



Entek GRB, Inc

**Moffat County, CO
Sec. 24-T12N-89W
SD Federal 24-9
Wellbore #1**

Plan: Plan #1

Standard Planning Report

24 June, 2010

Entek GRB, Inc
SD Federal 24-9DL
Moffat County, CO

Geodetic System: US State Plane 1983
Zone: Colorado Northern Zone
WELL @ 7062.0ft (Original Well Elev)
Ground Level: 7050.0
Latitude: 40° 58' 45.642 N
Longitude: 107° 19' 9.214 W
Magnetic North is 10.36° East of True North (Magnetic Declination)



FORMATION TOP DETAILS

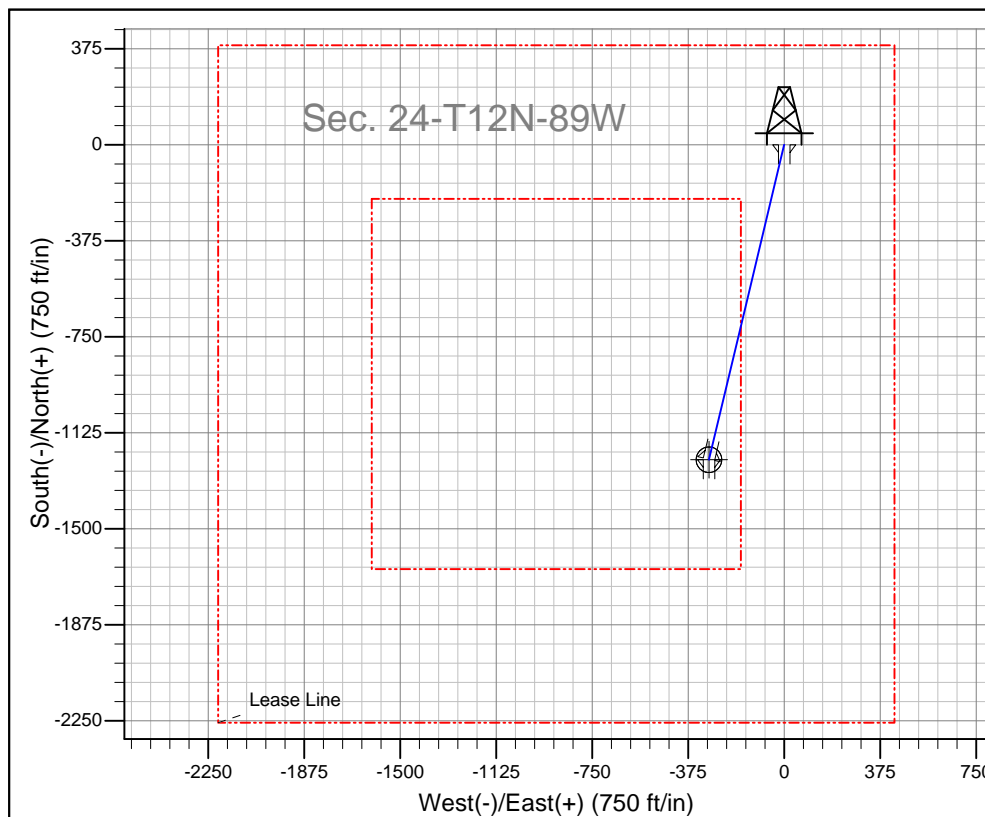
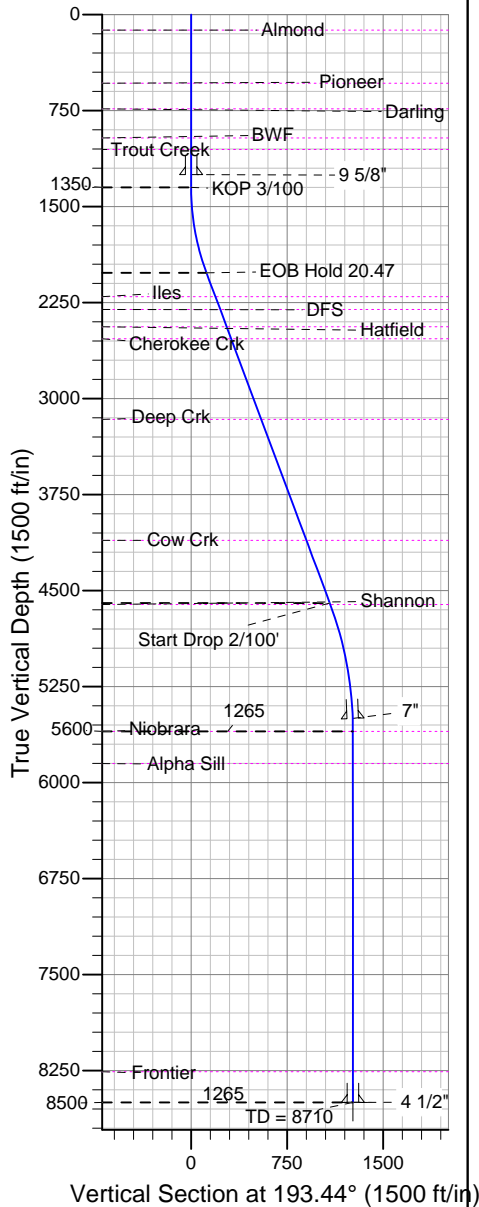
TVDPath	MDPath	Formation
123.0	123.0	Almond
537.0	537.0	Pioneer
737.0	737.0	Darling
964.0	964.0	BWF
1054.0	1054.0	Trout Creek
2204.0	2231.0	Iles
2304.0	2337.7	DFS
2439.0	2481.8	Hatfield
2532.0	2581.1	Cherokee Crk
3162.0	3253.5	Deep Crk
4108.0	4263.3	Cow Crk
4609.0	4798.1	Shannon
5600.0	5810.0	Niobrara
5852.0	6062.0	Alpha Sill
8260.0	8470.0	Frontier

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1350.0	0.00	0.00	1350.0	0.0	0.0	0.00	0.00	0.0	
2032.4	20.47	193.44	2018.0	-117.3	-28.0	3.00	193.44	120.6	
4786.4	20.47	193.44	4598.1	-1054.1	-251.9	0.00	0.00	1083.8	
5810.0	0.00	0.00	5600.0	-1230.1	-294.0	2.00	180.00	1264.7	
8710.0	0.00	0.00	8500.0	-1230.1	-294.0	0.00	0.00	1264.7	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape
SD Federal 24-9DL	8500.0	-1230.1	-294.0	40° 58' 33.488 N	107° 19' 13.046 W	Circle (Radius: 50.0)



CASING DETAILS

TVD	MD	Name	Size
1250.0	1250.0	9 5/8"	9-5/8
5500.0	5710.0	7"	7
8500.0	8710.0	4 1/2"	4-1/2



Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 53221.1nT
Dip Angle: 67.10°
Date: 06/24/2010
Model: IGRF2010

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well SD Federal 24-9
Company:	Entek GRB, Inc	TVD Reference:	WELL @ 7062.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 7062.0ft (Original Well Elev)
Site:	Sec. 24-T12N-89W	North Reference:	True
Well:	SD Federal 24-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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

Site		Sec. 24-T12N-89W				
Site Position:		Northing:	1,604,783.74 ft	Latitude:	40° 58' 45.642 N	
From:	Lat/Long	Easting:	2,497,692.22 ft	Longitude:	107° 19' 9.214 W	
Position Uncertainty:		0.0 ft	Slot Radius:	"	Grid Convergence:	-1.18 °

Well	SD Federal 24-9					
Well Position	+N/-S	0.0 ft	Northing:	1,604,783.74 ft	Latitude:	40° 58' 45.642 N
	+E/-W	0.0 ft	Easting:	2,497,692.22 ft	Longitude:	107° 19' 9.214 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	7,062.0 ft	Ground Level:	7,050.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/24/10	10.36	67.10	53,221

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	193.44

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,032.4	20.47	193.44	2,018.0	-117.3	-28.0	3.00	3.00	0.00	193.44	
4,786.4	20.47	193.44	4,598.1	-1,054.1	-251.9	0.00	0.00	0.00	0.00	
5,810.0	0.00	0.00	5,600.0	-1,230.1	-294.0	2.00	-2.00	0.00	180.00	
8,710.0	0.00	0.00	8,500.0	-1,230.1	-294.0	0.00	0.00	0.00	0.00	

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well SD Federal 24-9
Company:	Entek GRB, Inc	TVD Reference:	WELL @ 7062.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 7062.0ft (Original Well Elev)
Site:	Sec. 24-T12N-89W	North Reference:	True
Well:	SD Federal 24-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
123.0	0.00	0.00	123.0	0.0	0.0	0.0	0.00	0.00	0.00
Almond									
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
537.0	0.00	0.00	537.0	0.0	0.0	0.0	0.00	0.00	0.00
Pioneer									
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
737.0	0.00	0.00	737.0	0.0	0.0	0.0	0.00	0.00	0.00
Darling									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
964.0	0.00	0.00	964.0	0.0	0.0	0.0	0.00	0.00	0.00
BWF									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,054.0	0.00	0.00	1,054.0	0.0	0.0	0.0	0.00	0.00	0.00
Trout Creek									
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP 3/100'									
1,400.0	1.50	193.44	1,400.0	-0.6	-0.2	0.7	3.00	3.00	0.00
1,500.0	4.50	193.44	1,499.8	-5.7	-1.4	5.9	3.00	3.00	0.00
1,600.0	7.50	193.44	1,599.3	-15.9	-3.8	16.3	3.00	3.00	0.00
1,700.0	10.50	193.44	1,698.0	-31.1	-7.4	32.0	3.00	3.00	0.00
1,800.0	13.50	193.44	1,795.8	-51.3	-12.3	52.8	3.00	3.00	0.00
1,900.0	16.50	193.44	1,892.4	-76.5	-18.3	78.6	3.00	3.00	0.00
2,000.0	19.50	193.44	1,987.5	-106.5	-25.5	109.5	3.00	3.00	0.00
2,032.4	20.47	193.44	2,018.0	-117.3	-28.0	120.6	3.00	3.00	0.00
EOB Hold D20.47eg									
2,100.0	20.47	193.44	2,081.3	-140.3	-33.5	144.3	0.00	0.00	0.00
2,200.0	20.47	193.44	2,175.0	-174.3	-41.7	179.2	0.00	0.00	0.00
2,231.0	20.47	193.44	2,204.0	-184.9	-44.2	190.1	0.00	0.00	0.00
Iles									
2,300.0	20.47	193.44	2,268.7	-208.3	-49.8	214.2	0.00	0.00	0.00
2,337.7	20.47	193.44	2,304.0	-221.2	-52.9	227.4	0.00	0.00	0.00
DFS									
2,400.0	20.47	193.44	2,362.4	-242.4	-57.9	249.2	0.00	0.00	0.00
2,481.8	20.47	193.44	2,439.0	-270.2	-64.6	277.8	0.00	0.00	0.00
Hatfield									
2,500.0	20.47	193.44	2,456.0	-276.4	-66.1	284.2	0.00	0.00	0.00
2,581.1	20.47	193.44	2,532.0	-304.0	-72.6	312.5	0.00	0.00	0.00
Cherokee Crk									
2,600.0	20.47	193.44	2,549.7	-310.4	-74.2	319.1	0.00	0.00	0.00
2,700.0	20.47	193.44	2,643.4	-344.4	-82.3	354.1	0.00	0.00	0.00

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well SD Federal 24-9
Company:	Entek GRB, Inc	TVD Reference:	WELL @ 7062.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 7062.0ft (Original Well Elev)
Site:	Sec. 24-T12N-89W	North Reference:	True
Well:	SD Federal 24-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,800.0	20.47	193.44	2,737.1	-378.4	-90.4	389.1	0.00	0.00	0.00
2,900.0	20.47	193.44	2,830.8	-412.4	-98.6	424.1	0.00	0.00	0.00
3,000.0	20.47	193.44	2,924.5	-446.5	-106.7	459.0	0.00	0.00	0.00
3,100.0	20.47	193.44	3,018.2	-480.5	-114.8	494.0	0.00	0.00	0.00
3,200.0	20.47	193.44	3,111.8	-514.5	-123.0	529.0	0.00	0.00	0.00
3,253.5	20.47	193.44	3,162.0	-532.7	-127.3	547.7	0.00	0.00	0.00
Deep Crk									
3,300.0	20.47	193.44	3,205.5	-548.5	-131.1	563.9	0.00	0.00	0.00
3,400.0	20.47	193.44	3,299.2	-582.5	-139.2	598.9	0.00	0.00	0.00
3,500.0	20.47	193.44	3,392.9	-616.5	-147.4	633.9	0.00	0.00	0.00
3,600.0	20.47	193.44	3,486.6	-650.5	-155.5	668.9	0.00	0.00	0.00
3,700.0	20.47	193.44	3,580.3	-684.6	-163.6	703.8	0.00	0.00	0.00
3,800.0	20.47	193.44	3,673.9	-718.6	-171.7	738.8	0.00	0.00	0.00
3,900.0	20.47	193.44	3,767.6	-752.6	-179.9	773.8	0.00	0.00	0.00
4,000.0	20.47	193.44	3,861.3	-786.6	-188.0	808.8	0.00	0.00	0.00
4,100.0	20.47	193.44	3,955.0	-820.6	-196.1	843.7	0.00	0.00	0.00
4,200.0	20.47	193.44	4,048.7	-854.6	-204.3	878.7	0.00	0.00	0.00
4,263.3	20.47	193.44	4,108.0	-876.2	-209.4	900.9	0.00	0.00	0.00
Cow Crk									
4,300.0	20.47	193.44	4,142.4	-888.7	-212.4	913.7	0.00	0.00	0.00
4,400.0	20.47	193.44	4,236.1	-922.7	-220.5	948.7	0.00	0.00	0.00
4,500.0	20.47	193.44	4,329.7	-956.7	-228.7	983.6	0.00	0.00	0.00
4,600.0	20.47	193.44	4,423.4	-990.7	-236.8	1,018.6	0.00	0.00	0.00
4,700.0	20.47	193.44	4,517.1	-1,024.7	-244.9	1,053.6	0.00	0.00	0.00
4,786.4	20.47	193.44	4,598.0	-1,054.1	-251.9	1,083.8	0.00	0.00	0.00
Start Drop 2/100'									
4,798.1	20.24	193.44	4,609.0	-1,058.1	-252.9	1,087.9	2.00	-2.00	0.00
Shannon									
4,800.0	20.20	193.44	4,610.8	-1,058.7	-253.0	1,088.5	2.00	-2.00	0.00
4,900.0	18.20	193.44	4,705.2	-1,090.7	-260.7	1,121.4	2.00	-2.00	0.00
5,000.0	16.20	193.44	4,800.8	-1,119.5	-267.6	1,151.0	2.00	-2.00	0.00
5,100.0	14.20	193.44	4,897.3	-1,145.0	-273.7	1,177.2	2.00	-2.00	0.00
5,200.0	12.20	193.44	4,994.6	-1,167.2	-279.0	1,200.0	2.00	-2.00	0.00
5,300.0	10.20	193.44	5,092.7	-1,186.0	-283.5	1,219.5	2.00	-2.00	0.00
5,400.0	8.20	193.44	5,191.4	-1,201.6	-287.2	1,235.4	2.00	-2.00	0.00
5,500.0	6.20	193.44	5,290.6	-1,213.8	-290.1	1,248.0	2.00	-2.00	0.00
5,600.0	4.20	193.44	5,390.2	-1,222.6	-292.2	1,257.0	2.00	-2.00	0.00
5,700.0	2.20	193.44	5,490.0	-1,228.0	-293.5	1,262.6	2.00	-2.00	0.00
5,760.0	1.00	193.44	5,550.0	-1,229.7	-293.9	1,264.3	2.00	-2.00	0.00
7"									
5,800.0	0.20	193.44	5,590.0	-1,230.1	-294.0	1,264.7	2.00	-2.00	0.00
5,810.0	0.00	0.00	5,600.0	-1,230.1	-294.0	1,264.7	2.00	-2.00	0.00
EOD - Niobrara									
5,900.0	0.00	0.00	5,690.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,790.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,062.0	0.00	0.00	5,852.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
Alpha Sill									
6,100.0	0.00	0.00	5,890.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,200.0	0.00	0.00	5,990.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,090.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,190.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,500.0	0.00	0.00	6,290.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,390.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well SD Federal 24-9
Company:	Entek GRB, Inc	TVD Reference:	WELL @ 7062.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 7062.0ft (Original Well Elev)
Site:	Sec. 24-T12N-89W	North Reference:	True
Well:	SD Federal 24-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,700.0	0.00	0.00	6,490.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,590.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
6,900.0	0.00	0.00	6,690.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,790.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,100.0	0.00	0.00	6,890.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,200.0	0.00	0.00	6,990.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,300.0	0.00	0.00	7,090.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,190.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,500.0	0.00	0.00	7,290.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,390.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,700.0	0.00	0.00	7,490.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,800.0	0.00	0.00	7,590.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
7,900.0	0.00	0.00	7,690.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,790.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,100.0	0.00	0.00	7,890.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,200.0	0.00	0.00	7,990.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,300.0	0.00	0.00	8,090.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,400.0	0.00	0.00	8,190.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,470.0	0.00	0.00	8,260.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
Frontier									
8,500.0	0.00	0.00	8,290.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,600.0	0.00	0.00	8,390.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,700.0	0.00	0.00	8,490.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
8,710.0	0.00	0.00	8,500.0	-1,230.1	-294.0	1,264.7	0.00	0.00	0.00
TD = 8710' MD - 4 1/2" - SD Federal 24-9DL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SD Federal 24-9DL	0.00	0.00	8,500.0	-1,230.1	-294.0	1,603,559.95	2,497,373.05	40° 58' 33.488 N	107° 19' 13.046 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,270.8	1,250.0	9 5/8"	9-5/8	12-1/4	
5,715.5	5,550.0	7"	7	9-3/4	
8,665.5	8,500.0	4 1/2"	4-1/2	6-1/4	



Crescent Directional Drilling, LP

Planning Report

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well SD Federal 24-9
Company:	Entek GRB, Inc	TVD Reference:	WELL @ 7062.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 7062.0ft (Original Well Elev)
Site:	Sec. 24-T12N-89W	North Reference:	True
Well:	SD Federal 24-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,604.4	2,532.0	Cherokee Crk		0.00		
6,017.5	5,852.0	Alpha Sill		0.00		
2,263.2	2,204.0	Iles		0.00		
4,243.9	4,108.0	Cow Crk		0.00		
2,507.7	2,439.0	Hatfield		0.00		
1,066.9	1,054.0	Trout Creek		0.00		
4,764.7	4,609.0	Shannon		0.00		
8,425.5	8,260.0	Frontier		0.00		
123.0	123.0	Almond		0.00		
3,259.8	3,162.0	Deep Crk		0.00		
5,765.5	5,600.0	Niobrara		0.00		
740.2	737.0	Darling		0.00		
2,367.2	2,304.0	DFS		0.00		
537.8	537.0	Pioneer		0.00		
973.3	964.0	BWF		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,350.0	1,350.0	0.0	0.0	KOP 3/100'
2,032.4	2,018.0	-117.3	-28.0	EOB Hold D20.47eg
4,786.4	4,598.0	-1,054.1	-251.9	Start Drop 2/100'
5,810.0	5,600.0	-1,230.1	-294.0	EOD
8,710.0	8,500.0	-1,230.1	-294.0	TD = 8710' MD