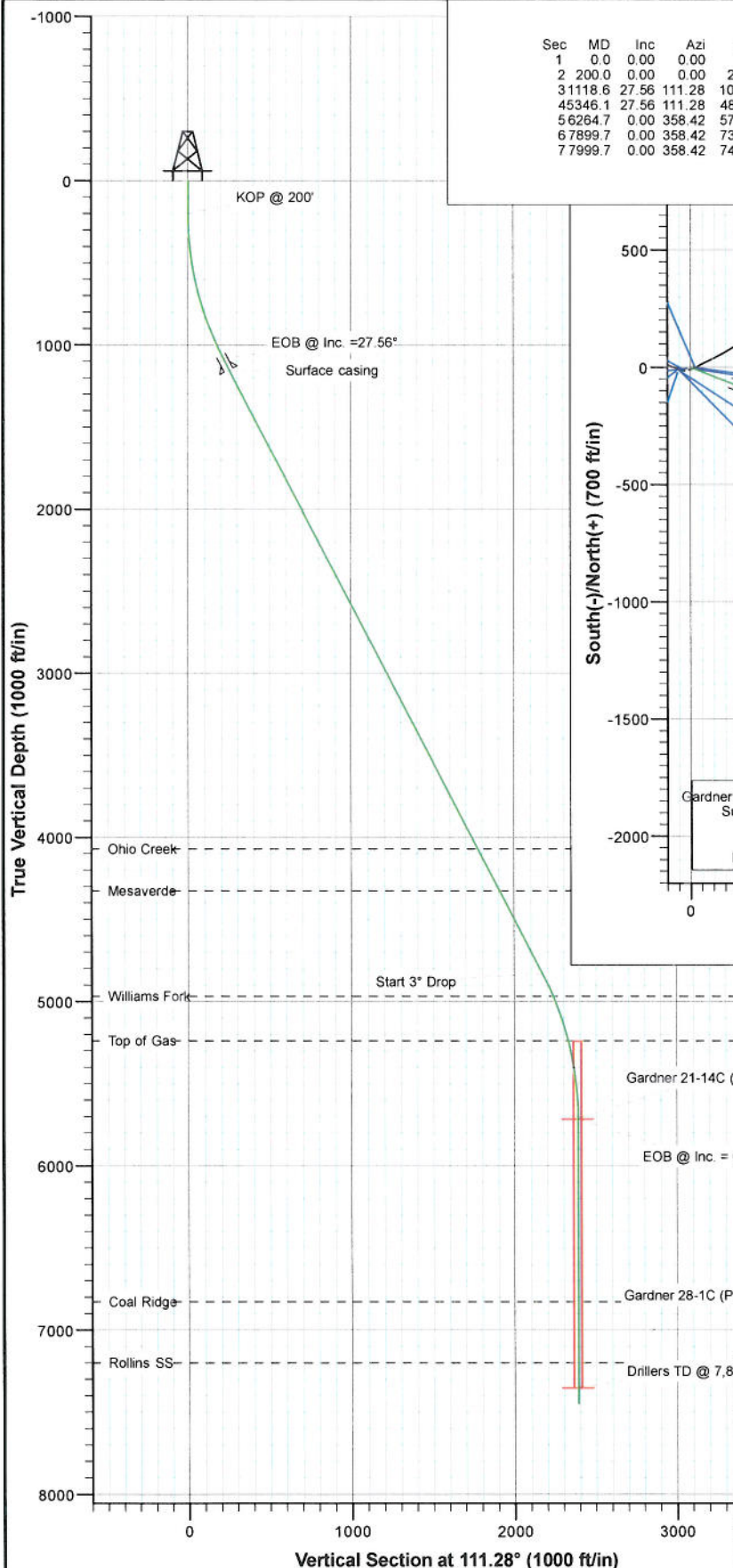




Project: S. Piceance (Parachute)  
 Site: NENW Sec28-T7S-R95W (PC-28)  
 Well: Gardner Federal 28-1C (was Gardner 21-14C) (PC28)  
 Wellbore: DD  
 Plan: Plan #3

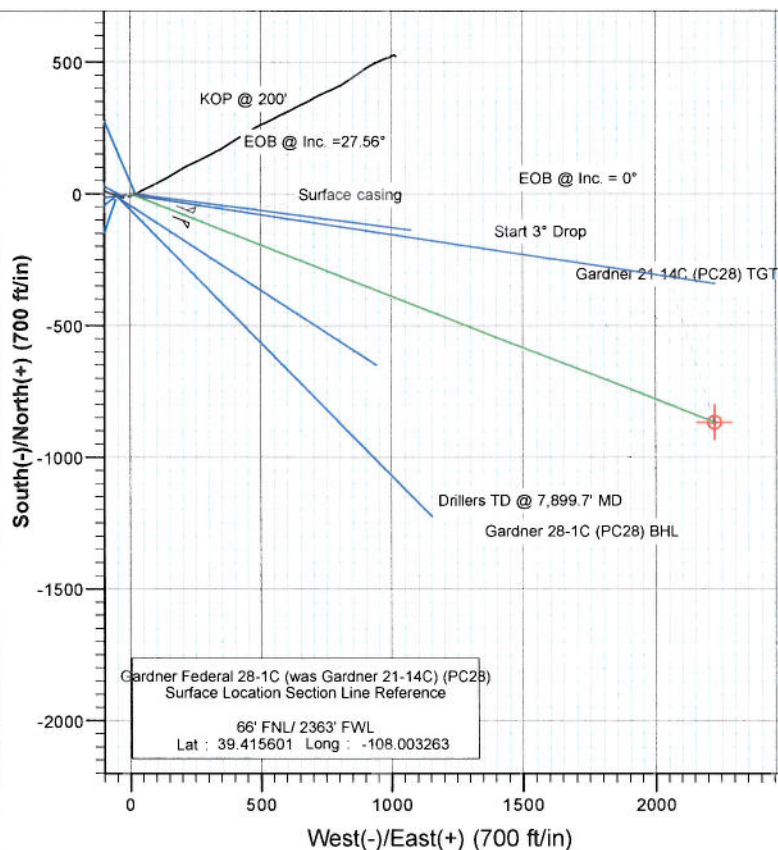


CATHEDRAL



#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1118.6	27.56	111.28	1083.6	-78.6	201.9	3.00	111.28	216.7	Gardner 21-14C (PC28) TGT
4	4534.6	27.56	111.28	4831.4	-788.5	2024.4	0.00	0.00	2172.6	Gardner 28-1C (PC28) BHL
5	56264.7	0.00	358.42	5715.0	-867.1	2226.4	3.00	180.00	2389.3	
6	7899.7	0.00	358.42	7350.0	-867.1	2226.4	0.00	358.42	2389.3	
7	7999.7	0.00	358.42	7450.0	-867.1	2226.4	0.00	358.42	2389.3	



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4072.0	4489.5	Ohio Creek
4327.0	4777.1	Mesaverde
4968.0	5497.2	Williams Fork
5240.0	5784.7	Top of Gas
6828.0	7377.7	Coal Ridge
7200.0	7749.7	Rollins SS



Azimuths to True North  
 Magnetic North: 10.39°

Magnetic Field  
 Strength: 52290.7nT  
 Dip Angle: 65.70°  
 Date: 11/18/2010  
 Model: IGRF200510

Plan #3  
 Gardner Federal 28-1C (was Gardner 21-14C) (PC28)  
 115XXX; SC

KBE @ 6442.0ft (Original Well Elev)  
 North American Datum 1983  
 Well Gardner Federal 28-1C (was Gardner 21-14C) (PC28), True North

Target	Azimuth	Origin Type	N/S		
Gardner 28-1C (PC28) BHL	111.28	Slot	0.0		
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Gardner 21-14C (PC28) TGT	5715.0	-867.1	2226.4	39.413220	-107.995383
Gardner 28-1C (PC28) BHL	7350.0	-867.1	2226.4	39.413220	-107.995383

# Cathedral Energy Services

## Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Gardner Federal 28-1C (was Gardner 21-14C)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 6442.0ft (Original Well Elev)
Site:	NENW Sec28-T7S-R95W (PC28)	MD Reference:	KBE @ 6442.0ft (Original Well Elev)
Well:	Gardner Federal 28-1C (was Gardner 21-14C)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	USA EDM 5000 Multi Users DB

Project	S. Piceance (Parachute), Garfield 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	NENW Sec28-T7S-R95W (PC28)				
Site Position:		Northing:	1,585,994.80 ft	Latitude:	39.415560
From:	Lat/Long	Easting:	2,292,840.18 ft	Longitude:	-108.003350
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.58 °

Well	Gardner Federal 28-1C (was Gardner 21-14C) (PC28)					
Well Position	+N/-S	0.0 ft	Northing:	1,586,009.04 ft	Latitude:	39.415601
	+E/-W	0.0 ft	Easting:	2,292,865.16 ft	Longitude:	-108.003263
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,420.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/18/2010	10.39	65.70	52,291

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	111.28

Survey Tool Program	Date 9/28/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,998.9	Plan #3 (DD)	MWD	Geolink MWD

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)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	3.00	111.28	300.0	-0.9	2.4	2.6	3.00	3.00	
400.0	6.00	111.28	399.6	-3.8	9.7	10.5	3.00	3.00	
500.0	9.00	111.28	498.8	-8.5	21.9	23.5	3.00	3.00	
600.0	12.00	111.28	597.1	-15.1	38.9	41.7	3.00	3.00	
700.0	15.00	111.28	694.3	-23.6	60.6	65.1	3.00	3.00	
800.0	18.00	111.28	790.2	-33.9	87.1	93.5	3.00	3.00	
900.0	21.00	111.28	884.4	-46.0	118.2	126.9	3.00	3.00	
1,000.0	24.00	111.28	976.8	-59.9	153.9	165.1	3.00	3.00	
1,100.0	27.00	111.28	1,067.1	-75.5	194.0	208.2	3.00	3.00	
1,118.6	27.56	111.28	1,083.6	-78.6	201.9	216.7	3.00	3.00	EOB @ Inc. =27.56°



# Cathedral Energy Services

## Survey Report

Company: EnCana Oil & Gas (USA) Inc  
 Project: S. Piceance (Parachute)  
 Site: NENW Sec28-T7S-R95W (PC28)  
 Well: Gardner Federal 28-1C (was Gardner 21-14C)  
 Wellbore: (PC28)  
 Design: Plan #3

Local Co-ordinate Reference: Well Gardner Federal 28-1C (was Gardner 21-14C)  
 TVD Reference: KBE @ 6442.0ft (Original Well Elev)  
 MD Reference: KBE @ 6442.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: USA EDM 5000 Multi Users DB

### 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)	Formations / Comments
1,199.0	27.56	111.28	1,154.9	-92.1	236.6	253.9	0.00	0.00	Surface casing
1,200.0	27.56	111.28	1,155.8	-92.3	237.0	254.3	0.00	0.00	
1,300.0	27.56	111.28	1,244.4	-109.1	280.1	300.6	0.00	0.00	
1,400.0	27.56	111.28	1,333.1	-125.9	323.2	346.9	0.00	0.00	
1,500.0	27.56	111.28	1,421.7	-142.7	366.3	393.1	0.00	0.00	
1,600.0	27.56	111.28	1,510.4	-159.5	409.5	439.4	0.00	0.00	
1,700.0	27.56	111.28	1,599.0	-176.3	452.6	485.7	0.00	0.00	
1,800.0	27.56	111.28	1,687.7	-193.1	495.7	531.9	0.00	0.00	
1,900.0	27.56	111.28	1,776.3	-209.8	538.8	578.2	0.00	0.00	
2,000.0	27.56	111.28	1,865.0	-226.6	581.9	624.5	0.00	0.00	
2,100.0	27.56	111.28	1,953.6	-243.4	625.0	670.7	0.00	0.00	
2,200.0	27.56	111.28	2,042.3	-260.2	668.1	717.0	0.00	0.00	
2,300.0	27.56	111.28	2,130.9	-277.0	711.2	763.3	0.00	0.00	
2,400.0	27.56	111.28	2,219.6	-293.8	754.3	809.5	0.00	0.00	
2,500.0	27.56	111.28	2,308.2	-310.6	797.5	855.8	0.00	0.00	
2,600.0	27.56	111.28	2,396.9	-327.4	840.6	902.1	0.00	0.00	
2,700.0	27.56	111.28	2,485.6	-344.2	883.7	948.3	0.00	0.00	
2,800.0	27.56	111.28	2,574.2	-361.0	926.8	994.6	0.00	0.00	
2,900.0	27.56	111.28	2,662.9	-377.8	969.9	1,040.9	0.00	0.00	
3,000.0	27.56	111.28	2,751.5	-394.6	1,013.0	1,087.1	0.00	0.00	
3,100.0	27.56	111.28	2,840.2	-411.3	1,056.1	1,133.4	0.00	0.00	
3,200.0	27.56	111.28	2,928.8	-428.1	1,099.2	1,179.7	0.00	0.00	
3,300.0	27.56	111.28	3,017.5	-444.9	1,142.3	1,225.9	0.00	0.00	
3,400.0	27.56	111.28	3,106.1	-461.7	1,185.5	1,272.2	0.00	0.00	
3,500.0	27.56	111.28	3,194.8	-478.5	1,228.6	1,318.5	0.00	0.00	
3,600.0	27.56	111.28	3,283.4	-495.3	1,271.7	1,364.7	0.00	0.00	
3,700.0	27.56	111.28	3,372.1	-512.1	1,314.8	1,411.0	0.00	0.00	
3,800.0	27.56	111.28	3,460.7	-528.9	1,357.9	1,457.3	0.00	0.00	
3,900.0	27.56	111.28	3,549.4	-545.7	1,401.0	1,503.5	0.00	0.00	
4,000.0	27.56	111.28	3,638.1	-562.5	1,444.1	1,549.8	0.00	0.00	
4,100.0	27.56	111.28	3,726.7	-579.3	1,487.2	1,596.1	0.00	0.00	
4,200.0	27.56	111.28	3,815.4	-596.0	1,530.3	1,642.3	0.00	0.00	
4,300.0	27.56	111.28	3,904.0	-612.8	1,573.5	1,688.6	0.00	0.00	
4,400.0	27.56	111.28	3,992.7	-629.6	1,616.6	1,734.9	0.00	0.00	
4,489.5	27.56	111.28	4,072.0	-644.7	1,655.2	1,776.3	0.00	0.00	
4,500.0	27.56	111.28	4,081.3	-646.4	1,659.7	1,781.1	0.00	0.00	
4,600.0	27.56	111.28	4,170.0	-663.2	1,702.8	1,827.4	0.00	0.00	
4,700.0	27.56	111.28	4,258.6	-680.0	1,745.9	1,873.7	0.00	0.00	
4,777.1	27.56	111.28	4,327.0	-693.0	1,779.2	1,909.3	0.00	0.00	
4,800.0	27.56	111.28	4,347.3	-696.8	1,789.0	1,919.9	0.00	0.00	
4,900.0	27.56	111.28	4,435.9	-713.6	1,832.1	1,966.2	0.00	0.00	
5,000.0	27.56	111.28	4,524.6	-730.4	1,875.2	2,012.5	0.00	0.00	
5,100.0	27.56	111.28	4,613.2	-747.2	1,918.4	2,058.7	0.00	0.00	
5,200.0	27.56	111.28	4,701.9	-764.0	1,961.5	2,105.0	0.00	0.00	
5,300.0	27.56	111.28	4,790.5	-780.8	2,004.6	2,151.3	0.00	0.00	
5,346.1	27.56	111.28	4,831.4	-788.5	2,024.4	2,172.6	0.00	0.00	
5,400.0	25.94	111.28	4,879.5	-797.3	2,047.1	2,196.8	3.00	-3.00	Start 3° Drop
5,497.2	23.02	111.28	4,968.0	-811.9	2,084.6	2,237.1	3.00	-3.00	Williams Fork
5,500.0	22.94	111.28	4,970.6	-812.3	2,085.6	2,238.2	3.00	-3.00	
5,600.0	19.94	111.28	5,063.6	-825.6	2,119.7	2,274.8	3.00	-3.00	
5,700.0	16.94	111.28	5,158.5	-837.1	2,149.1	2,306.4	3.00	-3.00	
5,784.7	14.40	111.28	5,240.0	-845.4	2,170.4	2,329.3	3.00	-3.00	
5,800.0	13.94	111.28	5,254.9	-846.7	2,173.9	2,333.0	3.00	-3.00	

# Cathedral Energy Services

## Survey Report

**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** S. Piceance (Parachute)  
**Site:** NENW Sec28-T7S-R95W (PC28)  
**Well:** Gardner Federal 28-1C (was Gardner 21-14C)  
**Wellbore:** (PC28)  
**Design:** Plan #3

**Local Co-ordinate Reference:** Well Gardner Federal 28-1C (was Gardner 21-14C)  
**TVD Reference:** KBE @ 6442.0ft (Original Well Elev)  
**MD Reference:** KBE @ 6442.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** USA EDM 5000 Multi Users DB

### 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)	Formations / Comments
5,900.0	10.94	111.28	5,352.5	-854.5	2,194.0	2,354.6	3.00	-3.00	
6,000.0	7.94	111.28	5,451.2	-860.5	2,209.3	2,371.0	3.00	-3.00	
6,100.0	4.94	111.28	5,550.5	-864.6	2,219.7	2,382.2	3.00	-3.00	
6,200.0	1.94	111.28	5,650.3	-866.7	2,225.3	2,388.2	3.00	-3.00	
6,264.7	0.00	358.42	5,715.0	-867.1	2,226.4	2,389.3	3.00	-3.00	EOB @ Inc. = 0°
6,300.0	0.00	358.42	5,750.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,400.0	0.00	358.42	5,850.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,500.0	0.00	358.42	5,950.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,600.0	0.00	358.42	6,050.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,700.0	0.00	358.42	6,150.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,800.0	0.00	358.42	6,250.3	-867.1	2,226.4	2,389.3	0.00	0.00	
6,900.0	0.00	358.42	6,350.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,000.0	0.00	358.42	6,450.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,100.0	0.00	358.42	6,550.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,200.0	0.00	358.42	6,650.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,300.0	0.00	358.42	6,750.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,377.7	0.00	358.42	6,828.0	-867.1	2,226.4	2,389.3	0.00	0.00	Coal Ridge
7,400.0	0.00	358.42	6,850.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,500.0	0.00	358.42	6,950.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,600.0	0.00	358.42	7,050.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,700.0	0.00	358.42	7,150.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,749.7	0.00	358.42	7,200.0	-867.1	2,226.4	2,389.3	0.00	0.00	Rollins SS
7,800.0	0.00	358.42	7,250.3	-867.1	2,226.4	2,389.3	0.00	0.00	
7,899.7	0.00	358.42	7,350.0	-867.1	2,226.4	2,389.3	0.00	0.00	Drillers TD @ 7,899.7' MD
7,999.7	0.00	358.42	7,450.0	-867.1	2,226.4	2,389.3	0.00	0.00	Permit TD @ 7,999.7' MD

# Cathedral Energy Services

## Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Gardner Federal 28-1C (was Gardner 21-14C)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 6442.0ft (Original Well Elev)
Site:	NENW Sec28-T7S-R95W (PC28)	MD Reference:	KBE @ 6442.0ft (Original Well Elev)
Well:	Gardner Federal 28-1C (was Gardner 21-14C)	North Reference:	True
Wellbore:	PC28	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	USA EDM 5000 Multi Users DB

### 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									
Gardner 28-1C (PC28) E	0.00	358.43	7,350.0	-867.1	2,226.4	1,585,080.90	2,295,066.78	39.413220	-107.995383
- plan hits target center									
- Circle (radius 25.0)									
Gardner 21-14C (PC28)	0.00	358.43	5,715.0	-867.1	2,226.4	1,585,080.90	2,295,066.78	39.413220	-107.995383
- plan hits target center									
- Point									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,199.0	1,154.9	Surface casing	8.625	12.250

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,489.5	4,072.0	Ohio Creek		0.00	
4,777.1	4,327.0	Mesaverde		0.00	
5,497.2	4,968.0	Williams Fork		0.00	
5,784.7	5,240.0	Top of Gas		0.00	
7,377.7	6,828.0	Coal Ridge		0.00	
7,749.7	7,200.0	Rollins SS		0.00	

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,118.6	1,083.6	-78.6	201.9	EOB @ Inc. =27.56°
5,346.1	4,831.4	-788.5	2,024.4	Start 3° Drop
6,264.7	5,715.0	-867.1	2,226.4	EOB @ Inc. = 0°
7,899.7	7,350.0	-867.1	2,226.4	Drillers TD @ 7,899.7' MD
7,999.7	7,450.0	-867.1	2,226.4	Permit TD @ 7,999.7' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_