



# **Laramie Energy, LLC**

**Mesa County, CO**

**Nichols 24-07 Pad**

**Nichols 0994-24-16E**

**ST01**

**Plan: ST01 contingency plan**

## **QES Well Planning Report**

**08 April, 2018**





# Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Nichols 0994-24-16E
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	well @ 7236.0usft (H&P #290)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	well @ 7236.0usft (H&P #290)
<b>Site:</b>	Nichols 24-07 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Nichols 0994-24-16E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST01		
<b>Design:</b>	ST01 contingency plan		

Project	Mesa County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Nichols 24-07 Pad			
Site Position:		Northing:	1,529,213.07 usft	Latitude:	39.263181
From:	Lat/Long	Easting:	2,340,128.94 usft	Longitude:	-107.830853
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.47 °

Well	Nichols 0994-24-16E					
Well Position	+N/-S	37.3 usft	Northing:	1,529,250.25 usft	Latitude:	39.263283
	+E/-W	3.9 usft	Easting:	2,340,133.80 usft	Longitude:	-107.830839
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	7,212.0 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	4/8/2018	0.00	0.00	0.00000000

Design	ST01 contingency plan			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	1,776.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	136.34

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
1,776.0	25.00	134.20	1,704.6	-308.2	301.3	0.00	0.00	0.00	0.00	
2,076.0	18.44	161.89	1,983.8	-397.8	361.7	4.00	-2.19	9.23	135.00	
2,487.2	25.66	134.68	2,365.7	-522.7	445.6	3.00	1.76	-6.62	-67.94	
5,131.2	25.66	134.68	4,748.9	-1,328.0	1,259.7	0.00	0.00	0.00	0.00	
5,986.7	0.00	0.00	5,576.0	-1,460.5	1,393.7	3.00	-3.00	0.00	180.00	
7,836.7	0.00	0.00	7,426.0	-1,460.5	1,393.7	0.00	0.00	0.00	0.00	PBHL - Nichols 0994-



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<b>Wellbore:</b>	ST01		
<b>Design:</b>	ST01 contingency plan		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,776.0	25.00	134.20	1,704.6	-308.2	301.3	431.0	0.00	0.00	0.00	
2,076.0	18.44	161.89	1,983.8	-397.8	361.7	537.5	4.00	-2.19	9.23	
2,487.2	25.66	134.68	2,365.7	-522.7	445.6	685.8	3.00	1.76	-6.62	
5,131.2	25.66	134.68	4,748.9	-1,328.0	1,259.7	1,830.4	0.00	0.00	0.00	
5,986.7	0.00	0.00	5,576.0	-1,460.5	1,393.7	2,018.7	3.00	-3.00	0.00	
7,836.7	0.00	0.00	7,426.0	-1,460.5	1,393.7	2,018.7	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
TOF @ 2325' MD	0.00	0.00	2,203.0	-472.3	462.5	1,528,766.24	2,340,584.04	39.261986		-107.829206
- plan misses target center by 62.1usft at 2323.6usft MD (2216.2 TVD, -472.9 N, 401.9 E)										
- Point										
PBHL - Nichols 0994-24	0.00	0.00	7,426.0	-1,460.5	1,393.7	1,527,754.52	2,341,489.54	39.259273		-107.825917
- plan hits target center										
- Circle (radius 50.0)										