

Noble Energy

Mesa County, CO (NAD 83)

Sec. 12-T8S-R96W

Hyrup 12-42A

Plan A - Rev 0 Proposal

Plan: Plan A - Rev 0 Proposal

Standard Planning Report

07 July, 2011

Halliburton Company

Planning Report

Database:	Noble Database	Local Co-ordinate Reference:	Site Sec. 12-T8S-R96W
Company:	Noble Energy	TVD Reference:	WELL @ 6175.0ft (Original Well Elev)
Project:	Mesa County, CO (NAD 83)	MD Reference:	WELL @ 6175.0ft (Original Well Elev)
Site:	Sec. 12-T8S-R96W	North Reference:	Grid
Well:	Hyrup 12-42A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A - Rev 0 Proposal		
Design:	Plan A - Rev 0 Proposal		

Project	Mesa County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	Sec. 12-T8S-R96W			
Site Position:		Northing:	478,042.46 m	Latitude: 39° 21' 58.079 N
From:	Lat/Long	Easting:	694,523.52 m	Longitude: 108° 3' 6.876 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.61 °

Well	Hyrup 12-42A			
Well Position	+N/-S	9.6 ft	Northing:	478,045.39 m
	+E/-W	60.0 ft	Easting:	694,541.80 m
Position Uncertainty	0.0 ft	Wellhead Elevation:		Ground Level: 6,151.0 ft

Wellbore	Plan A - Rev 0 Proposal				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/6/2011	10.35	65.62	52,165

Design	Plan A - Rev 0 Proposal			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	9.6	60.0	24.33

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	9.6	60.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	9.6	60.0	0.00	0.00	0.00	0.00	
877.1	13.54	26.61	870.8	80.8	95.6	2.00	2.00	0.00	26.61	
3,862.9	13.54	26.61	3,773.6	705.9	408.8	0.00	0.00	0.00	0.00	
4,765.7	0.00	0.00	4,668.0	800.8	456.4	1.50	-1.50	0.00	180.00	Hyrup 12-42A'_PlanA
6,925.6	2.97	243.40	6,827.0	775.8	406.4	0.14	0.14	-5.40	243.40	Hyrup 12-42A'_PlanA

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Site:	Sec. 12-T8S-R96W	North Reference:	Grid
Well:	Hyrup 12-42A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A - Rev 0 Proposal		
Design:	Plan A - Rev 0 Proposal		

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	9.6	60.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	9.6	60.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	9.6	60.0	0.0	0.00	0.00	0.00
300.0	2.00	26.61	300.0	11.2	60.7	1.7	2.00	2.00	0.00
400.0	4.00	26.61	399.8	15.8	63.1	7.0	2.00	2.00	0.00
500.0	6.00	26.61	499.5	23.6	67.0	15.7	2.00	2.00	0.00
600.0	8.00	26.61	598.7	34.5	72.4	27.9	2.00	2.00	0.00
700.0	10.00	26.61	697.5	48.5	79.4	43.5	2.00	2.00	0.00
800.0	12.00	26.61	795.6	65.6	88.0	62.6	2.00	2.00	0.00
877.1	13.54	26.61	870.8	80.8	95.6	79.6	2.00	2.00	0.00
900.0	13.54	26.61	893.1	85.6	98.0	84.9	0.00	0.00	0.00
1,000.0	13.54	26.61	990.3	106.5	108.5	108.3	0.00	0.00	0.00
1,100.0	13.54	26.61	1,087.5	127.5	119.0	131.7	0.00	0.00	0.00
1,200.0	13.54	26.61	1,184.7	148.4	129.5	155.1	0.00	0.00	0.00
1,300.0	13.54	26.61	1,282.0	169.3	140.0	178.5	0.00	0.00	0.00
1,400.0	13.54	26.61	1,379.2	190.3	150.5	201.9	0.00	0.00	0.00
1,500.0	13.54	26.61	1,476.4	211.2	161.0	225.3	0.00	0.00	0.00
1,600.0	13.54	26.61	1,573.6	232.1	171.5	248.7	0.00	0.00	0.00
1,700.0	13.54	26.61	1,670.8	253.1	181.9	272.1	0.00	0.00	0.00
1,800.0	13.54	26.61	1,768.1	274.0	192.4	295.5	0.00	0.00	0.00
1,900.0	13.54	26.61	1,865.3	294.9	202.9	318.9	0.00	0.00	0.00
2,000.0	13.54	26.61	1,962.5	315.9	213.4	342.3	0.00	0.00	0.00
2,100.0	13.54	26.61	2,059.7	336.8	223.9	365.7	0.00	0.00	0.00
2,200.0	13.54	26.61	2,156.9	357.7	234.4	389.1	0.00	0.00	0.00
2,300.0	13.54	26.61	2,254.2	378.7	244.9	412.5	0.00	0.00	0.00
2,400.0	13.54	26.61	2,351.4	399.6	255.4	435.9	0.00	0.00	0.00
2,500.0	13.54	26.61	2,448.6	420.5	265.9	459.3	0.00	0.00	0.00
2,600.0	13.54	26.61	2,545.8	441.5	276.4	482.7	0.00	0.00	0.00
2,700.0	13.54	26.61	2,643.0	462.4	286.8	506.1	0.00	0.00	0.00
2,800.0	13.54	26.61	2,740.3	483.4	297.3	529.5	0.00	0.00	0.00
2,900.0	13.54	26.61	2,837.5	504.3	307.8	552.9	0.00	0.00	0.00
3,000.0	13.54	26.61	2,934.7	525.2	318.3	576.3	0.00	0.00	0.00
3,100.0	13.54	26.61	3,031.9	546.2	328.8	599.7	0.00	0.00	0.00
3,200.0	13.54	26.61	3,129.1	567.1	339.3	623.1	0.00	0.00	0.00
3,300.0	13.54	26.61	3,226.4	588.0	349.8	646.5	0.00	0.00	0.00
3,400.0	13.54	26.61	3,323.6	609.0	360.3	669.9	0.00	0.00	0.00
3,500.0	13.54	26.61	3,420.8	629.9	370.8	693.3	0.00	0.00	0.00
3,600.0	13.54	26.61	3,518.0	650.8	381.3	716.7	0.00	0.00	0.00
3,700.0	13.54	26.61	3,615.2	671.8	391.7	740.1	0.00	0.00	0.00
3,800.0	13.54	26.61	3,712.5	692.7	402.2	763.4	0.00	0.00	0.00
3,862.9	13.54	26.61	3,773.6	705.9	408.8	778.2	0.00	0.00	0.00
3,900.0	12.99	26.61	3,809.7	713.5	412.6	786.7	1.50	-1.50	0.00
4,000.0	11.49	26.61	3,907.4	732.4	422.1	807.8	1.50	-1.50	0.00
4,100.0	9.99	26.61	4,005.7	749.1	430.5	826.5	1.50	-1.50	0.00
4,200.0	8.49	26.61	4,104.4	763.4	437.7	842.5	1.50	-1.50	0.00
4,300.0	6.99	26.61	4,203.5	775.5	443.7	855.9	1.50	-1.50	0.00
4,400.0	5.49	26.61	4,302.9	785.2	448.6	866.8	1.50	-1.50	0.00
4,500.0	3.99	26.61	4,402.5	792.5	452.3	875.0	1.50	-1.50	0.00
4,600.0	2.49	26.61	4,502.4	797.6	454.8	880.7	1.50	-1.50	0.00
4,700.0	0.99	26.61	4,602.3	800.3	456.1	883.7	1.50	-1.50	0.00
4,765.7	0.00	0.00	4,668.0	800.8	456.4	884.3	1.50	-1.50	0.00
4,800.0	0.05	243.40	4,702.3	800.8	456.4	884.3	0.14	0.14	0.00
4,900.0	0.18	243.40	4,802.3	800.7	456.2	884.1	0.14	0.14	0.00
5,000.0	0.32	243.40	4,902.3	800.5	455.8	883.8	0.14	0.14	0.00

Halliburton Company

Planning Report

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Project:	Mesa County, CO (NAD 83)	MD Reference:	WELL @ 6175.0ft (Original Well Elev)
Site:	Sec. 12-T8S-R96W	North Reference:	Grid
Well:	Hyrup 12-42A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A - Rev 0 Proposal		
Design:	Plan A - Rev 0 Proposal		

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)	
5,100.0	0.46	243.40	5,002.3	800.2	455.2	883.2	0.14	0.14	0.00	
5,200.0	0.60	243.40	5,102.3	799.8	454.4	882.5	0.14	0.14	0.00	
5,300.0	0.73	243.40	5,202.3	799.3	453.3	881.6	0.14	0.14	0.00	
5,400.0	0.87	243.40	5,302.3	798.6	452.1	880.5	0.14	0.14	0.00	
5,500.0	1.01	243.40	5,402.3	797.9	450.6	879.3	0.14	0.14	0.00	
5,600.0	1.15	243.40	5,502.3	797.1	448.9	877.8	0.14	0.14	0.00	
5,700.0	1.28	243.40	5,602.2	796.1	447.0	876.1	0.14	0.14	0.00	
5,800.0	1.42	243.40	5,702.2	795.1	444.9	874.3	0.14	0.14	0.00	
5,900.0	1.56	243.40	5,802.2	793.9	442.6	872.3	0.14	0.14	0.00	
6,000.0	1.69	243.40	5,902.1	792.6	440.1	870.1	0.14	0.14	0.00	
6,100.0	1.83	243.40	6,002.1	791.2	437.3	867.7	0.14	0.14	0.00	
6,200.0	1.97	243.40	6,102.0	789.8	434.4	865.1	0.14	0.14	0.00	
6,300.0	2.11	243.40	6,202.0	788.2	431.2	862.4	0.14	0.14	0.00	
6,400.0	2.24	243.40	6,301.9	786.5	427.8	859.4	0.14	0.14	0.00	
6,500.0	2.38	243.40	6,401.8	784.7	424.2	856.3	0.14	0.14	0.00	
6,600.0	2.52	243.40	6,501.7	782.8	420.4	853.0	0.14	0.14	0.00	
6,700.0	2.66	243.40	6,601.6	780.7	416.3	849.5	0.14	0.14	0.00	
6,800.0	2.79	243.40	6,701.5	778.6	412.1	845.8	0.14	0.14	0.00	
6,900.0	2.93	243.40	6,801.4	776.4	407.6	841.9	0.14	0.14	0.00	
6,925.6	2.97	243.40	6,827.0	775.8	406.4	840.9	0.14	0.14	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude	
- hit/miss target										
- Shape										
Hyrup 12-42A'_100 N H	0.00	0.00	0.0	871.8	206.4	478,308.17	694,586.43	39° 22' 6.749 N	108° 3' 4.561 W	
- plan misses target center by 874.6ft at 0.0ft MD (0.0 TVD, 9.6 N, 60.0 E)										
- Polygon										
Point 1			0.0	0.0	0.0	478,308.17	694,586.43			
Point 2			0.0	0.0	400.0	478,308.17	694,708.35			
Hyrup 12-42A'_PlanA - F	0.00	0.00	4,668.0	775.8	406.4	478,278.91	694,647.40	39° 22' 5.856 N	108° 3' 1.980 W	
- plan misses target center by 55.9ft at 4765.3ft MD (4667.6 TVD, 800.8 N, 456.4 E)										
- Rectangle (sides W200.0 H100.0 D2,159.0)										
Hyrup 12-42A'_PlanA - F	0.00	360.00	4,668.0	800.8	456.4	478,286.53	694,662.63	39° 22' 6.117 N	108° 3' 1.353 W	
- plan hits target center										
- Rectangle (sides W25.0 H25.0 D0.0)										
Hyrup 12-42A'_PlanA - F	0.00	0.00	6,827.0	775.8	406.4	478,278.91	694,647.40	39° 22' 5.856 N	108° 3' 1.980 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,500.0	1,476.4	8 5/8" Surface Casing		8.625	12.250
6,925.6	6,827.0	4 1/2" Production Casing		4.500	6.000

Halliburton Company

Planning Report

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Company:	Noble Energy	TVD Reference:	WELL @ 6175.0ft (Original Well Elev)
Project:	Mesa County, CO (NAD 83)	MD Reference:	WELL @ 6175.0ft (Original Well Elev)
Site:	Sec. 12-T8S-R96W	North Reference:	Grid
Well:	Hyrup 12-42A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A - Rev 0 Proposal		
Design:	Plan A - Rev 0 Proposal		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,244.1	3,172.0	Williams Fork			
4,765.7	4,668.0	Top of Gas			
5,656.7	5,559.0	Cameo			
6,042.9	5,945.0	Rollins			
6,324.0	6,226.0	Cozzette			
6,560.2	6,462.0	Corcoran			
6,675.3	6,577.0	Mancos			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	9.6	60.0	Kick Off Point at 200.00 ft	
425.0	424.8	17.5	63.9	Build Rate = 2.00°/100 ft	
877.1	870.8	80.8	95.6	End Build at 877.1 ft	
2,500.0	2,448.6	420.5	265.9	Hold Angle 13.54°	
3,862.9	3,773.6	705.9	408.8	Begin Drop at 3892.9 ft	
4,100.0	4,005.7	749.1	430.5	Drop Rate = 1.50°/100 ft	
4,765.7	4,668.0	800.8	456.4	End Drop at 4765.7 ft	
6,925.6	6,827.0	775.8	406.4	Total Depth at 6925.6 ft	

Project: Mesa County, CO (NAD 83)
Site: Sec. 12-T8S-R96W
Well: Hyrup 12-42A
Wellbore: Plan A - Rev 0 Proposal
Design: Plan A - Rev 0 Proposal

Noble Energy

HALLIBURTON

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	9.6	60.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	9.6	60.0	0.00	0.00	0.0	
3	877.1	13.54	26.61	870.8	80.8	95.6	2.00	26.61	79.6	
4	3862.9	13.54	26.61	3773.6	705.9	408.8	0.00	0.00	778.2	
5	4765.7	0.00	0.00	4668.0	800.8	456.4	1.50	180.00	884.3	Hyrup 12-42A'_PlanA - Rev0_Driller's Tgt
6	6925.6	2.97	243.40	6827.0	775.8	406.4	0.14	243.40	840.9	Hyrup 12-42A'_PlanA - Rev0_BHL Tgt

WELL DETAILS: Hyrup 12-42A

Ground Level: 6151.0
Northing 478045.39 Easting 694541.80 Latitude 39° 21' 58.190 N Longitude 108° 3' 6.116 W

FORMATION TOP DETAILS

TVDPth	MDPath	Formation
3172.0	3244.1	Williams Fork
4668.0	4765.7	Top of Gas
5559.0	5656.7	Cameo
5945.0	6042.9	Rollins
6226.0	6324.0	Cozzette
6462.0	6560.2	Corcoran
6577.0	6675.3	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Hyrup 12-42A'_100 N Hardline	0.0	871.8	206.4	Polygon
Hyrup 12-42A'_PlanA - Rev0_Driller's Tgt	4668.0	800.8	456.4	Rectangle (Sides: L25.0 W25.0)
Hyrup 12-42A'_PlanA - Rev0_Zone Tgt	4668.0	775.8	406.4	Rectangle (Sides: L100.0 W200.0)
Hyrup 12-42A'_PlanA - Rev0_BHL Tgt	6827.0	775.8	406.4	Point

