	16.01	157.35	123.73	4.68	
7800.00	7792.63	7801.65	150.21	16.49	16.22	160.08	125.99	4.70	
7900.00	7892.41	7901.61	148.36	16.71	16.44	162.80	128.27	4.71	
8000.00	7992.22	8001.59	146.55	16.94	16.65	165.61	130.66	4.74	
8100.00	8091.91	8101.45	144.78	17.16	16.86	168.48	133.09	4.76	
8200.00	8191.50	8201.22	143.10	17.39	17.07	171.57	135.75	4.79	
8300.00	8290.93	8300.81	141.51	17.61	17.28	174.80	138.57	4.82	
8400.00	8389.71	8399.77	140.00	17.83	17.49	178.50	141.81	4.86	
8500.00	8489.48	8499.74	138.49	18.06	17.70	182.71	145.56	4.92	
8600.00	8589.84	8600.26	137.23	18.28	17.92	186.59	149.00	4.96	
8700.00	8689.95	8700.51	136.11	18.51	18.13	190.32	152.30	5.01	
8800.00	8790.12	8800.79	135.11	18.73	18.34	193.90	155.47	5.05	
8900.00	8890.47	8901.25	134.22	18.95	18.56	197.30	158.45	5.08	
9000.00	8991.06	9001.92	133.46	19.17	18.77	200.39	161.12	5.10	
9100.00	9092.10	9103.03	132.79	19.39	18.99	203.05	163.33	5.11	
9200.00	9193.66	9204.62	132.79	19.61	19.20	205.06	164.90	5.11	
9300.00	9295.45	9306.41	134.19	19.83	19.41	213.80	173.16	5.26	
9400.00	9391.52	9402.50	137.91	20.02	19.61	237.34	196.20	5.77	
9500.00	9481.49	9492.50	142.20	20.20	19.77	277.58	235.98	6.67	
9600.00	9560.82	9571.96	145.32	20.35	19.89	334.90	293.05	8.00	
9700.00	9624.95	9636.31	145.68	20.46	19.97	407.80	365.51	9.64	

Secondary Well : Bell Lake 19 State 4H (s) (TVD Relative to Kelly Bushing (Primary)) ; All Azimuth Relative to GRID NORTH									Risk
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	
2100.00	2104.62	2108.89	210.14	3.77	3.73	83.40	74.35	9.22	
2200.00	2204.19	2209.43	201.13	3.91	3.84	77.61	68.20	8.25	
2300.00	2302.52	2308.72	191.18	4.06	3.95	73.07	63.29	7.47	
2400.00	2400.65	2407.79	180.46	4.22	4.07	70.87	60.71	6.98	
2500.00	2498.89	2506.92	169.77	4.39	4.20	71.22	60.68	6.76	
2600.00	2595.94	2604.74	160.55	4.57	4.33	74.66	63.77	6.86	
2700.00	2693.86	2703.33	153.51	4.78	4.47	81.27	70.03	7.23	

5D Anti-Collision Report

Secondary Well: Bell Lake 19 State 4H (s) (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
2800.00	2792.30	2802.46	147.78	4.99	4.62	89.39	77.78	7.70	
2900.00	2891.14	2901.99	143.03	5.21	4.77	98.23	86.25	8.20	
3000.00	2990.15	3001.67	139.06	5.43	4.93	107.32	94.96	8.68	
3100.00	3088.84	3101.00	135.78	5.66	5.10	116.71	103.98	9.17	
3200.00	3187.86	3200.64	133.11	5.89	5.28	126.31	113.17	9.62	

Secondary Well: State 19 #1 (s) (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
12100.00	9670.57	9642.65	269.89	21.04	20.97	478.14	419.81	8.20	
12200.00	9670.71	9642.79	269.86	21.04	20.97	402.40	338.40	6.29	
12300.00	9670.85	9642.93	269.83	21.04	20.97	339.46	268.36	4.77	
12400.00	9670.99	9643.08	269.80	21.04	20.97	297.56	219.28	3.80	
12500.00	9671.14	9643.23	269.77	21.04	20.97	286.10	204.15	3.49	
12600.00	9671.29	9643.38	269.74	21.04	20.97	308.48	228.86	3.87	
12700.00	9671.45	9643.53	269.71	21.04	20.97	358.43	284.54	4.85	
12800.00	9671.60	9643.69	269.68	21.04	20.97	426.35	358.05	6.24	
12900.00	9671.77	9643.85	269.65	21.04	20.98	505.06	441.56	7.95	
13000.00	9671.93	9644.02	269.61	21.04	20.98	590.25	530.32	9.85	

**Weatherford**

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: January 28, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Bell Lake 19 State 5H
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: 435963.90 US Survey Foot	Latitude: 32.196465 Degree
East: 765523.80 US Survey Foot	Longitude: -103.608583 Degree
Convergence: 0.39°	
Declination: 7.29°	
Total Correction: 6.90°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 11' 47.27" N
Longitude = 103° 36' 30.90" W

Magnetic Declination = 7.29 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6554
Local Field Strength = 48164 nT	Magnetic Vector X = 23854 nT
Magnetic Dip = 60.05 deg	Magnetic Vector Y = 3052 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41731 nT
Run Date = June 15, 2015	Magnetic Vector H = 24048 nT

Signed: _____ Date: _____

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