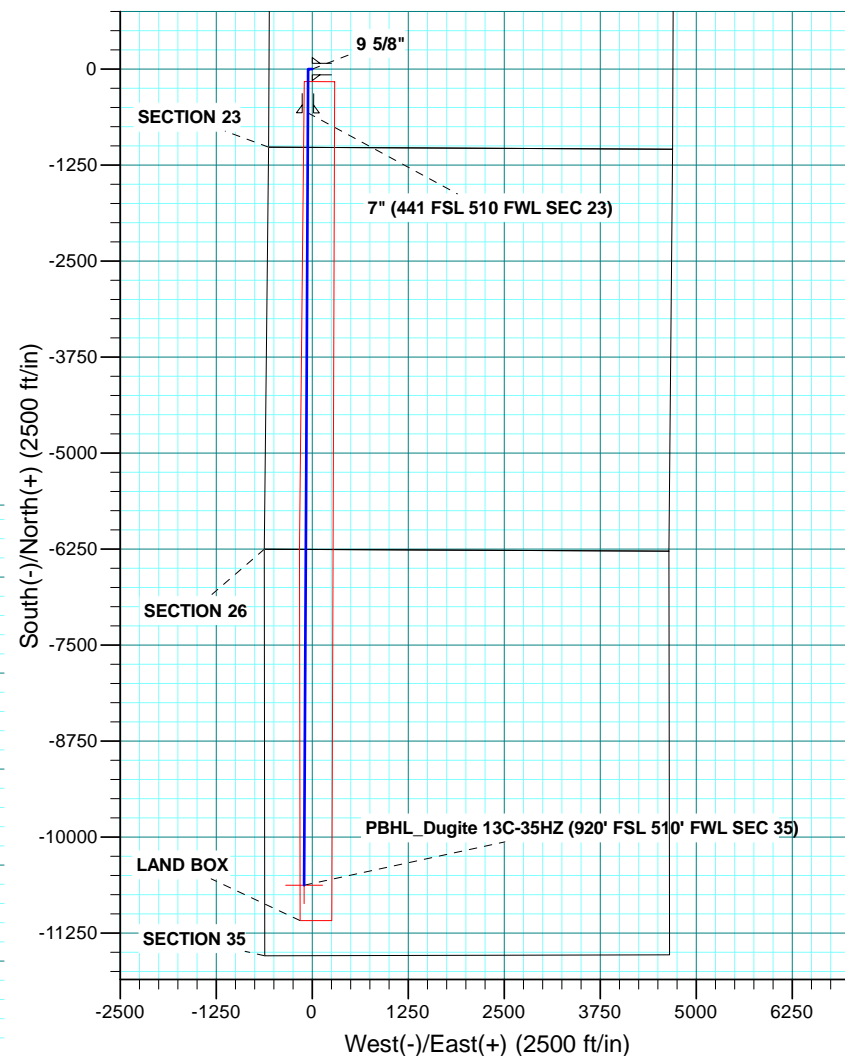
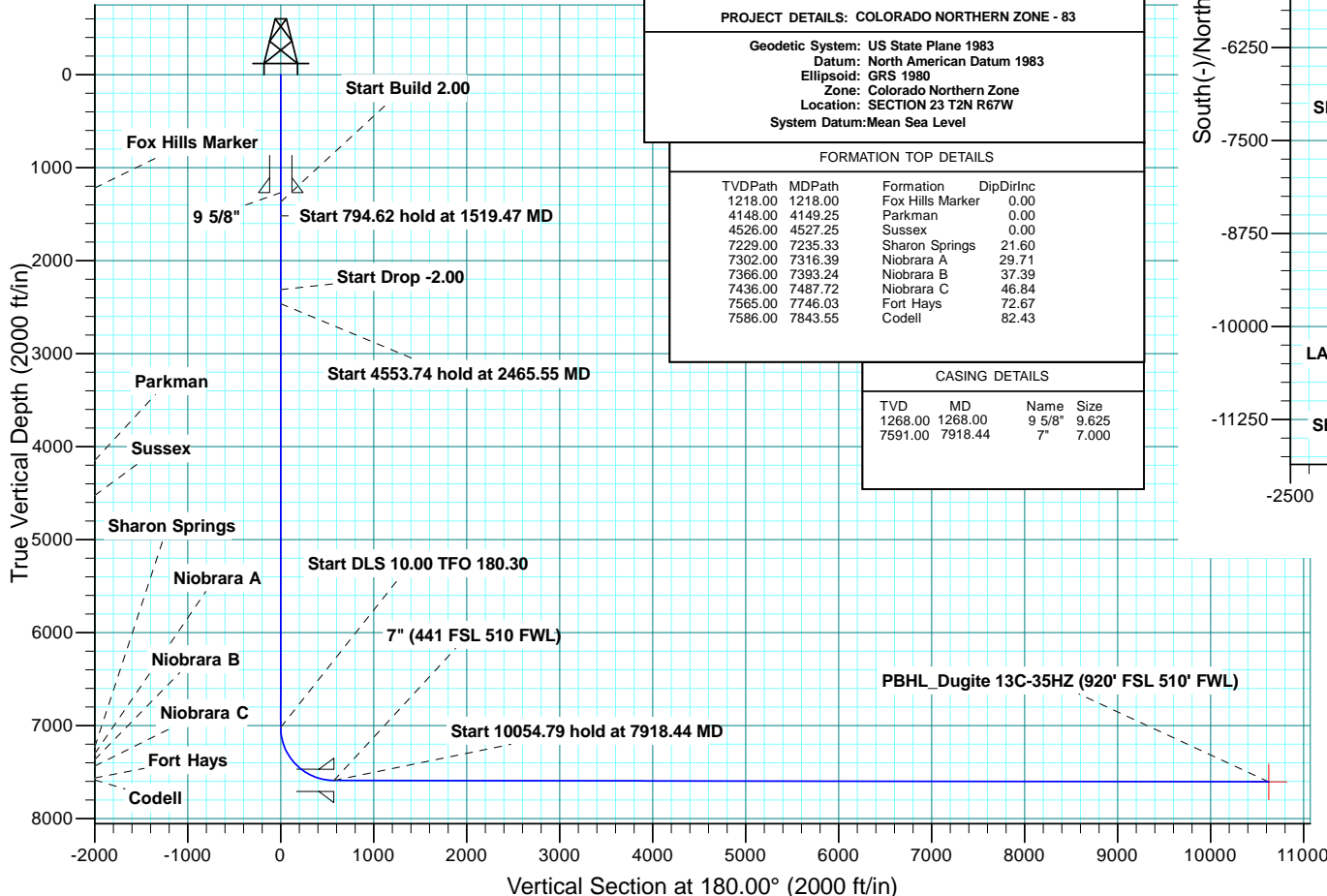


WELL DETAILS: DUGITE 13C-35HZ										
GL 4969 & KB 17 @ 4986.00ft (ASSUMED)										
		+N/S 0.00	+E/W 0.00	Northing 1286904.92	Easting 3177454.74	Latitude 40.1192040	Longitude -104.8654660			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1368.00	0.00	0.00	1368.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1519.47	3.03	270.00	1519.40	0.00	-4.00	2.00	270.00	0.00		Start 794.62 hold at 1519.47 MD
2314.08	3.03	270.00	2312.90	0.00	-46.00	0.00	0.00	0.00		Start Drop -2.00
2465.55	0.00	0.00	2464.30	0.00	-50.00	2.00	180.00	0.00		Start 4553.74 hold at 2465.55 MD
7019.29	0.00	0.00	7018.04	0.00	-50.00	0.00	0.00	0.00		Start DLS 10.00 TFO 180.30
7918.44	89.91	180.30	7591.00	-572.10	-52.96	10.00	180.30	572.10		Start 10054.79 hold at 7918.44 MD
17973.23	89.91	180.30	7606.00	-10626.74	-104.92	0.00	0.00	10626.74	PBHL_Dugite 13C-35HZ	TD at 17973.23
DESIGN TARGET DETAILS										
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7606.00	-10626.74	-104.92	1276277.73	3177425.86	40.0900320	-104.8658410	Point		

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83				
Geodetic System: US State Plane 1983				
Datum: North American Datum 1983				
Ellipsoid: GRS 1980				
Zone: Colorado Northern Zone				
Location: SECTION 23 T2N R67W				
System Datum:Mean Sea Level				
FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipDirInc	
1218.00	1218.00	Fox Hills Marker	0.00	
4148.00	4149.25	Parkman	0.00	
4526.00	4527.25	Sussex	0.00	
7229.00	7235.33	Sharon Springs	21.60	
7302.00	7316.39	Niobrara A	29.71	
7366.00	7393.24	Niobrara B	37.39	
7436.00	7487.72	Niobrara C	46.84	
7565.00	7746.03	Fort Hays	72.67	
7586.00	7843.55	Codell	82.43	
CASING DETAILS				
TVD	MD	Name	Size	
1268.00	1268.00	9 5/8"	9.625	
7591.00	7918.44	7"	7.000	





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

DUGITE 13-23HZ PAD

DUGITE 13C-35HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

21 March, 2014

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	DUGITE 13-23HZ PAD, SECTION 23 T2N R67W			
Site Position:		Northing:	1,286,904.93 usft	Latitude: 40.1192040
From:	Lat/Long	Easting:	3,177,454.74 usft	Longitude: -104.8654660
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.41 °

Well	DUGITE 13C-35HZ			
Well Position	+N/-S	0.00 ft	Northing:	1,286,904.92 usft
	+E/-W	0.00 ft	Easting:	3,177,454.74 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level: 4,969.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2/14/2014	8.58	66.70	52,611

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,368.00	0.00	0.00	1,368.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,519.47	3.03	270.00	1,519.40	0.00	-4.00	2.00	2.00	0.00	270.00	
2,314.08	3.03	270.00	2,312.90	0.00	-46.00	0.00	0.00	0.00	0.00	
2,465.55	0.00	0.00	2,464.30	0.00	-50.00	2.00	-2.00	0.00	180.00	
7,019.29	0.00	0.00	7,018.04	0.00	-50.00	0.00	0.00	0.00	0.00	
7,918.44	89.91	180.30	7,591.00	-572.10	-52.96	10.00	10.00	-19.99	180.30	
17,973.23	89.91	180.30	7,606.00	-10,626.74	-104.92	0.00	0.00	0.00	0.00	PBHL_Dugite 13C-35

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
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
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
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
1,218.00	0.00	0.00	1,218.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker									
1,268.00	0.00	0.00	1,268.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,368.00	0.00	0.00	1,368.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	0.64	270.00	1,400.00	0.00	-0.18	0.00	2.00	2.00	0.00
1,500.00	2.64	270.00	1,499.95	0.00	-3.04	0.00	2.00	2.00	0.00
1,519.47	3.03	270.00	1,519.40	0.00	-4.00	0.00	2.00	2.00	0.00
Start 794.62 hold at 1519.47 MD									
1,600.00	3.03	270.00	1,599.82	0.00	-8.26	0.00	0.00	0.00	0.00
1,700.00	3.03	270.00	1,699.68	0.00	-13.54	0.00	0.00	0.00	0.00
1,800.00	3.03	270.00	1,799.54	0.00	-18.83	0.00	0.00	0.00	0.00
1,900.00	3.03	270.00	1,899.40	0.00	-24.11	0.00	0.00	0.00	0.00
2,000.00	3.03	270.00	1,999.26	0.00	-29.40	0.00	0.00	0.00	0.00
2,100.00	3.03	270.00	2,099.12	0.00	-34.68	0.00	0.00	0.00	0.00
2,200.00	3.03	270.00	2,198.98	0.00	-39.97	0.00	0.00	0.00	0.00
2,300.00	3.03	270.00	2,298.84	0.00	-45.25	0.00	0.00	0.00	0.00
2,314.08	3.03	270.00	2,312.90	0.00	-46.00	0.00	0.00	0.00	0.00
Start Drop -2.00									
2,400.00	1.31	270.00	2,398.75	0.00	-49.25	0.00	2.00	-2.00	0.00
2,465.55	0.00	0.00	2,464.30	0.00	-50.00	0.00	2.00	-2.00	0.00
Start 4553.74 hold at 2465.55 MD									
2,500.00	0.00	0.00	2,498.75	0.00	-50.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,598.75	0.00	-50.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,698.75	0.00	-50.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,798.75	0.00	-50.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,898.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,998.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,098.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,698.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,798.75	0.00	-50.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,898.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,998.75	0.00	-50.00	0.00	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.00	0.00	0.00	4,098.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,149.25	0.00	0.00	4,148.00	0.00	-50.00	0.00	0.00	0.00	0.00
Parkman									
4,200.00	0.00	0.00	4,198.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,298.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,498.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,527.25	0.00	0.00	4,526.00	0.00	-50.00	0.00	0.00	0.00	0.00
Sussex									
4,600.00	0.00	0.00	4,598.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,698.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.75	0.00	-50.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,998.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,698.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.75	0.00	-50.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,298.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,398.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,498.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,598.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,698.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,798.75	0.00	-50.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,898.75	0.00	-50.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,998.75	0.00	-50.00	0.00	0.00	0.00	0.00
7,019.29	0.00	0.00	7,018.04	0.00	-50.00	0.00	0.00	0.00	0.00
Start DLS 10.00 TFO 180.30									
7,100.00	8.07	180.30	7,098.48	-5.67	-50.03	5.67	10.00	10.00	0.00
7,200.00	18.07	180.30	7,195.77	-28.26	-50.15	28.26	10.00	10.00	0.00
7,235.33	21.60	180.30	7,229.00	-40.25	-50.21	40.25	10.00	10.00	0.00
Sharon Springs									
7,300.00	28.07	180.30	7,287.65	-67.40	-50.35	67.40	10.00	10.00	0.00
7,316.39	29.71	180.30	7,302.00	-75.31	-50.39	75.31	10.00	10.00	0.00
Niobrara A									
7,393.24	37.39	180.30	7,366.00	-117.76	-50.61	117.76	10.00	10.00	0.00
Niobrara B									
7,400.00	38.07	180.30	7,371.35	-121.90	-50.63	121.90	10.00	10.00	0.00
7,487.72	46.84	180.30	7,436.00	-181.05	-50.94	181.05	10.00	10.00	0.00
Niobrara C									
7,500.00	48.07	180.30	7,444.30	-190.10	-50.98	190.10	10.00	10.00	0.00
7,600.00	58.07	180.30	7,504.31	-269.93	-51.40	269.93	10.00	10.00	0.00
7,700.00	68.07	180.30	7,549.54	-358.98	-51.86	358.98	10.00	10.00	0.00
7,746.03	72.67	180.30	7,565.00	-402.32	-52.08	402.32	10.00	10.00	0.00
Fort Hays									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,800.00	78.07	180.30	7,578.63	-454.52	-52.35	454.52	10.00	10.00	0.00
7,843.55	82.43	180.30	7,586.00	-497.43	-52.57	497.43	10.00	10.00	0.00
Codell									
7,900.00	88.07	180.30	7,590.67	-553.66	-52.86	553.66	10.00	10.00	0.00
7,918.44	89.91	180.30	7,591.00	-572.10	-52.96	572.10	10.00	10.00	0.00
Start 10054.79 hold at 7918.44 MD - 7" (441 FSL 510 FWL)									
8,000.00	89.91	180.30	7,591.12	-653.66	-53.38	653.66	0.00	0.00	0.00
8,100.00	89.91	180.30	7,591.27	-753.66	-53.89	753.66	0.00	0.00	0.00
8,200.00	89.91	180.30	7,591.42	-853.65	-54.41	853.65	0.00	0.00	0.00
8,300.00	89.91	180.30	7,591.57	-953.65	-54.93	953.65	0.00	0.00	0.00
8,400.00	89.91	180.30	7,591.72	-1,053.65	-55.45	1,053.65	0.00	0.00	0.00
8,500.00	89.91	180.30	7,591.87	-1,153.65	-55.96	1,153.65	0.00	0.00	0.00
8,600.00	89.91	180.30	7,592.02	-1,253.65	-56.48	1,253.65	0.00	0.00	0.00
8,700.00	89.91	180.30	7,592.16	-1,353.65	-57.00	1,353.65	0.00	0.00	0.00
8,800.00	89.91	180.30	7,592.31	-1,453.65	-57.51	1,453.65	0.00	0.00	0.00
8,900.00	89.91	180.30	7,592.46	-1,553.64	-58.03	1,553.64	0.00	0.00	0.00
9,000.00	89.91	180.30	7,592.61	-1,653.64	-58.55	1,653.64	0.00	0.00	0.00
9,100.00	89.91	180.30	7,592.76	-1,753.64	-59.06	1,753.64	0.00	0.00	0.00
9,200.00	89.91	180.30	7,592.91	-1,853.64	-59.58	1,853.64	0.00	0.00	0.00
9,300.00	89.91	180.30	7,593.06	-1,953.64	-60.10	1,953.64	0.00	0.00	0.00
9,400.00	89.91	180.30	7,593.21	-2,053.64	-60.61	2,053.64	0.00	0.00	0.00
9,500.00	89.91	180.30	7,593.36	-2,153.64	-61.13	2,153.64	0.00	0.00	0.00
9,600.00	89.91	180.30	7,593.51	-2,253.63	-61.65	2,253.63	0.00	0.00	0.00
9,700.00	89.91	180.30	7,593.66	-2,353.63	-62.16	2,353.63	0.00	0.00	0.00
9,800.00	89.91	180.30	7,593.81	-2,453.63	-62.68	2,453.63	0.00	0.00	0.00
9,900.00	89.91	180.30	7,593.95	-2,553.63	-63.20	2,553.63	0.00	0.00	0.00
10,000.00	89.91	180.30	7,594.10	-2,653.63	-63.71	2,653.63	0.00	0.00	0.00
10,100.00	89.91	180.30	7,594.25	-2,753.63	-64.23	2,753.63	0.00	0.00	0.00
10,200.00	89.91	180.30	7,594.40	-2,853.62	-64.75	2,853.62	0.00	0.00	0.00
10,300.00	89.91	180.30	7,594.55	-2,953.62	-65.26	2,953.62	0.00	0.00	0.00
10,400.00	89.91	180.30	7,594.70	-3,053.62	-65.78	3,053.62	0.00	0.00	0.00
10,500.00	89.91	180.30	7,594.85	-3,153.62	-66.30	3,153.62	0.00	0.00	0.00
10,600.00	89.91	180.30	7,595.00	-3,253.62	-66.81	3,253.62	0.00	0.00	0.00
10,700.00	89.91	180.30	7,595.15	-3,353.62	-67.33	3,353.62	0.00	0.00	0.00
10,800.00	89.91	180.30	7,595.30	-3,453.62	-67.85	3,453.62	0.00	0.00	0.00
10,900.00	89.91	180.30	7,595.45	-3,553.61	-68.37	3,553.61	0.00	0.00	0.00
11,000.00	89.91	180.30	7,595.60	-3,653.61	-68.88	3,653.61	0.00	0.00	0.00
11,100.00	89.91	180.30	7,595.75	-3,753.61	-69.40	3,753.61	0.00	0.00	0.00
11,200.00	89.91	180.30	7,595.89	-3,853.61	-69.92	3,853.61	0.00	0.00	0.00
11,300.00	89.91	180.30	7,596.04	-3,953.61	-70.43	3,953.61	0.00	0.00	0.00
11,400.00	89.91	180.30	7,596.19	-4,053.61	-70.95	4,053.61	0.00	0.00	0.00
11,500.00	89.91	180.30	7,596.34	-4,153.61	-71.47	4,153.61	0.00	0.00	0.00
11,600.00	89.91	180.30	7,596.49	-4,253.60	-71.98	4,253.60	0.00	0.00	0.00
11,700.00	89.91	180.30	7,596.64	-4,353.60	-72.50	4,353.60	0.00	0.00	0.00
11,800.00	89.91	180.30	7,596.79	-4,453.60	-73.02	4,453.60	0.00	0.00	0.00
11,900.00	89.91	180.30	7,596.94	-4,553.60	-73.53	4,553.60	0.00	0.00	0.00
12,000.00	89.91	180.30	7,597.09	-4,653.60	-74.05	4,653.60	0.00	0.00	0.00
12,100.00	89.91	180.30	7,597.24	-4,753.60	-74.57	4,753.60	0.00	0.00	0.00
12,200.00	89.91	180.30	7,597.39	-4,853.60	-75.08	4,853.60	0.00	0.00	0.00
12,300.00	89.91	180.30	7,597.54	-4,953.59	-75.60	4,953.59	0.00	0.00	0.00
12,400.00	89.91	180.30	7,597.68	-5,053.59	-76.12	5,053.59	0.00	0.00	0.00
12,500.00	89.91	180.30	7,597.83	-5,153.59	-76.63	5,153.59	0.00	0.00	0.00
12,600.00	89.91	180.30	7,597.98	-5,253.59	-77.15	5,253.59	0.00	0.00	0.00
12,700.00	89.91	180.30	7,598.13	-5,353.59	-77.67	5,353.59	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.00	89.91	180.30	7,598.28	-5,453.59	-78.18	5,453.59	0.00	0.00	0.00
12,900.00	89.91	180.30	7,598.43	-5,553.59	-78.70	5,553.59	0.00	0.00	0.00
13,000.00	89.91	180.30	7,598.58	-5,653.58	-79.22	5,653.58	0.00	0.00	0.00
13,100.00	89.91	180.30	7,598.73	-5,753.58	-79.73	5,753.58	0.00	0.00	0.00
13,200.00	89.91	180.30	7,598.88	-5,853.58	-80.25	5,853.58	0.00	0.00	0.00
13,300.00	89.91	180.30	7,599.03	-5,953.58	-80.77	5,953.58	0.00	0.00	0.00
13,400.00	89.91	180.30	7,599.18	-6,053.58	-81.28	6,053.58	0.00	0.00	0.00
13,500.00	89.91	180.30	7,599.33	-6,153.58	-81.80	6,153.58	0.00	0.00	0.00
13,600.00	89.91	180.30	7,599.48	-6,253.58	-82.32	6,253.58	0.00	0.00	0.00
13,700.00	89.91	180.30	7,599.62	-6,353.57	-82.84	6,353.57	0.00	0.00	0.00
13,800.00	89.91	180.30	7,599.77	-6,453.57	-83.35	6,453.57	0.00	0.00	0.00
13,900.00	89.91	180.30	7,599.92	-6,553.57	-83.87	6,553.57	0.00	0.00	0.00
14,000.00	89.91	180.30	7,600.07	-6,653.57	-84.39	6,653.57	0.00	0.00	0.00
14,100.00	89.91	180.30	7,600.22	-6,753.57	-84.90	6,753.57	0.00	0.00	0.00
14,200.00	89.91	180.30	7,600.37	-6,853.57	-85.42	6,853.57	0.00	0.00	0.00
14,300.00	89.91	180.30	7,600.52	-6,953.57	-85.94	6,953.57	0.00	0.00	0.00
14,400.00	89.91	180.30	7,600.67	-7,053.56	-86.45	7,053.56	0.00	0.00	0.00
14,500.00	89.91	180.30	7,600.82	-7,153.56	-86.97	7,153.56	0.00	0.00	0.00
14,600.00	89.91	180.30	7,600.97	-7,253.56	-87.49	7,253.56	0.00	0.00	0.00
14,700.00	89.91	180.30	7,601.12	-7,353.56	-88.00	7,353.56	0.00	0.00	0.00
14,800.00	89.91	180.30	7,601.27	-7,453.56	-88.52	7,453.56	0.00	0.00	0.00
14,900.00	89.91	180.30	7,601.41	-7,553.56	-89.04	7,553.56	0.00	0.00	0.00
15,000.00	89.91	180.30	7,601.56	-7,653.56	-89.55	7,653.56	0.00	0.00	0.00
15,100.00	89.91	180.30	7,601.71	-7,753.55	-90.07	7,753.55	0.00	0.00	0.00
15,200.00	89.91	180.30	7,601.86	-7,853.55	-90.59	7,853.55	0.00	0.00	0.00
15,300.00	89.91	180.30	7,602.01	-7,953.55	-91.10	7,953.55	0.00	0.00	0.00
15,400.00	89.91	180.30	7,602.16	-8,053.55	-91.62	8,053.55	0.00	0.00	0.00
15,500.00	89.91	180.30	7,602.31	-8,153.55	-92.14	8,153.55	0.00	0.00	0.00
15,600.00	89.91	180.30	7,602.46	-8,253.55	-92.65	8,253.55	0.00	0.00	0.00
15,700.00	89.91	180.30	7,602.61	-8,353.55	-93.17	8,353.55	0.00	0.00	0.00
15,800.00	89.91	180.30	7,602.76	-8,453.54	-93.69	8,453.54	0.00	0.00	0.00
15,900.00	89.91	180.30	7,602.91	-8,553.54	-94.20	8,553.54	0.00	0.00	0.00
16,000.00	89.91	180.30	7,603.06	-8,653.54	-94.72	8,653.54	0.00	0.00	0.00
16,100.00	89.91	180.30	7,603.21	-8,753.54	-95.24	8,753.54	0.00	0.00	0.00
16,200.00	89.91	180.30	7,603.35	-8,853.54	-95.76	8,853.54	0.00	0.00	0.00
16,300.00	89.91	180.30	7,603.50	-8,953.54	-96.27	8,953.54	0.00	0.00	0.00
16,400.00	89.91	180.30	7,603.65	-9,053.54	-96.79	9,053.54	0.00	0.00	0.00
16,500.00	89.91	180.30	7,603.80	-9,153.53	-97.31	9,153.53	0.00	0.00	0.00
16,600.00	89.91	180.30	7,603.95	-9,253.53	-97.82	9,253.53	0.00	0.00	0.00
16,700.00	89.91	180.30	7,604.10	-9,353.53	-98.34	9,353.53	0.00	0.00	0.00
16,800.00	89.91	180.30	7,604.25	-9,453.53	-98.86	9,453.53	0.00	0.00	0.00
16,900.00	89.91	180.30	7,604.40	-9,553.53	-99.37	9,553.53	0.00	0.00	0.00
17,000.00	89.91	180.30	7,604.55	-9,653.53	-99.89	9,653.53	0.00	0.00	0.00
17,100.00	89.91	180.30	7,604.70	-9,753.53	-100.41	9,753.53	0.00	0.00	0.00
17,200.00	89.91	180.30	7,604.85	-9,853.52	-100.92	9,853.52	0.00	0.00	0.00
17,300.00	89.91	180.30	7,605.00	-9,953.52	-101.44	9,953.52	0.00	0.00	0.00
17,400.00	89.91	180.30	7,605.14	-10,053.52	-101.96	10,053.52	0.00	0.00	0.00
17,500.00	89.91	180.30	7,605.29	-10,153.52	-102.47	10,153.52	0.00	0.00	0.00
17,600.00	89.91	180.30	7,605.44	-10,253.52	-102.99	10,253.52	0.00	0.00	0.00
17,700.00	89.91	180.30	7,605.59	-10,353.52	-103.51	10,353.52	0.00	0.00	0.00
17,800.00	89.91	180.30	7,605.74	-10,453.52	-104.02	10,453.52	0.00	0.00	0.00
17,900.00	89.91	180.30	7,605.89	-10,553.51	-104.54	10,553.51	0.00	0.00	0.00
17,973.23	89.91	180.30	7,606.00	-10,626.74	-104.92	10,626.74	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well DUGITE 13C-35HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4969 & KB 17 @ 4986.00ft (ASSUMED)
Site:	DUGITE 13-23HZ PAD	North Reference:	True
Well:	DUGITE 13C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD at 17973.23 - PBHL_Dugite 13C-35HZ (920' FSL 510' FWL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_Dugite 13C-35HZ	0.00	0.00	7,606.00	-10,626.74	-104.92	1,276,277.73	3,177,425.87	40.0900320	-104.8658410
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,268.00	1,268.00	9 5/8"	9.625	12.250	
7,918.44	7,591.00	7" (441 FSL 510 FWL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,218.00	1,218.00	Fox Hills Marker				
4,149.25	4,148.00	Parkman				
4,527.25	4,526.00	Sussex				
7,235.33	7,229.00	Sharon Springs				
7,316.39	7,302.00	Niobrara A				
7,393.24	7,366.00	Niobrara B				
7,487.72	7,436.00	Niobrara C				
7,746.03	7,565.00	Fort Hays				
7,843.55	7,586.00	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,368.00	1,368.00	0.00	0.00	Start Build 2.00	
1,519.47	1,519.40	0.00	-4.00	Start 794.62 hold at 1519.47 MD	
2,314.08	2,312.90	0.00	-46.00	Start Drop -2.00	
2,465.55	2,464.30	0.00	-50.00	Start 4553.74 hold at 2465.55 MD	
7,019.29	7,018.04	0.00	-50.00	Start DLS 10.00 TFO 180.30	
7,918.44	7,591.00	-572.10	-52.96	Start 10054.79 hold at 7918.44 MD	
17,973.23	7,606.00	-10,626.74	-104.92	TD at 17973.23	