

# GRMR Oil & Gas, LLC

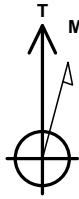
Project: Moffat County, CO

Site: Bert Federal

Well: 29-13

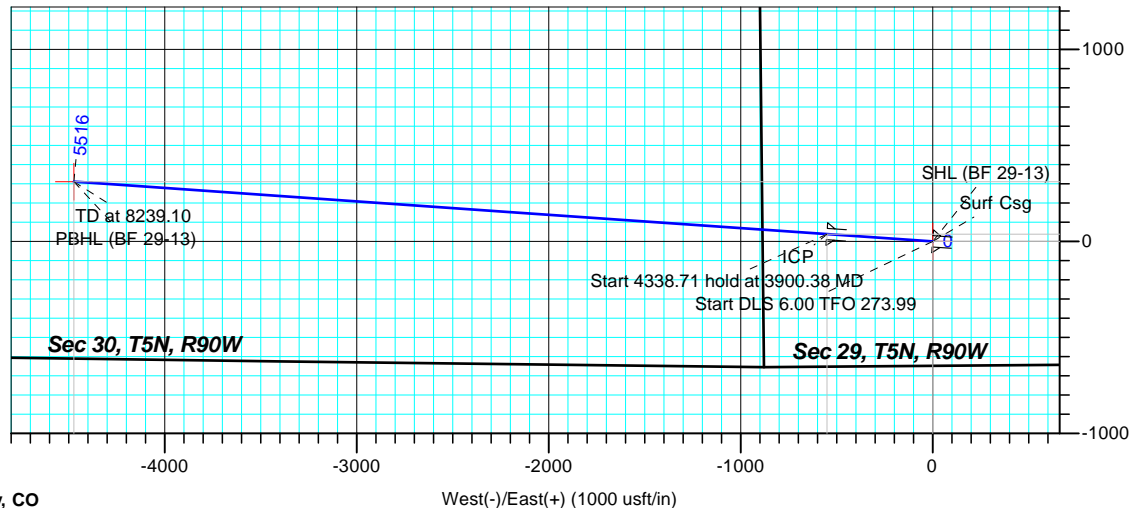
Wellbore: OH

Design: Draft #2



Azimuths to True North  
Magnetic North: 9.67°

Magnetic Field  
Strength: 52060.9snT  
Dip Angle: 66.38°  
Date: 4/11/2016  
Model: HDGM



PROJECT DETAILS: Moffat County, CO

Geodetic System: US State Plane 1983

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Zone: Colorado Northern Zone

Datum: GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)

## CASING DETAILS

TVD	MD	Name
960.00	960.00	Surf Csg
3682.51	3900.38	ICP

## FORMATION TOP DETAILS

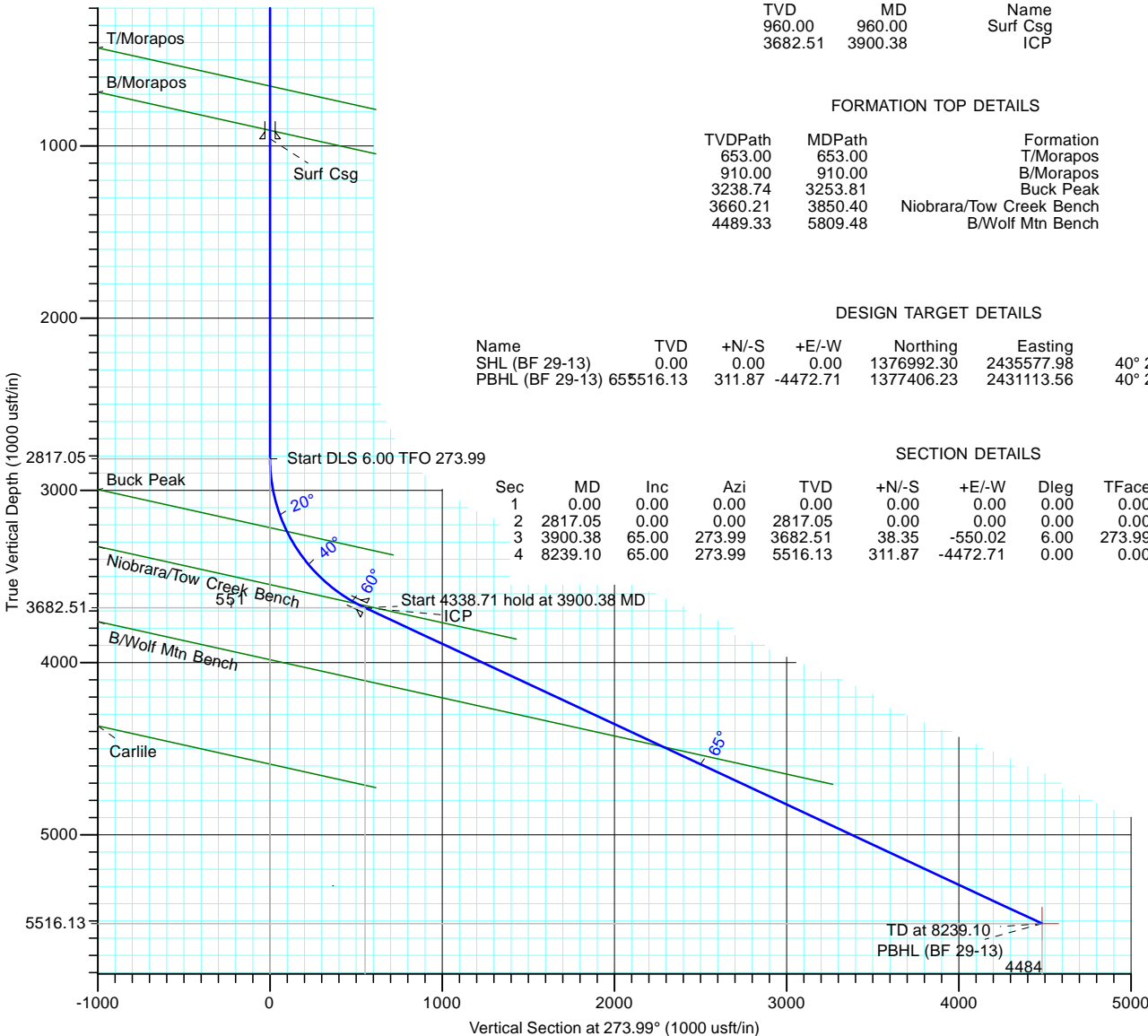
TVDPath	MDPath	Formation
653.00	653.00	T/Morapos
910.00	910.00	B/Morapos
3238.74	3253.81	Buck Peak
3660.21	3850.40	Niobrara/Tow Creek Bench
4489.33	5809.48	B/Wolf Mtn Bench

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (BF 29-13)	0.00	0.00	0.00	1376992.30	2435577.98	40° 21' 1.985 N	107° 31' 30.985 W
PBHL (BF 29-13)	655516.13	311.87	-4472.71	1377406.23	2431113.56	40° 21' 5.063 N	107° 32' 28.757 W

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2817.05	0.00	0.00	2817.05	0.00	0.00	0.00	0.00	0.00	
3	3900.38	65.00	273.99	3682.51	38.35	-550.02	6.00	273.99	551.36	
4	8239.10	65.00	273.99	5516.13	311.87	-4472.71	0.00	0.00	4483.57	PBHL (BF 29-13) 65°



LEAM DRILLING SYSTEMS LLC  
2010 East Davis, Conroe, Texas 77301  
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Draft #2 (29-13/OH)

Created By: Nora Tucker Date: 14:17, April 12 2016

# LEAM Drilling Systems LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Multi_User Db	<b>Local Co-ordinate Reference:</b>	Well 29-13
<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

<b>Project</b>	Moffat County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Bert Federal			
Site Position:		Northing:	1,376,992.30 usft	Latitude:	40° 21' 1.985 N
From:	Lat/Long	Easting:	2,435,577.98 usft	Longitude:	107° 31' 30.985 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.31 °

Well	29-13					
Well Position	+N/-S	0.00 usft	Northing:	1,376,992.30 usft	Latitude:	40° 21' 1.985 N
	+E/-W	0.00 usft	Easting:	2,435,577.98 usft	Longitude:	107° 31' 30.985 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,922.90 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	4/11/2016	9.67	66.38	52,061

<b>Design</b>	Draft #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	273.99	

<b>Plan Sections</b>										
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	
2,817.05	0.00	0.00	2,817.05	0.00	0.00	0.00	0.00	0.00	0.00	
3,900.38	65.00	273.99	3,682.51	38.35	-550.02	6.00	6.00	-7.94	273.99	
8,239.10	65.00	273.99	5,516.13	311.87	-4,472.71	0.00	0.00	0.00	0.00	PBHL (BF 29-13) 65°

# LEAM Drilling Systems LLC

## Planning Report

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<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

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
<b>SHL (BF 29-13)</b>									
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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
653.00	0.00	0.00	653.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>T/Morapos</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	910.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>B/Morapos</b>									
960.00	0.00	0.00	960.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surf Csg</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,817.05	0.00	0.00	2,817.05	0.00	0.00	0.00	0.00	0.00	0.00
2,850.00	1.98	273.99	2,849.99	0.04	-0.57	0.57	6.00	6.00	0.00
2,900.00	4.98	273.99	2,899.90	0.25	-3.59	3.60	6.00	6.00	0.00
2,950.00	7.98	273.99	2,949.57	0.64	-9.22	9.24	6.00	6.00	0.00
3,000.00	10.98	273.99	2,998.88	1.22	-17.43	17.47	6.00	6.00	0.00
3,050.00	13.98	273.99	3,047.70	1.97	-28.20	28.27	6.00	6.00	0.00
3,100.00	16.98	273.99	3,095.88	2.89	-41.51	41.61	6.00	6.00	0.00
3,150.00	19.98	273.99	3,143.30	4.00	-57.32	57.46	6.00	6.00	0.00
3,200.00	22.98	273.99	3,189.82	5.27	-75.58	75.76	6.00	6.00	0.00
3,250.00	25.98	273.99	3,235.32	6.71	-96.24	96.48	6.00	6.00	0.00
3,253.81	26.21	273.99	3,238.74	6.83	-97.91	98.15	6.00	6.00	0.00
<b>Buck Peak</b>									
3,300.00	28.98	273.99	3,279.67	8.32	-119.25	119.54	6.00	6.00	0.00
3,350.00	31.98	273.99	3,322.76	10.08	-144.55	144.90	6.00	6.00	0.00
3,400.00	34.98	273.99	3,364.46	12.00	-172.06	172.48	6.00	6.00	0.00

# LEAM Drilling Systems LLC

## Planning Report

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<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

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)
3,450.00	37.98	273.99	3,404.66	14.06	-201.71	202.20	6.00	6.00	0.00
3,500.00	40.98	273.99	3,443.25	16.28	-233.42	233.98	6.00	6.00	0.00
3,550.00	43.98	273.99	3,480.12	18.62	-267.10	267.74	6.00	6.00	0.00
3,600.00	46.98	273.99	3,515.18	21.10	-302.65	303.39	6.00	6.00	0.00
3,650.00	49.98	273.99	3,548.32	23.71	-339.99	340.82	6.00	6.00	0.00
3,700.00	52.98	273.99	3,579.46	26.43	-379.01	379.93	6.00	6.00	0.00
3,750.00	55.98	273.99	3,608.51	29.26	-419.60	420.62	6.00	6.00	0.00
3,800.00	58.98	273.99	3,635.39	32.19	-461.66	462.78	6.00	6.00	0.00
3,850.00	61.98	273.99	3,660.02	35.22	-505.05	506.28	6.00	6.00	0.00
3,850.40	62.00	273.99	3,660.21	35.24	-505.40	506.63	6.00	6.00	0.00
Niobrara/Tow Creek Bench									
3,900.38	65.00	273.99	3,682.51	38.35	-550.02	551.36	6.00	6.00	0.00
ICP									
4,000.00	65.00	273.99	3,724.61	44.63	-640.09	641.64	0.00	0.00	0.00
4,100.00	65.00	273.99	3,766.87	50.94	-730.50	732.27	0.00	0.00	0.00
4,200.00	65.00	273.99	3,809.13	57.24	-820.91	822.90	0.00	0.00	0.00
4,300.00	65.00	273.99	3,851.40	63.54	-911.32	913.53	0.00	0.00	0.00
4,400.00	65.00	273.99	3,893.66	69.85	-1,001.73	1,004.17	0.00	0.00	0.00
4,500.00	65.00	273.99	3,935.92	76.15	-1,092.14	1,094.80	0.00	0.00	0.00
4,600.00	65.00	273.99	3,978.18	82.46	-1,182.56	1,185.43	0.00	0.00	0.00
4,700.00	65.00	273.99	4,020.44	88.76	-1,272.97	1,276.06	0.00	0.00	0.00
4,800.00	65.00	273.99	4,062.70	95.06	-1,363.38	1,366.69	0.00	0.00	0.00
4,900.00	65.00	273.99	4,104.97	101.37	-1,453.79	1,457.32	0.00	0.00	0.00
5,000.00	65.00	273.99	4,147.23	107.67	-1,544.20	1,547.95	0.00	0.00	0.00
5,100.00	65.00	273.99	4,189.49	113.98	-1,634.61	1,638.58	0.00	0.00	0.00
5,200.00	65.00	273.99	4,231.75	120.28	-1,725.02	1,729.21	0.00	0.00	0.00
5,300.00	65.00	273.99	4,274.01	126.58	-1,815.43	1,819.84	0.00	0.00	0.00
5,400.00	65.00	273.99	4,316.28	132.89	-1,905.85	1,910.47	0.00	0.00	0.00
5,500.00	65.00	273.99	4,358.54	139.19	-1,996.26	2,001.10	0.00	0.00	0.00
5,600.00	65.00	273.99	4,400.80	145.50	-2,086.67	2,091.73	0.00	0.00	0.00
5,700.00	65.00	273.99	4,443.06	151.80	-2,177.08	2,182.37	0.00	0.00	0.00
5,800.00	65.00	273.99	4,485.32	158.10	-2,267.49	2,273.00	0.00	0.00	0.00
5,809.48	65.00	273.99	4,489.33	158.70	-2,276.07	2,281.59	0.00	0.00	0.00
B/Wolf Mtn Bench									
5,900.00	65.00	273.99	4,527.58	164.41	-2,357.90	2,363.63	0.00	0.00	0.00
6,000.00	65.00	273.99	4,569.85	170.71	-2,448.31	2,454.26	0.00	0.00	0.00
6,100.00	65.00	273.99	4,612.11	177.02	-2,538.72	2,544.89	0.00	0.00	0.00
6,200.00	65.00	273.99	4,654.37	183.32	-2,629.14	2,635.52	0.00	0.00	0.00
6,300.00	65.00	273.99	4,696.63	189.62	-2,719.55	2,726.15	0.00	0.00	0.00
6,400.00	65.00	273.99	4,738.89	195.93	-2,809.96	2,816.78	0.00	0.00	0.00
6,500.00	65.00	273.99	4,781.16	202.23	-2,900.37	2,907.41	0.00	0.00	0.00
6,600.00	65.00	273.99	4,823.42	208.54	-2,990.78	2,998.04	0.00	0.00	0.00
6,700.00	65.00	273.99	4,865.68	214.84	-3,081.19	3,088.67	0.00	0.00	0.00
6,800.00	65.00	273.99	4,907.94	221.14	-3,171.60	3,179.30	0.00	0.00	0.00
6,900.00	65.00	273.99	4,950.20	227.45	-3,262.02	3,269.93	0.00	0.00	0.00
7,000.00	65.00	273.99	4,992.46	233.75	-3,352.43	3,360.57	0.00	0.00	0.00
7,100.00	65.00	273.99	5,034.73	240.06	-3,442.84	3,451.20	0.00	0.00	0.00
7,200.00	65.00	273.99	5,076.99	246.36	-3,533.25	3,541.83	0.00	0.00	0.00
7,300.00	65.00	273.99	5,119.25	252.67	-3,623.66	3,632.46	0.00	0.00	0.00
7,400.00	65.00	273.99	5,161.51	258.97	-3,714.07	3,723.09	0.00	0.00	0.00
7,500.00	65.00	273.99	5,203.77	265.27	-3,804.48	3,813.72	0.00	0.00	0.00
7,600.00	65.00	273.99	5,246.04	271.58	-3,894.89	3,904.35	0.00	0.00	0.00

# LEAM Drilling Systems LLC

## Planning Report

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<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

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)
7,700.00	65.00	273.99	5,288.30	277.88	-3,985.31	3,994.98	0.00	0.00	0.00
7,800.00	65.00	273.99	5,330.56	284.19	-4,075.72	4,085.61	0.00	0.00	0.00
7,900.00	65.00	273.99	5,372.82	290.49	-4,166.13	4,176.24	0.00	0.00	0.00
7,902.66	65.00	273.99	5,373.95	290.66	-4,168.54	4,178.66	0.00	0.00	0.00
PBHL (BF 29-13)									
8,000.00	65.00	273.99	5,415.08	296.79	-4,256.54	4,266.87	0.00	0.00	0.00
8,100.00	65.00	273.99	5,457.34	303.10	-4,346.95	4,357.50	0.00	0.00	0.00
8,200.00	65.00	273.99	5,499.61	309.40	-4,437.36	4,448.14	0.00	0.00	0.00
8,239.10	65.00	273.99	5,516.13	311.87	-4,472.71	4,483.57	0.00	0.00	0.00
PBHL (BF 29-13) 65°									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (BF 29-13) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
PBHL (BF 29-13) 65° - plan hits target center - Point	0.00	0.00	5,516.13	311.87	-4,472.71	1,377,406.23	2,431,113.56	40° 21' 5.063 N	107° 32' 28.757 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
960.00	960.00	Surf Csg			
3,900.38	3,682.51	ICP			

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
653.00	653.00	T/Morapos		12.50	276.50
910.00	910.00	B/Morapos		12.50	276.50
3,253.81	3,238.74	Buck Peak		12.50	276.50
3,850.40	3,660.21	Niobrara/Tow Creek Bench		12.50	276.50
5,809.48	4,489.33	B/Wolf Mtn Bench		12.50	276.50

# **GRMR Oil & Gas, LLC**

**Moffat County, CO**

**Bert Federal**

**29-13**

**OH**

**Plan: Draft #2**

## **Standard Planning Report - Geographic**

**12 April, 2016**

# LEAM Drilling Systems LLC

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Multi_User Db	<b>Local Co-ordinate Reference:</b>	Well 29-13
<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

<b>Project</b>	Moffat County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Bert Federal			
Site Position:		Northing:	1,376,992.30 usft	Latitude:	40° 21' 1.985 N
From:	Lat/Long	Easting:	2,435,577.98 usft	Longitude:	107° 31' 30.985 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.31 °

Well	29-13					
Well Position	+N/-S	0.00 usft	Northing:	1,376,992.30 usft	Latitude:	40° 21' 1.985 N
	+E/-W	0.00 usft	Easting:	2,435,577.98 usft	Longitude:	107° 31' 30.985 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,922.90 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	4/11/2016	9.67	66.38	52,061

<b>Design</b>	Draft #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	273.99	

<b>Plan Sections</b>										
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	
2,817.05	0.00	0.00	2,817.05	0.00	0.00	0.00	0.00	0.00	0.00	
3,900.38	65.00	273.99	3,682.51	38.35	-550.02	6.00	6.00	-7.94	273.99	
8,239.10	65.00	273.99	5,516.13	311.87	-4,472.71	0.00	0.00	0.00	0.00	PBHL (BF 29-13) 65°

# LEAM Drilling Systems LLC

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Multi_User Db	<b>Local Co-ordinate Reference:</b>	Well 29-13
<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
<b>SHL (BF 29-13)</b>									
100.00	0.00	0.00	100.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
200.00	0.00	0.00	200.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
300.00	0.00	0.00	300.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
400.00	0.00	0.00	400.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
500.00	0.00	0.00	500.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
600.00	0.00	0.00	600.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
653.00	0.00	0.00	653.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
<b>T/Morapos</b>									
700.00	0.00	0.00	700.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
800.00	0.00	0.00	800.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
900.00	0.00	0.00	900.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
910.00	0.00	0.00	910.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
<b>B/Morapos</b>									
960.00	0.00	0.00	960.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
<b>Surf Csg</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,700.00	0.00	0.00	1,700.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,800.00	0.00	0.00	1,800.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
1,900.00	0.00	0.00	1,900.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,000.00	0.00	0.00	2,000.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,100.00	0.00	0.00	2,100.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,200.00	0.00	0.00	2,200.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,300.00	0.00	0.00	2,300.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,400.00	0.00	0.00	2,400.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,500.00	0.00	0.00	2,500.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,600.00	0.00	0.00	2,600.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,700.00	0.00	0.00	2,700.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,800.00	0.00	0.00	2,800.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,817.05	0.00	0.00	2,817.05	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
2,850.00	1.98	273.99	2,849.99	0.04	-0.57	1,376,992.36	2,435,577.42	40° 21' 1.985 N	107° 31' 30.992 W
2,900.00	4.98	273.99	2,899.90	0.25	-3.59	1,376,992.64	2,435,574.40	40° 21' 1.987 N	107° 31' 31.031 W
2,950.00	7.98	273.99	2,949.57	0.64	-9.22	1,376,993.16	2,435,568.78	40° 21' 1.991 N	107° 31' 31.104 W
3,000.00	10.98	273.99	2,998.88	1.22	-17.43	1,376,993.92	2,435,560.59	40° 21' 1.997 N	107° 31' 31.210 W
3,050.00	13.98	273.99	3,047.70	1.97	-28.20	1,376,994.91	2,435,549.83	40° 21' 2.004 N	107° 31' 31.349 W
3,100.00	16.98	273.99	3,095.88	2.89	-41.51	1,376,996.14	2,435,536.55	40° 21' 2.014 N	107° 31' 31.521 W
3,150.00	19.98	273.99	3,143.30	4.00	-57.32	1,376,997.61	2,435,520.77	40° 21' 2.024 N	107° 31' 31.725 W
3,200.00	22.98	273.99	3,189.82	5.27	-75.58	1,376,999.30	2,435,502.54	40° 21' 2.037 N	107° 31' 31.961 W
3,250.00	25.98	273.99	3,235.32	6.71	-96.24	1,377,001.21	2,435,481.92	40° 21' 2.051 N	107° 31' 32.228 W
3,253.81	26.21	273.99	3,238.74	6.83	-97.91	1,377,001.36	2,435,480.25	40° 21' 2.052 N	107° 31' 32.250 W
<b>Buck Peak</b>									
3,300.00	28.98	273.99	3,279.67	8.32	-119.25	1,377,003.34	2,435,458.95	40° 21' 2.067 N	107° 31' 32.525 W
3,350.00	31.98	273.99	3,322.76	10.08	-144.55	1,377,005.68	2,435,433.70	40° 21' 2.085 N	107° 31' 32.852 W
3,400.00	34.98	273.99	3,364.46	12.00	-172.06	1,377,008.23	2,435,406.24	40° 21' 2.104 N	107° 31' 33.207 W
3,450.00	37.98	273.99	3,404.66	14.06	-201.71	1,377,010.97	2,435,376.65	40° 21' 2.124 N	107° 31' 33.590 W



# LEAM Drilling Systems LLC

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Multi_User Db	<b>Local Co-ordinate Reference:</b>	Well 29-13
<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,500.00	40.98	273.99	3,443.25	16.28	-233.42	1,377,013.90	2,435,345.00	40° 21' 2.146 N	107° 31' 34.000 W
3,550.00	43.98	273.99	3,480.12	18.62	-267.10	1,377,017.02	2,435,311.38	40° 21' 2.169 N	107° 31' 34.435 W
3,600.00	46.98	273.99	3,515.18	21.10	-302.65	1,377,020.31	2,435,275.89	40° 21' 2.193 N	107° 31' 34.894 W
3,650.00	49.98	273.99	3,548.32	23.71	-339.99	1,377,023.77	2,435,238.62	40° 21' 2.219 N	107° 31' 35.376 W
3,700.00	52.98	273.99	3,579.46	26.43	-379.01	1,377,027.38	2,435,199.67	40° 21' 2.246 N	107° 31' 35.880 W
3,750.00	55.98	273.99	3,608.51	29.26	-419.60	1,377,031.14	2,435,159.16	40° 21' 2.274 N	107° 31' 36.405 W
3,800.00	58.98	273.99	3,635.39	32.19	-461.66	1,377,035.03	2,435,117.18	40° 21' 2.303 N	107° 31' 36.948 W
3,850.00	61.98	273.99	3,660.02	35.22	-505.05	1,377,039.04	2,435,073.87	40° 21' 2.333 N	107° 31' 37.508 W
3,850.40	62.00	273.99	3,660.21	35.24	-505.40	1,377,039.08	2,435,073.52	40° 21' 2.333 N	107° 31' 37.513 W
Niobrara/Tow Creek Bench									
3,900.38	65.00	273.99	3,682.51	38.35	-550.02	1,377,043.20	2,435,028.98	40° 21' 2.364 N	107° 31' 38.089 W
ICP									
4,000.00	65.00	273.99	3,724.61	44.63	-640.09	1,377,051.54	2,434,939.08	40° 21' 2.426 N	107° 31' 39.253 W
4,100.00	65.00	273.99	3,766.87	50.94	-730.50	1,377,059.91	2,434,848.84	40° 21' 2.488 N	107° 31' 40.420 W
4,200.00	65.00	273.99	3,809.13	57.24	-820.91	1,377,068.27	2,434,758.59	40° 21' 2.550 N	107° 31' 41.588 W
4,300.00	65.00	273.99	3,851.40	63.54	-911.32	1,377,076.64	2,434,668.35	40° 21' 2.613 N	107° 31' 42.756 W
4,400.00	65.00	273.99	3,893.66	69.85	-1,001.73	1,377,085.01	2,434,578.11	40° 21' 2.675 N	107° 31' 43.924 W
4,500.00	65.00	273.99	3,935.92	76.15	-1,092.14	1,377,093.38	2,434,487.86	40° 21' 2.737 N	107° 31' 45.092 W
4,600.00	65.00	273.99	3,978.18	82.46	-1,182.56	1,377,101.74	2,434,397.62	40° 21' 2.800 N	107° 31' 46.259 W
4,700.00	65.00	273.99	4,020.44	88.76	-1,272.97	1,377,110.11	2,434,307.37	40° 21' 2.862 N	107° 31' 47.427 W
4,800.00	65.00	273.99	4,062.70	95.06	-1,363.38	1,377,118.48	2,434,217.13	40° 21' 2.924 N	107° 31' 48.595 W
4,900.00	65.00	273.99	4,104.97	101.37	-1,453.79	1,377,126.84	2,434,126.89	40° 21' 2.986 N	107° 31' 49.763 W
5,000.00	65.00	273.99	4,147.23	107.67	-1,544.20	1,377,135.21	2,434,036.64	40° 21' 3.049 N	107° 31' 50.931 W
5,100.00	65.00	273.99	4,189.49	113.98	-1,634.61	1,377,143.58	2,433,946.40	40° 21' 3.111 N	107° 31' 52.099 W
5,200.00	65.00	273.99	4,231.75	120.28	-1,725.02	1,377,151.95	2,433,856.16	40° 21' 3.173 N	107° 31' 53.266 W
5,300.00	65.00	273.99	4,274.01	126.58	-1,815.43	1,377,160.31	2,433,765.91	40° 21' 3.235 N	107° 31' 54.434 W
5,400.00	65.00	273.99	4,316.28	132.89	-1,905.85	1,377,168.68	2,433,675.67	40° 21' 3.297 N	107° 31' 55.602 W
5,500.00	65.00	273.99	4,358.54	139.19	-1,996.26	1,377,177.05	2,433,585.42	40° 21' 3.360 N	107° 31' 56.770 W
5,600.00	65.00	273.99	4,400.80	145.50	-2,086.67	1,377,185.41	2,433,495.18	40° 21' 3.422 N	107° 31' 57.938 W
5,700.00	65.00	273.99	4,443.06	151.80	-2,177.08	1,377,193.78	2,433,404.94	40° 21' 3.484 N	107° 31' 59.105 W
5,800.00	65.00	273.99	4,485.32	158.10	-2,267.49	1,377,202.15	2,433,314.69	40° 21' 3.546 N	107° 32' 0.273 W
5,809.48	65.00	273.99	4,489.33	158.70	-2,276.07	1,377,202.94	2,433,306.13	40° 21' 3.552 N	107° 32' 0.384 W
B/Wolf Mtn Bench									
5,900.00	65.00	273.99	4,527.58	164.41	-2,357.90	1,377,210.52	2,433,224.45	40° 21' 3.609 N	107° 32' 1.441 W
6,000.00	65.00	273.99	4,569.85	170.71	-2,448.31	1,377,218.88	2,433,134.21	40° 21' 3.671 N	107° 32' 2.609 W
6,100.00	65.00	273.99	4,612.11	177.02	-2,538.72	1,377,227.25	2,433,043.96	40° 21' 3.733 N	107° 32' 3.777 W
6,200.00	65.00	273.99	4,654.37	183.32	-2,629.14	1,377,235.62	2,432,953.72	40° 21' 3.795 N	107° 32' 4.944 W
6,300.00	65.00	273.99	4,696.63	189.62	-2,719.55	1,377,243.99	2,432,863.47	40° 21' 3.857 N	107° 32' 6.112 W
6,400.00	65.00	273.99	4,738.89	195.93	-2,809.96	1,377,252.35	2,432,773.23	40° 21' 3.920 N	107° 32' 7.280 W
6,500.00	65.00	273.99	4,781.16	202.23	-2,900.37	1,377,260.72	2,432,682.99	40° 21' 3.982 N	107° 32' 8.448 W
6,600.00	65.00	273.99	4,823.42	208.54	-2,990.78	1,377,269.09	2,432,592.74	40° 21' 4.044 N	107° 32' 9.616 W
6,700.00	65.00	273.99	4,865.68	214.84	-3,081.19	1,377,277.45	2,432,502.50	40° 21' 4.106 N	107° 32' 10.783 W
6,800.00	65.00	273.99	4,907.94	221.14	-3,171.60	1,377,285.82	2,432,412.26	40° 21' 4.168 N	107° 32' 11.951 W
6,900.00	65.00	273.99	4,950.20	227.45	-3,262.02	1,377,294.19	2,432,322.01	40° 21' 4.231 N	107° 32' 13.119 W
7,000.00	65.00	273.99	4,992.46	233.75	-3,352.43	1,377,302.56	2,432,231.77	40° 21' 4.293 N	107° 32' 14.287 W
7,100.00	65.00	273.99	5,034.73	240.06	-3,442.84	1,377,310.92	2,432,141.52	40° 21' 4.355 N	107° 32' 15.455 W
7,200.00	65.00	273.99	5,076.99	246.36	-3,533.25	1,377,319.29	2,432,051.28	40° 21' 4.417 N	107° 32' 16.623 W
7,300.00	65.00	273.99	5,119.25	252.67	-3,623.66	1,377,327.66	2,431,961.04	40° 21' 4.479 N	107° 32' 17.790 W
7,400.00	65.00	273.99	5,161.51	258.97	-3,714.07	1,377,336.02	2,431,870.79	40° 21' 4.541 N	107° 32' 18.958 W
7,500.00	65.00	273.99	5,203.77	265.27	-3,804.48	1,377,344.39	2,431,780.55	40° 21' 4.604 N	107° 32' 20.126 W
7,600.00	65.00	273.99	5,246.04	271.58	-3,894.89	1,377,352.76	2,431,690.31	40° 21' 4.666 N	107° 32' 21.294 W
7,700.00	65.00	273.99	5,288.30	277.88	-3,985.31	1,377,361.13	2,431,600.06	40° 21' 4.728 N	107° 32' 22.462 W

# LEAM Drilling Systems LLC

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Multi_User Db	<b>Local Co-ordinate Reference:</b>	Well 29-13
<b>Company:</b>	GRMR Oil & Gas, LLC	<b>TVD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	GE 6922.9' + KB 19' @ 6941.90usft (Prelim Planning)
<b>Site:</b>	Bert Federal	<b>North Reference:</b>	True
<b>Well:</b>	29-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Draft #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,800.00	65.00	273.99	5,330.56	284.19	-4,075.72	1,377,369.49	2,431,509.82	40° 21' 4.790 N	107° 32' 23.630 W
7,900.00	65.00	273.99	5,372.82	290.49	-4,166.13	1,377,377.86	2,431,419.58	40° 21' 4.852 N	107° 32' 24.797 W
7,902.66	65.00	273.99	5,373.95	290.66	-4,168.54	1,377,378.08	2,431,417.17	40° 21' 4.854 N	107° 32' 24.828 W
<b>PBHL (BF 29-13)</b>									
8,000.00	65.00	273.99	5,415.08	296.79	-4,256.54	1,377,386.23	2,431,329.33	40° 21' 4.914 N	107° 32' 25.965 W
8,100.00	65.00	273.99	5,457.34	303.10	-4,346.95	1,377,394.59	2,431,239.09	40° 21' 4.976 N	107° 32' 27.133 W
8,200.00	65.00	273.99	5,499.61	309.40	-4,437.36	1,377,402.96	2,431,148.84	40° 21' 5.039 N	107° 32' 28.301 W
8,239.10	65.00	273.99	5,516.13	311.87	-4,472.71	1,377,406.23	2,431,113.56	40° 21' 5.063 N	107° 32' 28.757 W
<b>PBHL (BF 29-13) 65°</b>									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (BF 29-13) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,376,992.30	2,435,577.98	40° 21' 1.985 N	107° 31' 30.985 W
PBHL (BF 29-13) 65° - plan hits target center - Point	0.00	0.00	5,516.13	311.87	-4,472.71	1,377,406.23	2,431,113.56	40° 21' 5.063 N	107° 32' 28.757 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
960.00	960.00	Surf Csg			
3,900.38	3,682.51	ICP			

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
653.00	653.00	T/Morapos		12.50	276.50
910.00	910.00	B/Morapos		12.50	276.50
3,253.81	3,238.74	Buck Peak		12.50	276.50
3,850.40	3,660.21	Niobrara/Tow Creek Bench		12.50	276.50
5,809.48	4,489.33	B/Wolf Mtn Bench		12.50	276.50