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DISTRICT II-ARTESIA O.C.D.

Lime Rock Resources

Eddy Co, NM - NAD 83

Stirling 6M

Stirling 6M #5

30-015-45353

Original Hole

Plan: Plan 3

Standard Planning Report

12 October, 2018



Planning Report

Database: Accel EDM
Company: Lime Rock Resources
Project: Eddy Co, NM - NAD 83
Site: Stirling 6M
Well: Stirling 6M #5
Wellbore: Original Hole
Design: Plan 3

Local Co-ordinate Reference: Well Stirling 6M #5
TVD Reference: 12 8' KB @ 3373.60usft (United 33)
MD Reference: 12 8' KB @ 3373 60usft (United 33)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy Co, NM - NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Stirling 6M			
Site Position:		Northing:	644,103.69 usft	Latitude:	32.770675
From:	Map	Easting:	544,268.95 usft	Longitude:	-104.323796
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.01 °

Well	Stirling 6M #5					
Well Position	+N/-S	0.00 usft	Northing:	644,103.69 usft	Latitude:	32.770675
	+E/-W	0.00 usft	Easting:	544,268.95 usft	Longitude:	-104.323796
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,360.80 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/12/2018	7.20	60.42	48,045.14053025

Design	Plan 3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	13.00

Plan Survey Tool Program	Date	10/12/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1 0.00	4,528.52	Plan 3 (Original Hole)	MWD+IGRF	
			OWSG MWD + IGRF or WMM	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
480.00	0.00	0.00	480.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,076.76	25.36	13.00	1,057.46	126.61	29.22	4.25	4.25	0.00	13.00	
2,009.76	25.36	13.00	1,900.54	516.01	119.11	0.00	0.00	0.00	0.00	
2,606.52	0.00	0.00	2,478.00	642.62	148.33	4.25	-4.25	0.00	180.00	Aiming Point (Stirling)
4,528.52	0.00	0.00	4,400.00	642.62	148.33	0.00	0.00	0.00	0.00	PBHL (Stirling 6M #5)



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Survey Calculation Method: Minimum Curvature

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
467.00	0.00	0.00	467.00	0.00	0.00	0.00	0.00	0.00	0.00
Queen									
480.00	0.00	0.00	480.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 4.25									
500.00	0.85	13.00	500.00	0.14	0.03	0.15	4.25	4.25	0.00
600.00	5.10	13.00	599.84	5.20	1.20	5.34	4.25	4.25	0.00
700.00	9.35	13.00	699.02	17.45	4.03	17.91	4.25	4.25	0.00
800.00	13.60	13.00	797.00	36.83	8.50	37.80	4.25	4.25	0.00
849.61	15.71	13.00	845.00	49.05	11.32	50.35	4.25	4.25	0.00
Grayburg									
900.00	17.85	13.00	893.24	63.23	14.60	64.90	4.25	4.25	0.00
1,000.00	22.10	13.00	987.20	96.51	22.28	99.05	4.25	4.25	0.00
1,076.78	25.38	13.00	1,057.46	126.61	29.22	129.94	4.25	4.25	0.00
Hold, 25.36°, 13.00° Azi									
1,100.00	25.36	13.00	1,078.46	136.31	31.46	139.89	0.00	0.00	0.00
1,117.20	25.36	13.00	1,094.00	143.48	33.12	147.26	0.00	0.00	0.00
Premier									
1,129.37	25.36	13.00	1,105.00	148.57	34.29	152.47	0.00	0.00	0.00
San Andres									
1,200.00	25.36	13.00	1,168.82	178.04	41.10	182.73	0.00	0.00	0.00
1,234.50	25.36	13.00	1,200.00	192.44	44.42	197.50	0.00	0.00	0.00
8 5/8"									
1,300.00	25.36	13.00	1,259.19	219.78	50.73	225.56	0.00	0.00	0.00
1,400.00	25.36	13.00	1,349.55	261.52	60.36	268.39	0.00	0.00	0.00
1,500.00	25.36	13.00	1,439.91	303.25	70.00	311.23	0.00	0.00	0.00
1,600.00	25.36	13.00	1,530.27	344.99	79.63	354.06	0.00	0.00	0.00
1,700.00	25.36	13.00	1,620.63	386.73	89.26	396.90	0.00	0.00	0.00
1,800.00	25.36	13.00	1,710.99	428.48	98.90	439.73	0.00	0.00	0.00
1,900.00	25.36	13.00	1,801.38	470.20	108.53	482.56	0.00	0.00	0.00
2,000.00	25.36	13.00	1,891.72	511.94	118.17	525.40	0.00	0.00	0.00
2,009.76	25.36	13.00	1,900.54	516.01	119.11	529.58	0.00	0.00	0.00
Start Drop -4.25									
2,100.00	21.53	13.00	1,983.31	550.99	127.18	565.48	4.25	-4.25	0.00
2,200.00	17.28	13.00	2,077.61	583.35	134.65	598.69	4.25	-4.25	0.00
2,300.00	13.03	13.00	2,174.11	608.81	140.53	624.82	4.25	-4.25	0.00
2,400.00	8.78	13.00	2,272.28	627.24	144.78	643.73	4.25	-4.25	0.00
2,500.00	4.53	13.00	2,371.59	638.52	147.38	655.31	4.25	-4.25	0.00
2,600.00	0.28	13.00	2,471.48	642.60	148.33	659.50	4.25	-4.25	0.00
2,606.52	0.00	0.00	2,478.00	642.62	148.33	659.52	4.25	-4.25	0.00
Hold, 0.00°, 13.00° Azi - Glorieta									
2,700.00	0.00	0.00	2,571.48	642.62	148.33	659.52	0.00	0.00	0.00
2,723.52	0.00	0.00	2,595.00	642.62	148.33	659.52	0.00	0.00	0.00
Yaso									
2,800.00	0.00	0.00	2,671.48	642.62	148.33	659.52	0.00	0.00	0.00
2,900.00	0.00	0.00	2,771.48	642.62	148.33	659.52	0.00	0.00	0.00
3,000.00	0.00	0.00	2,871.48	642.62	148.33	659.52	0.00	0.00	0.00
3,100.00	0.00	0.00	2,971.48	642.62	148.33	659.52	0.00	0.00	0.00
3,200.00	0.00	0.00	3,071.48	642.62	148.33	659.52	0.00	0.00	0.00



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MD Reference: 12 8' KB @ 3373.60usft (United 33)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
3,300.00	0.00	0.00	3,171.48	642.62	148.33	659.52	0.00	0.00	0.00
3,400.00	0.00	0.00	3,271.48	642.62	148.33	659.52	0.00	0.00	0.00
3,500.00	0.00	0.00	3,371.48	642.62	148.33	659.52	0.00	0.00	0.00
3,600.00	0.00	0.00	3,471.48	642.62	148.33	659.52	0.00	0.00	0.00
3,700.00	0.00	0.00	3,571.48	642.62	148.33	659.52	0.00	0.00	0.00
3,800.00	0.00	0.00	3,671.48	642.62	148.33	659.52	0.00	0.00	0.00
3,900.00	0.00	0.00	3,771.48	642.62	148.33	659.52	0.00	0.00	0.00
4,000.00	0.00	0.00	3,871.48	642.62	148.33	659.52	0.00	0.00	0.00
4,100.00	0.00	0.00	3,971.48	642.62	148.33	659.52	0.00	0.00	0.00
4,138.52	0.00	0.00	4,010.00	642.62	148.33	659.52	0.00	0.00	0.00
Tubb									
4,200.00	0.00	0.00	4,071.48	642.62	148.33	659.52	0.00	0.00	0.00
4,300.00	0.00	0.00	4,171.48	642.62	148.33	659.52	0.00	0.00	0.00
4,400.00	0.00	0.00	4,271.48	642.62	148.33	659.52	0.00	0.00	0.00
4,500.00	0.00	0.00	4,371.48	642.62	148.33	659.52	0.00	0.00	0.00
4,528.52	0.00	0.00	4,400.00	642.62	148.33	659.52	0.00	0.00	0.00
BHL @ 4528.52' MD									

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									
Aiming Point (Stirling 6M	0.00	0.00	2,478.00	642.62	148.33	644,746.31	544,417.28	32.772441	-104.323314
- plan hits target center									
- Point									
PBHL (Stirling 6M #5)	0.00	0.00	4,400.00	642.62	148.33	644,746.31	544,417.28	32.772441	-104.323314
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,234.50	1,200.00	8 5/8"	8.625	8.625

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
467.00	467.00	Queen		0.00	14.22
849.61	845.00	Grayburg		0.00	14.22
1,117.20	1,094.00	Premier		0.00	14.22
1,128.37	1,105.00	San Andres		0.00	14.22
2,608.52	2,478.00	Glorieta		0.00	14.22
2,723.52	2,595.00	Yeso		0.00	14.22
4,138.52	4,010.00	Tubb		0.00	14.22



Planning Report

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Site: Stirling 6M
Well: Stirling 6M #5
Wellbore: Original Hole
Design: Plan 3

Local Co-ordinate Reference: Well Stirling 6M #5
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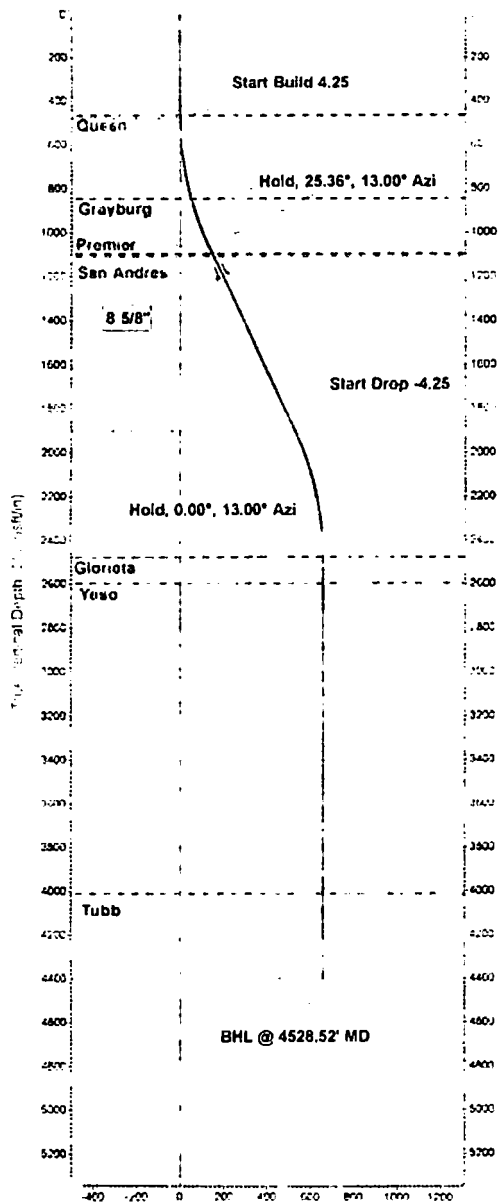
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
480.00	480.00	0.00	0.00	Start Build 4.25
1,076.76	1,057.46	126.61	28.22	Hold, 25.36°, 13.00° Azi
2,009.76	1,900.54	516.01	119.11	Start Drop -4.25
2,806.52	2,478.00	642.62	148.33	Hold, 0.00°, 13.00° Azi
4,528.52	4,400.00	642.62	148.33	BHL @ 4528.52' MD



Lime Rock Resources
Stirling 6M #5
Eddy Co, NM - NAD 83
Wellbore: Original Hole
Plan: Plan 3
Rig: United 33

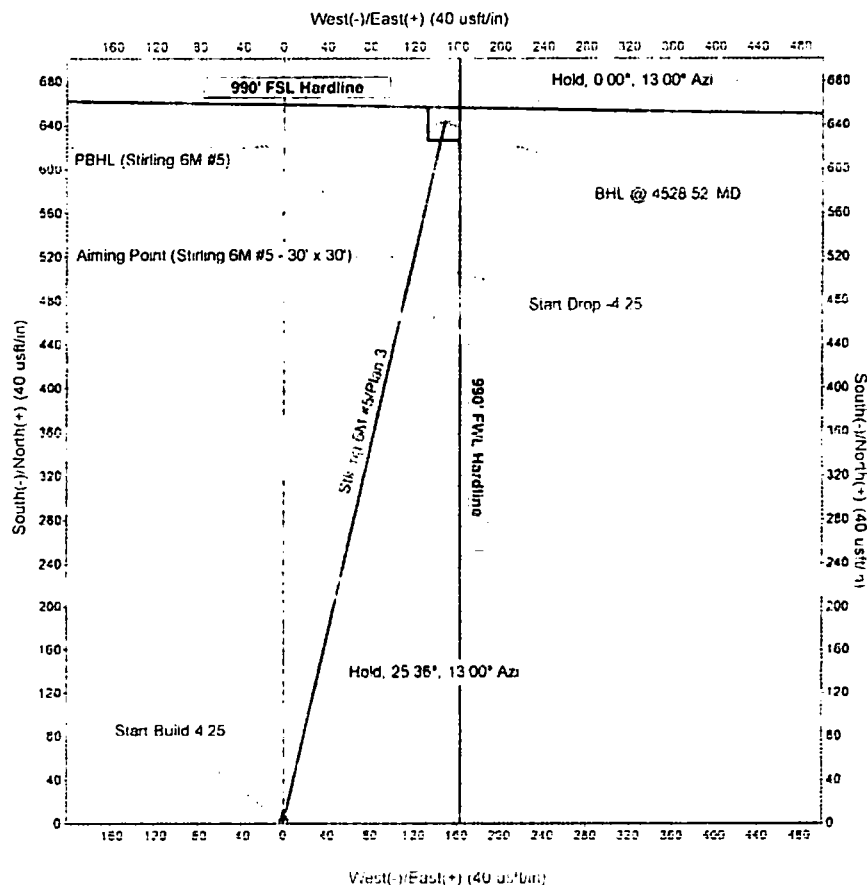
Rig: United 33



SURFACE LOCATION		Ground Elevation	3260.80	12' B' KB @ 3373.60ft (United 33)
N 10° E	+E/W	N 10° E	+44° 1' 10" W	12' B' KB @ 3373.60ft (United 33)
0.00		0.00	0.00	0.00

TARGET LOCATIONS					
Name	TVD	+N/S	+E/W	N 10° E	E 10° W
Aiming Point (Stirling 6M #5 - 30' x 30')	24.800	642.62	148.33	644746.01	544417.28
PBHL (Stirling 6M #5)	4400.00	642.62	148.33	644746.01	544417.28

CASING DETAILS			
TVD	MD	Name	Size
1200.00	1234.50	8 5/8"	8.625



Map System: US State Plane 1983
Datum: North American Datum 1983
Epsoid: CRS 1080
Datum: North American Datum 1983

Latitude: 32.770575
Longitude: -104.323796

Grid East: 544268.95
Grid North: 444103.59
Datum: North American Datum 1983

Destination: Model: 12-GH-18
Sample Date: 12-GH-18
Magnetic Declination: 7.20
Dip Angle from Horizontal: 60.42
Magnetic Field Strength: 48045.14053025nT

True North Magnetic Declination: 7.20°

Well Planning: Jerry Howard

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dlog	Face	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	480.00	0.00	0.00	480.00	0.00	0.00	0.00	0.00	0.00	Start Build 4.25
3	1076.76	25.36	13.00	1057.46	126.61	29.22	4.25	13.00	129.94	Hold 25.36°/13.00° Azi
4	1234.50	0.00	0.00	1234.50	0.00	0.00	0.00	0.00	0.00	Start Drop -4.25
5	4528.52	0.00	0.00	4528.52	642.62	148.33	0.00	0.00	659.52	BHL @ 4528.52' MD

