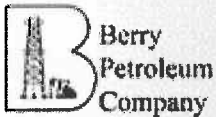
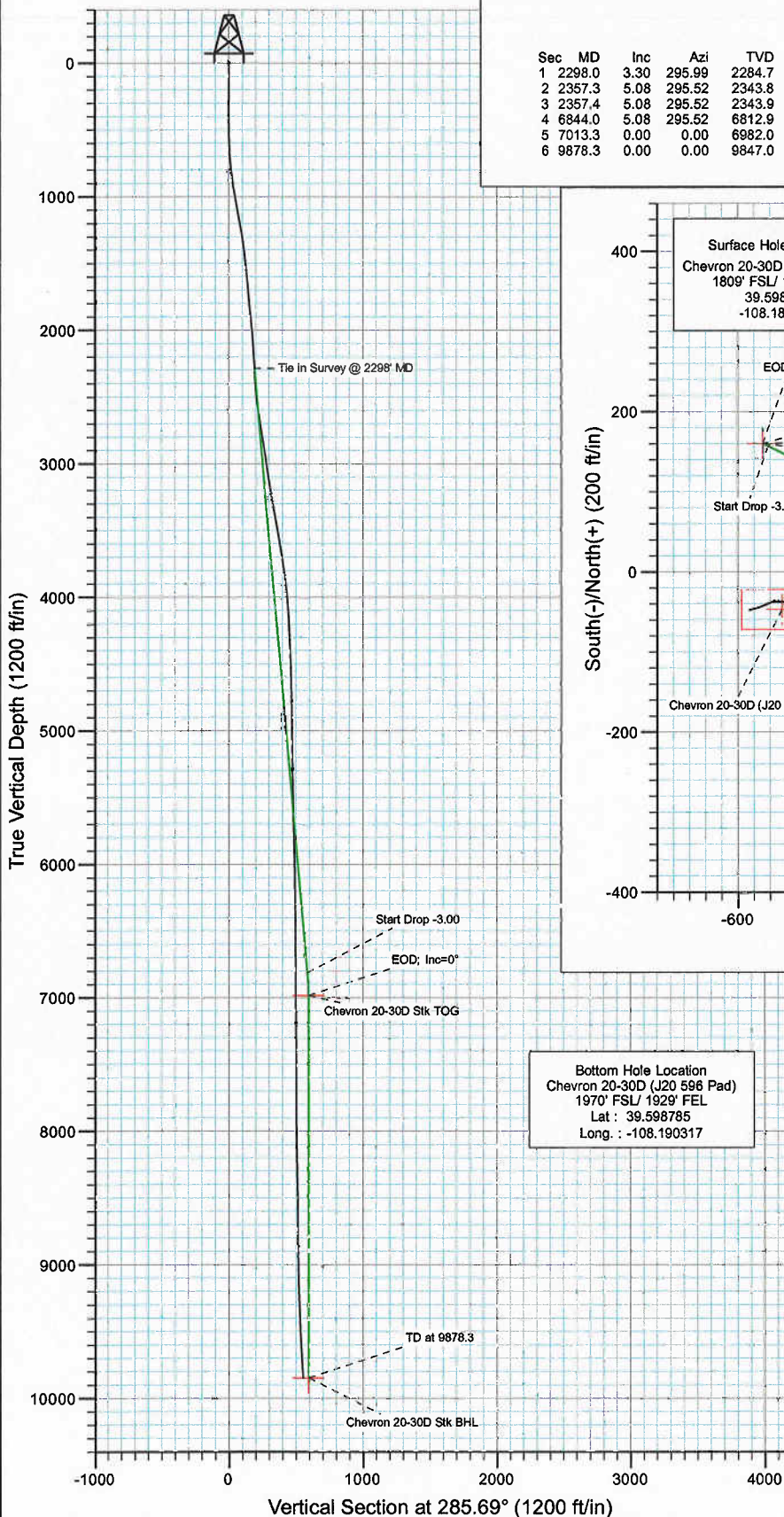


045-12769-01

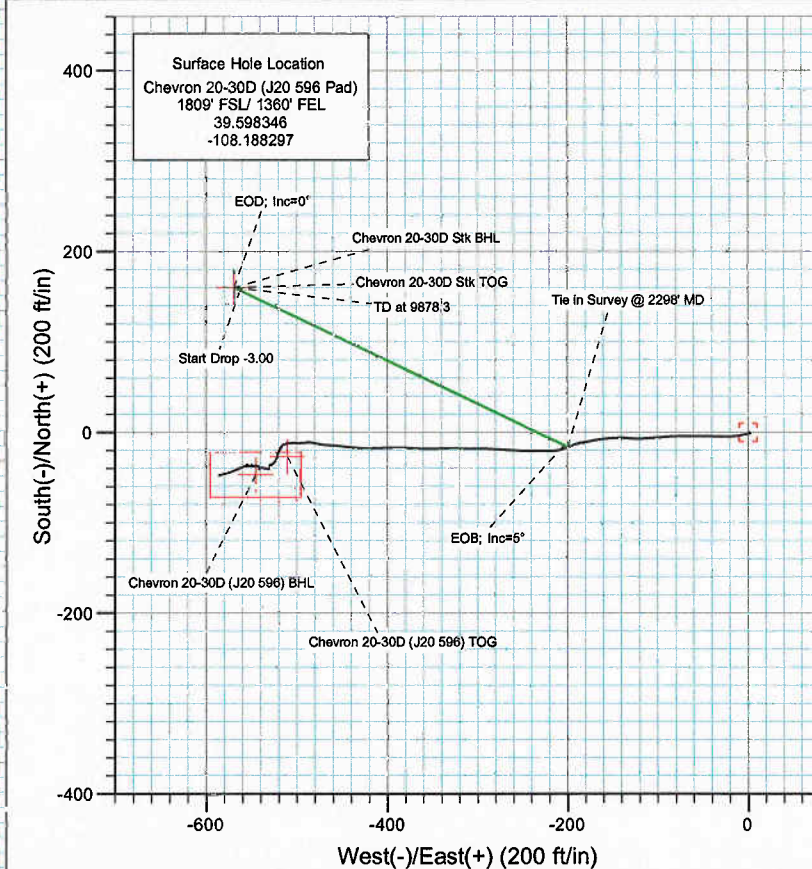


Project: Garfield County
 Site: NWSE S20-T5S-R96W (Chevron J20 596)
 Well: Chevron 20-30D (J20 596 Pad)
 Wellbore: Stk
 Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	2298.0	3.30	295.99	2284.7	-16.4	-199.9	0.00	0.00	188.1	
2	2357.3	5.08	295.52	2343.8	-14.5	-203.9	3.00	-1.34	192.3	
3	2357.4	5.08	295.52	2343.9	-14.5	-203.9	3.00	16.97	192.3	
4	6844.0	5.08	295.52	6812.9	156.7	-562.4	0.00	0.00	583.9	
5	7013.3	0.00	0.00	6982.0	159.9	-569.2	3.00	180.00	591.3	Chevron 20-30D Stk TOG
6	9878.3	0.00	0.00	9847.0	159.9	-569.2	0.00	0.00	591.3	Chevron 20-30D Stk BHL



Bottom Hole Location
 Chevron 20-30D (J20 596 Pad)
 1970' FSL/ 1929' FEL
 Lat : 39.598785
 Long. : -108.190317



Azimuths to True North
 Magnetic North: 10.59°

Magnetic Field
 Strength: 52419.3nT
 Dip Angle: 65.83°
 Date: 3/16/2010
 Model: IGRF200510

DESIGN DETAILS: Plan #1

KBE @ 8005.0ft (Patterson #302)

Target	Azimuth	Origin	N/S	E/W	From TVD
Chevron 20-30D Stk BHL	285.69	Slot	0.0	0.0	0.0

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well Chevron 20-30D (J20 596 Pad)
Company: Berry Petroleum Company (NAD 83)	TVD Reference: KBE @ 8005.0ft (Patterson #302)
Project: Garfield County	MD Reference: KBE @ 8005.0ft (Patterson #302)
Site: NWSE S20-T5S-R96W (Chevron J20 596)	North Reference: True
Well: Chevron 20-30D (J20 596 Pad)	Survey Calculation Method: Minimum Curvature
Wellbore: Stk	
Design: Plan #1	

Project: Garfield County		
Map System: US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum: North American Datum 1983		
Map Zone: Colorado Central Zone		

Site: NWSE S20-T5S-R96W (Chevron J20 596)			
Site Position:	Northing: 1,654,098.24 ft	Latitude: 39.598520	
From: Lat/Long	Easting: 2,242,645.04 ft	Longitude: -108.188071	
Position Uncertainty: 0.0 ft	Slot Radius: 13.200 in	Grid Convergence: -1.70 °	

Well: Chevron 20-30D (J20 596 Pad)			
Well Position	Northing: 1,654,036.76 ft	Latitude: 39.598346	
+N/-S 0.0 ft	Easting: 2,242,579.51 ft	Longitude: -108.188297	
+E/-W 0.0 ft	Wellhead Elevation: ft	Ground Level: 7,990.0 ft	
Position Uncertainty 0.0 ft			

Wellbore: Stk					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/16/2010	10.59	65.83	52,419

Design: Plan #1				
Audit Notes:				
Version:	Phase: PLAN	Tie On Depth: 2,298.0		
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	285.69

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
2,298.0	3.30	241.20	2,284.7	-16.4	-199.9	0.00	0.00	0.00	0.00	
2,396.3	3.12	295.85	2,382.9	-16.6	-204.8	3.00	-0.18	55.57	120.40	
2,396.6	3.13	295.85	2,383.1	-16.6	-204.8	3.00	3.00	-0.37	-0.38	
9,767.3	3.13	295.85	9,742.8	158.7	-566.7	0.00	0.00	0.00	0.00	
9,871.5	0.00	0.00	9,847.0	159.9	-569.2	3.00	-3.00	0.00	180.00	Chevron 20-30D Stk I

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: Berry Petroleum Company (NAD 83)
Project: Garfield County
Site: NWSE S20-T5S-R96W (Chevron J20 596)
Well: Chevron 20-30D (J20 596 Pad)
Wellbore: Stk
Design: Plan #1

Local Co-ordinate Reference: Well Chevron 20-30D (J20 596 Pad)
TVD Reference: KBE @ 8005.0ft (Patterson #302)
MD Reference: KBE @ 8005.0ft (Patterson #302)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)	Comments / Formations
2,298.0	3.30	241.20	2,284.7	-16.4	-199.9	188.1	0.00	0.00	Tie in Survey @ 2298' MD
2,300.0	3.27	242.11	2,286.7	-16.5	-200.1	188.1	3.00	-1.50	
2,396.3	3.12	295.85	2,382.9	-16.6	-204.8	192.7	3.00	-0.16	
2,396.6	3.13	295.85	2,383.1	-16.6	-204.8	192.7	3.00	3.00	
2,400.0	3.13	295.85	2,386.5	-16.5	-205.0	192.9	0.00	0.00	
2,500.0	3.13	295.85	2,486.4	-14.1	-209.9	198.3	0.00	0.00	
2,600.0	3.13	295.85	2,586.2	-11.8	-214.8	203.6	0.00	0.00	
2,700.0	3.13	295.85	2,686.1	-9.4	-219.7	209.0	0.00	0.00	
2,800.0	3.13	295.85	2,785.9	-7.0	-224.7	214.4	0.00	0.00	
2,900.0	3.13	295.85	2,885.8	-4.6	-229.6	219.8	0.00	0.00	
3,000.0	3.13	295.85	2,985.6	-2.3	-234.5	225.1	0.00	0.00	
3,100.0	3.13	295.85	3,085.5	0.1	-239.4	230.5	0.00	0.00	
3,200.0	3.13	295.85	3,185.3	2.5	-244.3	235.9	0.00	0.00	
3,300.0	3.13	295.85	3,285.2	4.9	-249.2	241.2	0.00	0.00	
3,400.0	3.13	295.85	3,385.0	7.3	-254.1	246.6	0.00	0.00	
3,500.0	3.13	295.85	3,484.9	9.6	-259.0	252.0	0.00	0.00	
3,600.0	3.13	295.85	3,584.7	12.0	-263.9	257.3	0.00	0.00	
3,700.0	3.13	295.85	3,684.6	14.4	-268.8	262.7	0.00	0.00	
3,800.0	3.13	295.85	3,784.4	16.8	-273.7	268.1	0.00	0.00	
3,900.0	3.13	295.85	3,884.3	19.1	-278.6	273.4	0.00	0.00	
4,000.0	3.13	295.85	3,984.1	21.5	-283.6	278.8	0.00	0.00	
4,100.0	3.13	295.85	4,084.0	23.9	-288.5	284.2	0.00	0.00	
4,200.0	3.13	295.85	4,183.8	26.3	-293.4	289.5	0.00	0.00	
4,300.0	3.13	295.85	4,283.7	28.7	-298.3	294.9	0.00	0.00	
4,400.0	3.13	295.85	4,383.5	31.0	-303.2	300.3	0.00	0.00	
4,500.0	3.13	295.85	4,483.4	33.4	-308.1	305.7	0.00	0.00	
4,600.0	3.13	295.85	4,583.3	35.8	-313.0	311.0	0.00	0.00	
4,700.0	3.13	295.85	4,683.1	38.2	-317.9	316.4	0.00	0.00	
4,800.0	3.13	295.85	4,783.0	40.6	-322.8	321.8	0.00	0.00	
4,900.0	3.13	295.85	4,882.8	42.9	-327.7	327.1	0.00	0.00	
5,000.0	3.13	295.85	4,982.7	45.3	-332.6	332.5	0.00	0.00	
5,100.0	3.13	295.85	5,082.5	47.7	-337.6	337.9	0.00	0.00	
5,200.0	3.13	295.85	5,182.4	50.1	-342.5	343.2	0.00	0.00	
5,300.0	3.13	295.85	5,282.2	52.4	-347.4	348.6	0.00	0.00	
5,400.0	3.13	295.85	5,382.1	54.8	-352.3	354.0	0.00	0.00	
5,500.0	3.13	295.85	5,481.9	57.2	-357.2	359.3	0.00	0.00	
5,600.0	3.13	295.85	5,581.8	59.6	-362.1	364.7	0.00	0.00	
5,700.0	3.13	295.85	5,681.6	62.0	-367.0	370.1	0.00	0.00	
5,800.0	3.13	295.85	5,781.5	64.3	-371.9	375.5	0.00	0.00	
5,900.0	3.13	295.85	5,881.3	66.7	-376.8	380.8	0.00	0.00	
6,000.0	3.13	295.85	5,981.2	69.1	-381.7	386.2	0.00	0.00	
6,100.0	3.13	295.85	6,081.0	71.5	-386.6	391.6	0.00	0.00	
6,200.0	3.13	295.85	6,180.9	73.8	-391.5	396.9	0.00	0.00	
6,300.0	3.13	295.85	6,280.7	76.2	-396.5	402.3	0.00	0.00	
6,400.0	3.13	295.85	6,380.6	78.6	-401.4	407.7	0.00	0.00	
6,500.0	3.13	295.85	6,480.4	81.0	-406.3	413.0	0.00	0.00	
6,600.0	3.13	295.85	6,580.3	83.4	-411.2	418.4	0.00	0.00	
6,700.0	3.13	295.85	6,680.1	85.7	-416.1	423.8	0.00	0.00	
6,800.0	3.13	295.85	6,780.0	88.1	-421.0	429.1	0.00	0.00	
6,900.0	3.13	295.85	6,879.8	90.5	-425.9	434.5	0.00	0.00	
7,000.0	3.13	295.85	6,979.7	92.9	-430.8	439.9	0.00	0.00	
7,100.0	3.13	295.85	7,079.5	95.3	-435.7	445.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB Company: Berry Petroleum Company (NAD 83) Project: Garfield County Site: NWSE S20-T5S-R96W (Chevron J20 596) Well: Chevron 20-30D (J20 596 Pad) Wellbore: Stk Design: Plan #1	Local Co-ordinate Reference: Well Chevron 20-30D (J20 596 Pad) TVD Reference: KBE @ 8005.0ft (Patterson #302) MD Reference: KBE @ 8005.0ft (Patterson #302) North Reference: True Survey Calculation Method: Minimum Curvature	
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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)	Comments / Formations
7,200.0	3.13	295.85	7,179.4	97.6	-440.6	450.6	0.00	0.00	
7,300.0	3.13	295.85	7,279.2	100.0	-445.5	456.0	0.00	0.00	
7,400.0	3.13	295.85	7,379.1	102.4	-450.5	461.4	0.00	0.00	
7,500.0	3.13	295.85	7,478.9	104.8	-455.4	466.7	0.00	0.00	
7,600.0	3.13	295.85	7,578.8	107.1	-460.3	472.1	0.00	0.00	
7,700.0	3.13	295.85	7,678.6	109.5	-465.2	477.5	0.00	0.00	
7,800.0	3.13	295.85	7,778.5	111.9	-470.1	482.8	0.00	0.00	
7,900.0	3.13	295.85	7,878.3	114.3	-475.0	488.2	0.00	0.00	
8,000.0	3.13	295.85	7,978.2	116.7	-479.9	493.6	0.00	0.00	
8,100.0	3.13	295.85	8,078.0	119.0	-484.8	498.9	0.00	0.00	
8,200.0	3.13	295.85	8,177.9	121.4	-489.7	504.3	0.00	0.00	
8,300.0	3.13	295.85	8,277.7	123.8	-494.6	509.7	0.00	0.00	
8,400.0	3.13	295.85	8,377.6	126.2	-499.5	515.0	0.00	0.00	
8,500.0	3.13	295.85	8,477.4	128.5	-504.4	520.4	0.00	0.00	
8,600.0	3.13	295.85	8,577.3	130.9	-509.4	525.8	0.00	0.00	
8,700.0	3.13	295.85	8,677.1	133.3	-514.3	531.2	0.00	0.00	
8,800.0	3.13	295.85	8,777.0	135.7	-519.2	536.5	0.00	0.00	
8,900.0	3.13	295.85	8,876.9	138.1	-524.1	541.9	0.00	0.00	
9,000.0	3.13	295.85	8,976.7	140.4	-529.0	547.3	0.00	0.00	
9,100.0	3.13	295.85	9,076.6	142.8	-533.9	552.6	0.00	0.00	
9,200.0	3.13	295.85	9,176.4	145.2	-538.8	558.0	0.00	0.00	
9,300.0	3.13	295.85	9,276.3	147.6	-543.7	563.4	0.00	0.00	
9,400.0	3.13	295.85	9,376.1	149.9	-548.6	568.7	0.00	0.00	
9,500.0	3.13	295.85	9,476.0	152.3	-553.5	574.1	0.00	0.00	
9,600.0	3.13	295.85	9,575.8	154.7	-558.4	579.5	0.00	0.00	
9,700.0	3.13	295.85	9,675.7	157.1	-563.4	584.8	0.00	0.00	
9,767.3	3.13	295.85	9,742.9	158.7	-566.7	588.5	0.00	0.00	Start Drop -3.00
9,800.0	2.14	295.85	9,775.5	159.3	-568.0	589.9	3.00	-3.00	
9,871.5	0.00	0.00	9,847.0	159.9	-569.2	591.3	3.00	-3.00	Chevron 20-30D Stk BHL

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									
Chevron 20-30D Stk BH	0.00	0.00	9,847.0	159.9	-569.2	1,654,213.46	2,242,015.28	39.598785	-108.190317
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,298.0	2,284.7	-16.4	-199.9	Tie in Survey @ 2298' MD
9,767.3	9,742.8	-16.6	-204.8	Start Drop -3.00
9,871.5	9,847.0	158.7	-566.7	TD at 9871.5