

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_DECHANT 23-1 PAD**

**DECHANT 32-1**

**DECHANT 32-1**

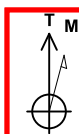
**Plan: DECHANT 32-1 (wp01)**

## **Standard Planning Report**

**18 November, 2010**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_DECHANT 23-1 PAD  
Well: DECHANT 32-1  
Wellbore: DECHANT 32-1  
Section:  
SHL:  
Design: DECHANT 32-1 (wp01)  
Latitude: 40.166036  
Longitude: -104.612482  
GL: 0.00  
KB: WELL @ 4838.00ft (Original Well Elev)



Azimuths to True North  
Magnetic North: 8.84°  
Magnetic Field  
Strength: 53085.9nT  
Dip Angle: 66.91°  
Date: 11/16/2010  
Model: IGRF2010



Weatherford®

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4137.00	4456.16	PK Depth
4377.00	4721.26	SX Depth
6800.00	7315.24	NIO Depth
7087.00	7602.24	CD Depth
7170.00	7685.24	GH Depth

#### WELL DETAILS: DECHANT 32-1

+N/-S	+E/-W	Northing	Ground Level: Easting	0.00 Latitude	Longitude	Slot
0.00	0.00	1304571.22	3248031.86	40.166036	-104.612482	

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

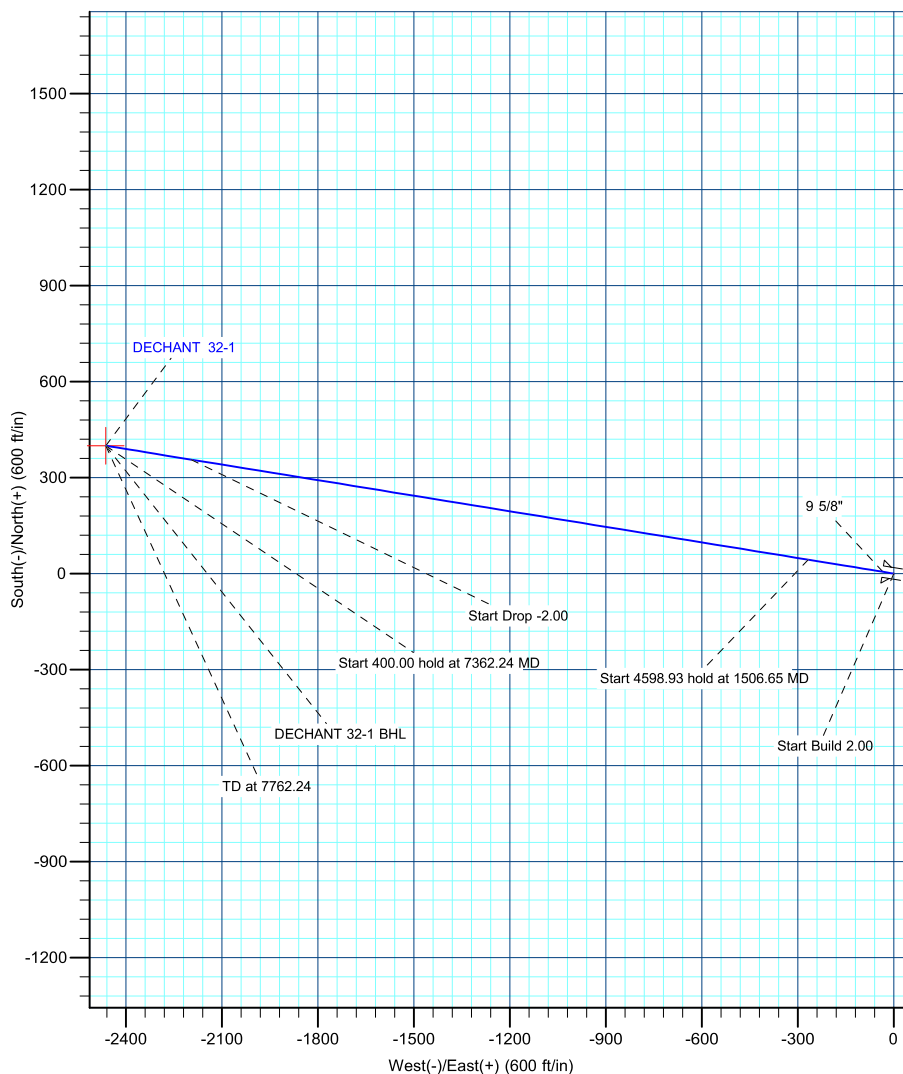
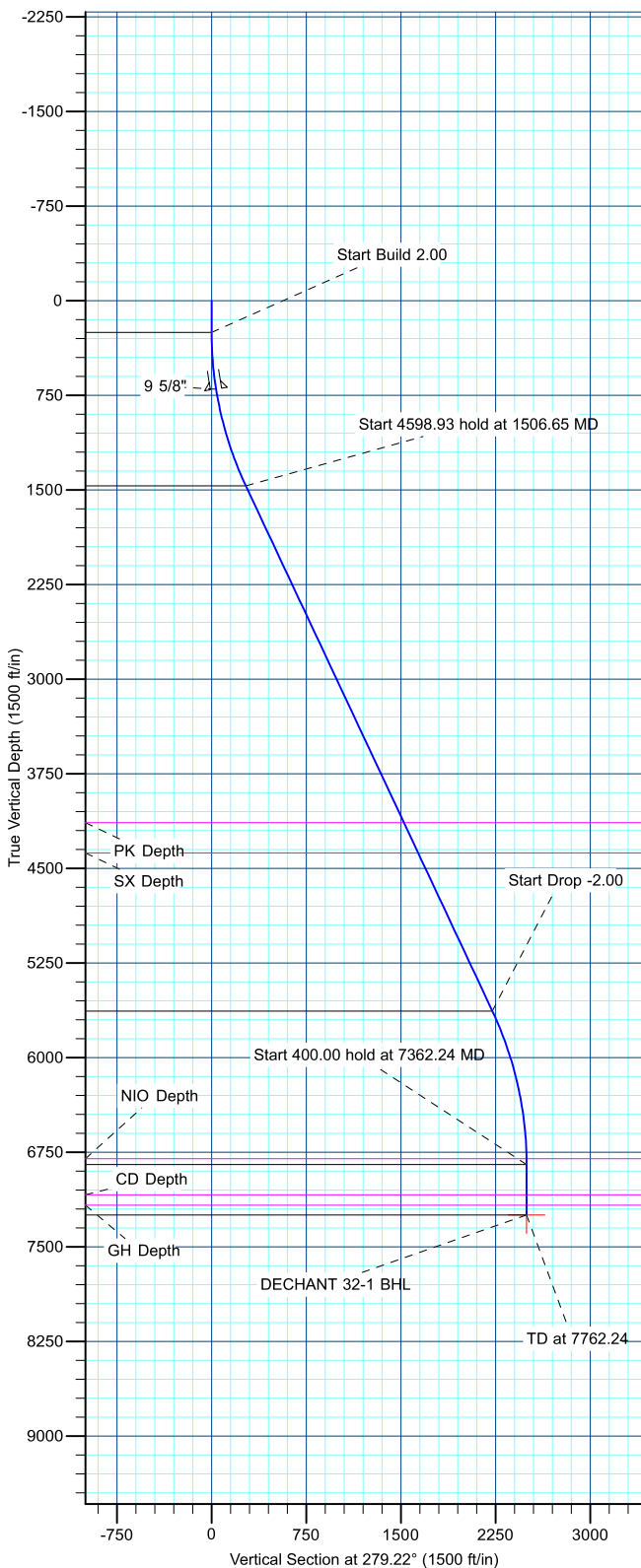
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Point	Shape
DECHANT 32-1 BHL	7247.00	399.75	-2463.50	40.167133	-104.621297		

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1506.65	25.13	279.22	1466.74	43.44	-267.73	2.00	279.22	271.23	
4	6105.58	25.13	279.22	5630.26	356.30	-2195.78	0.00	0.00	2224.50	
5	7362.24	0.00	0.00	6847.00	399.75	-2463.50	2.00	180.00	2495.72	
6	7762.24	0.00	0.00	7247.00	399.75	-2463.50	0.00	0.00	2495.72	DECHANT 32-1 BHL

#### CASING DETAILS

TVD	MD	Name	Size
700.00	701.87	9 5/8"	9-5/8



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well DECHANT 32-1
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Site:</b>	WELD_DECHANT 23-1 PAD	<b>North Reference:</b>	True
<b>Well:</b>	DECHANT 32-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DECHANT 32-1		
<b>Design:</b>	DECHANT 32-1 (wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<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		WELD_DECHANT 23-1 PAD			
Site Position:		Northing:	1,304,551.19 ft	Latitude:	40.165981
From:	Lat/Long	Easting:	3,248,032.06 ft	Longitude:	-104.612482
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.57 °

Well	DECHANT 32-1					
Well Position	+N/-S	20.03 ft	Northing:	1,304,571.22 ft	Latitude:	40.166036
	+E/-W	0.00 ft	Easting:	3,248,031.86 ft	Longitude:	-104.612482
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	0.00 ft

<b>Wellbore</b>	DECHANT 32-1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/16/2010	8.84	66.91	53,086

<b>Design</b>	DECHANT 32-1 (wp01)				
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<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	279.22	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,506.65	25.13	279.22	1,466.74	43.44	-267.73	2.00	2.00	0.00	279.22	
6,105.58	25.13	279.22	5,630.26	356.30	-2,195.78	0.00	0.00	0.00	0.00	
7,362.24	0.00	0.00	6,847.00	399.75	-2,463.50	2.00	-2.00	0.00	180.00	
7,762.24	0.00	0.00	7,247.00	399.75	-2,463.50	0.00	0.00	0.00	0.00	DECHANT 32-1 BH

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well DECHANT 32-1
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Site:</b>	WELD_DECHANT 23-1 PAD	<b>North Reference:</b>	True
<b>Well:</b>	DECHANT 32-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DECHANT 32-1		
<b>Design:</b>	DECHANT 32-1 (wp01)		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
300.00	1.00	279.22	300.00	0.07	-0.43	0.44	2.00	2.00	0.00
400.00	3.00	279.22	399.93	0.63	-3.88	3.93	2.00	2.00	0.00
500.00	5.00	279.22	499.68	1.75	-10.76	10.90	2.00	2.00	0.00
600.00	7.00	279.22	599.13	3.42	-21.08	21.35	2.00	2.00	0.00
700.00	9.00	279.22	698.15	5.65	-34.81	35.27	2.00	2.00	0.00
701.87	9.04	279.22	700.00	5.70	-35.10	35.56	2.00	2.00	0.00
<b>9 5/8"</b>									
800.00	11.00	279.22	796.63	8.43	-51.95	52.63	2.00	2.00	0.00
900.00	13.00	279.22	894.44	11.76	-72.48	73.42	2.00	2.00	0.00
1,000.00	15.00	279.22	991.46	15.64	-96.36	97.62	2.00	2.00	0.00
1,100.00	17.00	279.22	1,087.58	20.05	-123.56	125.18	2.00	2.00	0.00
1,200.00	19.00	279.22	1,182.68	25.00	-154.06	156.08	2.00	2.00	0.00
1,300.00	21.00	279.22	1,276.65	30.48	-187.82	190.28	2.00	2.00	0.00
1,400.00	23.00	279.22	1,369.36	36.48	-224.80	227.74	2.00	2.00	0.00
1,500.00	25.00	279.22	1,460.71	42.99	-264.94	268.41	2.00	2.00	0.00
1,506.65	25.13	279.22	1,466.74	43.44	-267.73	271.23	2.00	2.00	0.00
<b>Start 4598.93 hold at 1506.65 MD</b>									
1,600.00	25.13	279.22	1,551.25	49.79	-306.86	310.87	0.00	0.00	0.00
1,700.00	25.13	279.22	1,641.78	56.60	-348.78	353.35	0.00	0.00	0.00
1,800.00	25.13	279.22	1,732.31	63.40	-390.71	395.82	0.00	0.00	0.00
1,900.00	25.13	279.22	1,822.84	70.20	-432.63	438.29	0.00	0.00	0.00
2,000.00	25.13	279.22	1,913.38	77.01	-474.56	480.76	0.00	0.00	0.00
2,100.00	25.13	279.22	2,003.91	83.81	-516.48	523.23	0.00	0.00	0.00
2,200.00	25.13	279.22	2,094.44	90.61	-558.40	565.71	0.00	0.00	0.00
2,300.00	25.13	279.22	2,184.97	97.41	-600.33	608.18	0.00	0.00	0.00
2,400.00	25.13	279.22	2,275.51	104.22	-642.25	650.65	0.00	0.00	0.00
2,500.00	25.13	279.22	2,366.04	111.02	-684.17	693.12	0.00	0.00	0.00
2,600.00	25.13	279.22	2,456.57	117.82	-726.10	735.60	0.00	0.00	0.00
2,700.00	25.13	279.22	2,547.10	124.63	-768.02	778.07	0.00	0.00	0.00
2,800.00	25.13	279.22	2,637.64	131.43	-809.95	820.54	0.00	0.00	0.00
2,900.00	25.13	279.22	2,728.17	138.23	-851.87	863.01	0.00	0.00	0.00
3,000.00	25.13	279.22	2,818.70	145.03	-893.79	905.49	0.00	0.00	0.00
3,100.00	25.13	279.22	2,909.23	151.84	-935.72	947.96	0.00	0.00	0.00
3,200.00	25.13	279.22	2,999.77	158.64	-977.64	990.43	0.00	0.00	0.00
3,300.00	25.13	279.22	3,090.30	165.44	-1,019.57	1,032.90	0.00	0.00	0.00
3,400.00	25.13	279.22	3,180.83	172.25	-1,061.49	1,075.37	0.00	0.00	0.00
3,500.00	25.13	279.22	3,271.36	179.05	-1,103.41	1,117.85	0.00	0.00	0.00
3,600.00	25.13	279.22	3,361.90	185.85	-1,145.34	1,160.32	0.00	0.00	0.00
3,700.00	25.13	279.22	3,452.43	192.65	-1,187.26	1,202.79	0.00	0.00	0.00
3,800.00	25.13	279.22	3,542.96	199.46	-1,229.19	1,245.26	0.00	0.00	0.00
3,900.00	25.13	279.22	3,633.49	206.26	-1,271.11	1,287.74	0.00	0.00	0.00
4,000.00	25.13	279.22	3,724.02	213.06	-1,313.03	1,330.21	0.00	0.00	0.00
4,100.00	25.13	279.22	3,814.56	219.87	-1,354.96	1,372.68	0.00	0.00	0.00
4,200.00	25.13	279.22	3,905.09	226.67	-1,396.88	1,415.15	0.00	0.00	0.00
4,300.00	25.13	279.22	3,995.62	233.47	-1,438.80	1,457.62	0.00	0.00	0.00
4,400.00	25.13	279.22	4,086.15	240.27	-1,480.73	1,500.10	0.00	0.00	0.00
4,456.16	25.13	279.22	4,137.00	244.10	-1,504.27	1,523.95	0.00	0.00	0.00
<b>PK Depth</b>									
4,500.00	25.13	279.22	4,176.69	247.08	-1,522.65	1,542.57	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well DECHANT 32-1
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
<b>Site:</b>	WELD_DECHANT 23-1 PAD	<b>North Reference:</b>	True
<b>Well:</b>	DECHANT 32-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DECHANT 32-1		
<b>Design:</b>	DECHANT 32-1 (wp01)		

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)
4,600.00	25.13	279.22	4,267.22	253.88	-1,564.58	1,585.04	0.00	0.00	0.00
4,700.00	25.13	279.22	4,357.75	260.68	-1,606.50	1,627.51	0.00	0.00	0.00
4,721.26	25.13	279.22	4,377.00	262.13	-1,615.41	1,636.54	0.00	0.00	0.00
<b>SX Depth</b>									
4,800.00	25.13	279.22	4,448.28	267.49	-1,648.42	1,669.99	0.00	0.00	0.00
4,900.00	25.13	279.22	4,538.82	274.29	-1,690.35	1,712.46	0.00	0.00	0.00
5,000.00	25.13	279.22	4,629.35	281.09	-1,732.27	1,754.93	0.00	0.00	0.00
5,100.00	25.13	279.22	4,719.88	287.90	-1,774.20	1,797.40	0.00	0.00	0.00
5,200.00	25.13	279.22	4,810.41	294.70	-1,816.12	1,839.87	0.00	0.00	0.00
5,300.00	25.13	279.22	4,900.95	301.50	-1,858.04	1,882.35	0.00	0.00	0.00
5,400.00	25.13	279.22	4,991.48	308.30	-1,899.97	1,924.82	0.00	0.00	0.00
5,500.00	25.13	279.22	5,082.01	315.11	-1,941.89	1,967.29	0.00	0.00	0.00
5,600.00	25.13	279.22	5,172.54	321.91	-1,983.82	2,009.76	0.00	0.00	0.00
5,700.00	25.13	279.22	5,263.07	328.71	-2,025.74	2,052.24	0.00	0.00	0.00
5,800.00	25.13	279.22	5,353.61	335.52	-2,067.66	2,094.71	0.00	0.00	0.00
5,900.00	25.13	279.22	5,444.14	342.32	-2,109.59	2,137.18	0.00	0.00	0.00
6,000.00	25.13	279.22	5,534.67	349.12	-2,151.51	2,179.65	0.00	0.00	0.00
6,100.00	25.13	279.22	5,625.20	355.92	-2,193.43	2,222.12	0.00	0.00	0.00
6,105.58	25.13	279.22	5,630.26	356.30	-2,195.78	2,224.50	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,200.00	23.24	279.22	5,716.38	362.50	-2,233.96	2,263.18	2.00	-2.00	0.00
6,300.00	21.24	279.22	5,808.93	368.56	-2,271.33	2,301.04	2.00	-2.00	0.00
6,400.00	19.24	279.22	5,902.75	374.11	-2,305.48	2,335.64	2.00	-2.00	0.00
6,500.00	17.24	279.22	5,997.72	379.12	-2,336.38	2,366.94	2.00	-2.00	0.00
6,600.00	15.24	279.22	6,093.72	383.60	-2,363.99	2,394.92	2.00	-2.00	0.00
6,700.00	13.24	279.22	6,190.64	387.54	-2,388.28	2,419.52	2.00	-2.00	0.00
6,800.00	11.24	279.22	6,288.36	390.94	-2,409.22	2,440.73	2.00	-2.00	0.00
6,900.00	9.24	279.22	6,386.76	393.79	-2,426.77	2,458.51	2.00	-2.00	0.00
7,000.00	7.24	279.22	6,485.73	396.08	-2,440.93	2,472.85	2.00	-2.00	0.00
7,100.00	5.24	279.22	6,585.13	397.83	-2,451.66	2,483.73	2.00	-2.00	0.00
7,200.00	3.24	279.22	6,684.85	399.01	-2,458.97	2,491.13	2.00	-2.00	0.00
7,300.00	1.24	279.22	6,784.77	399.64	-2,462.83	2,495.05	2.00	-2.00	0.00
7,315.24	0.94	279.22	6,800.00	399.69	-2,463.12	2,495.34	2.00	-2.00	0.00
<b>NIO Depth</b>									
7,362.24	0.00	0.00	6,847.00	399.75	-2,463.50	2,495.72	2.00	-2.00	0.00
<b>Start 400.00 hold at 7362.24 MD</b>									
7,400.00	0.00	0.00	6,884.76	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
7,500.00	0.00	0.00	6,984.76	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
7,600.00	0.00	0.00	7,084.76	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
7,602.24	0.00	0.00	7,087.00	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
<b>CD Depth</b>									
7,685.24	0.00	0.00	7,170.00	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
<b>GH Depth</b>									
7,700.00	0.00	0.00	7,184.76	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
7,762.24	0.00	0.00	7,247.00	399.75	-2,463.50	2,495.72	0.00	0.00	0.00
<b>TD at 7762.24 - DECHANT 32-1 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well DECHANT 32-1
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4838.00ft (Original Well Elev)
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<b>Site:</b>	WELD_DECHANT 23-1 PAD	<b>North Reference:</b>	True
<b>Well:</b>	DECHANT 32-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DECHANT 32-1		
<b>Design:</b>	DECHANT 32-1 (wp01)		

#### Design Targets

##### Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
DECHANT 32-1 BHL	0.00	0.00	7,247.00	399.75	-2,463.50	1,304,946.29	3,245,564.48	40.167133	-104.621297
- plan hits target center									
- Point									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
701.87	700.00	9 5/8"	9-5/8	12-1/4

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,456.16	4,137.00	PK Depth			
4,721.26	4,377.00	SX Depth			
7,315.24	6,800.00	NIO Depth			
7,602.24	7,087.00	CD Depth			
7,685.24	7,170.00	GH Depth			

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.00	250.00	0.00	0.00	Start Build 2.00
1,506.65	1,466.74	43.44	-267.73	Start 4598.93 hold at 1506.65 MD
6,105.58	5,630.26	356.30	-2,195.78	Start Drop -2.00
7,362.24	6,847.00	399.75	-2,463.50	Start 400.00 hold at 7362.24 MD
7,762.24	7,247.00	399.75	-2,463.50	TD at 7762.24