

API# 30-015-41751

Customer: Lime Rock Resources	Rig: UDI#33	SHL X:
Lease, Well No.: Engle 35F Federal #24	Job No.: CD-13116	SHL Y:
County or Parish: Eddy County	Location or Area: New Mexico	Mag. Decl.: 7.71



Calculated // Targets

KBTVD (@ 0' VS)

Dip Angle (+Dn/-Up)

Sensor

TVD

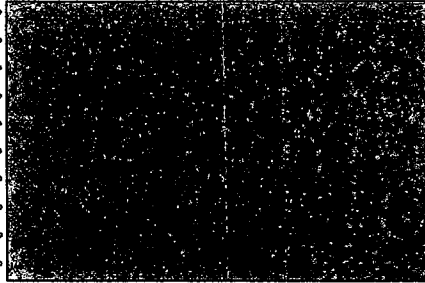
N-S

E-W

Tie-In Survey Co.:						Minimum Curvature Calculations				Rates / 100' M.D.		Dist // Target Line	
Surveying Company: Childress Directional						Proposed Azimuth: 5.42°				Build or	R or -L	Course	Above or
Survey No.	M.D.	INCL.	AZM.	TVD	N / -S	E / -W	V. SECT.	DLS / 100'	-Drop	-Turn	Length	-Below	Right or
Tie-In	0.00	0.00	0.00	0.00'	0.00'	0.00'	0.00'	0.00'					-Left
1.	387.00	0.90	73.10	386.98'	0.88'	2.91'	1.15'	0.23°					
2.	417.00	0.90	89.40	416.98'	0.95'	3.37'	1.27'	0.85°					
3.	506.00	3.70	43.70	505.90'	3.04'	6.05'	3.60'	3.53°					
4.	599.00	6.60	37.80	598.52'	9.43'	11.41'	10.46'	3.16°					
5.	698.00	7.70	29.30	693.77'	19.39'	17.95'	21.00'	1.60°					
6.	792.00	10.80	17.00	789.51'	33.75'	23.79'	35.85'	3.77°					
7.	888.00	11.80	3.10	883.70'	51.99'	26.94'	54.31'	2.93°					
8.	984.00	14.40	0.00	977.23'	73.57'	27.46'	75.84'	3.00°					
9.	1079.00	14.80	368.70	1,069.16'	97.52'	27.19'	99.65'	0.54°					
10.	1176.00	13.30	368.60	1,163.26'	121.06'	26.63'	123.03'	1.55°					
11.	1273.00	11.30	0.50	1,258.03'	141.72'	26.44'	143.58'	2.10°					
12.	1369.00	10.20	2.40	1,352.34'	159.62'	26.88'	161.44'	1.20°					
13.	1465.00	8.40	354.00	1,447.08'	175.08'	26.50'	176.80'	2.34°					
14.	1561.00	6.20	348.50	1,542.30'	187.14'	24.74'	188.64'	2.40°					
15.	1658.00	2.00	351.50	1,639.03'	193.95'	23.44'	195.30'	4.33°					
16.	1754.00	1.00	64.80	1,735.00'	195.96'	23.95'	197.35'	2.04°					
17.	1850.00	0.70	147.50	1,830.99'	195.83'	25.02'	197.31'	1.19°					
18.	1946.00	0.80	162.00	1,926.98'	194.69'	25.55'	196.24'	0.22°					
19.	2042.00	0.80	144.50	2,022.98'	193.51'	26.14'	195.11'	0.25°					
20.	2139.00	0.80	141.50	2,119.97'	192.43'	26.96'	194.11'	0.04°					
21.	2235.00	0.80	133.70	2,215.96'	191.44'	27.86'	193.22'	0.11°					
22.	2331.00	0.80	137.80	2,311.95'	190.48'	28.79'	192.35'	0.06°					
23.	2428.00	0.70	148.50	2,408.94'	189.48'	29.56'	191.42'	0.18°					
24.	2524.00	1.00	144.80	2,504.93'	188.29'	30.35'	190.32'	0.32°					
25.	2620.00	1.10	160.80	2,600.91'	186.74'	31.13'	188.84'	0.32°					
26.	2716.00	1.40	232.00	2,696.89'	185.14'	30.51'	187.20'	1.54°					
27.	2812.00	0.80	302.50	2,792.88'	184.78'	29.02'	186.70'	1.42°					
28.	2908.00	0.80	312.00	2,888.87'	185.59'	27.96'	187.40'	0.14°					
29.	3003.00	0.90	314.10	2,983.86'	186.55'	26.93'	188.26'	0.11°					
30.	3101.00	0.90	309.90	3,081.85'	187.58'	25.79'	189.18'	0.07°					
31.	3197.00	0.70	312.20	3,177.84'	188.46'	24.78'	189.96'	0.21°					
32.	3293.00	0.60	312.20	3,273.83'	189.19'	23.97'	190.61'	0.10°					
33.	3387.00	0.30	318.50	3,367.83'	189.71'	23.44'	191.07'	0.32°					
34.	3483.00	0.40	326.20	3,463.83'	190.17'	23.09'	191.50'	0.11°					
35.	3581.00	0.30	345.90	3,561.83'	190.71'	22.84'	192.01'	0.16°					
36.	3684.00	0.10	243.40	3,664.83'	190.93'	22.69'	192.22'	0.33°					
37.	3780.00	0.20	273.80	3,760.82'	190.90'	22.45'	192.17'	0.13°					
38.	3877.00	0.10	264.90	3,857.82'	190.89'	22.20'	192.13'	0.11°					
39.	3974.00	0.40	222.70	3,954.82'	190.62'	21.89'	191.83'	0.33°					



40.	4070.00	0.40	221.50	4,050.82'	190.12'	21.44'	191.30'	0.01°
41.	4166.00	0.40	231.30	4,146.82'	189.66'	20.95'	190.79'	0.07°
42.	4262.00	0.20	240.40	4,242.82'	189.37'	20.55'	190.46'	0.21°
43.	4359.00	0.40	204.10	4,339.82'	188.98'	20.26'	190.06'	0.27°
44.	4455.00	0.40	206.50	4,435.81'	188.37'	19.97'	189.42'	0.02°
45.	4551.00	0.10	193.00	4,531.81'	187.99'	19.80'	189.02'	0.32°
46.	4647.00	0.10	194.50	4,627.81'	187.83'	19.77'	188.85'	0.00°
47.	4742.00	0.40	78.50	4,722.81'	187.83'	20.07'	188.88'	0.48°
48.	4827.00	0.40	104.70	4,807.81'	187.83'	20.64'	188.94'	0.24°
PTB	4872.00	0.40	104.70	4,852.81'	187.75'	20.94'	188.89'	0.00°



The above survey data is true and correct, complete and within the limitations of the tool as set forth by Childress Directional Drilling, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Lime Rock Resources; that I reviewed these MWD Surveys and find they conform to the principles and procedures as set forth by Childress Directional Drilling.

Regards,

Art Poffenroth
MWD Manager
Childress Directional Drilling, LLC