

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

Markham 13-8 pad

Markham 34-8

Markham 34-8

Plan: Markham 34-8 (wp01)

Standard Planning Report

29 December, 2010



Project: COLORADO NORTHERN ZONE - 83
Site: Markham 13-8 pad
Well: Markham 34-8
Wellbore: Markham 34-8
Section:
SHL:
Design: Markham 34-8 (wp01)
Latitude: 40.148980
Longitude: -104.694942
GL: 4940.00
KB: WELL @ 4940.00ft (Original Well Elev)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4140.00	4352.09	PK
4550.00	4770.13	SX
7010.00	7230.93	NIO
7290.00	7510.93	CD
7377.00	7597.93	GH
7740.00	7960.93	J

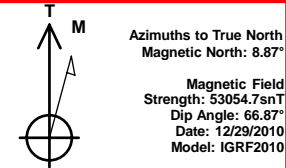


WELL DETAILS: Markham 34-8

+N/-S	+E/-W	Northing	Ground Level: Easting	4940.00 Latitude	Longitude	Slot
0.00	0.00	1298138.36	3225044.09	40.148980	-104.694942	

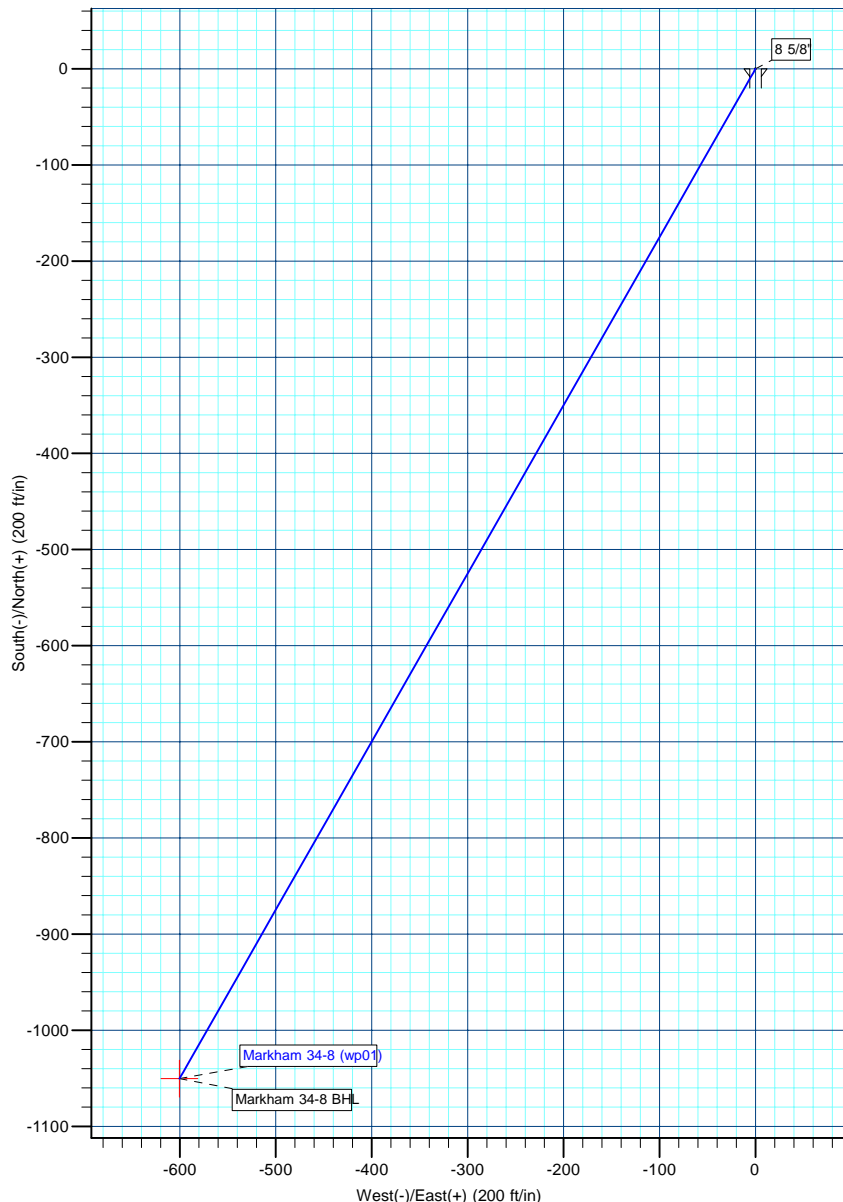
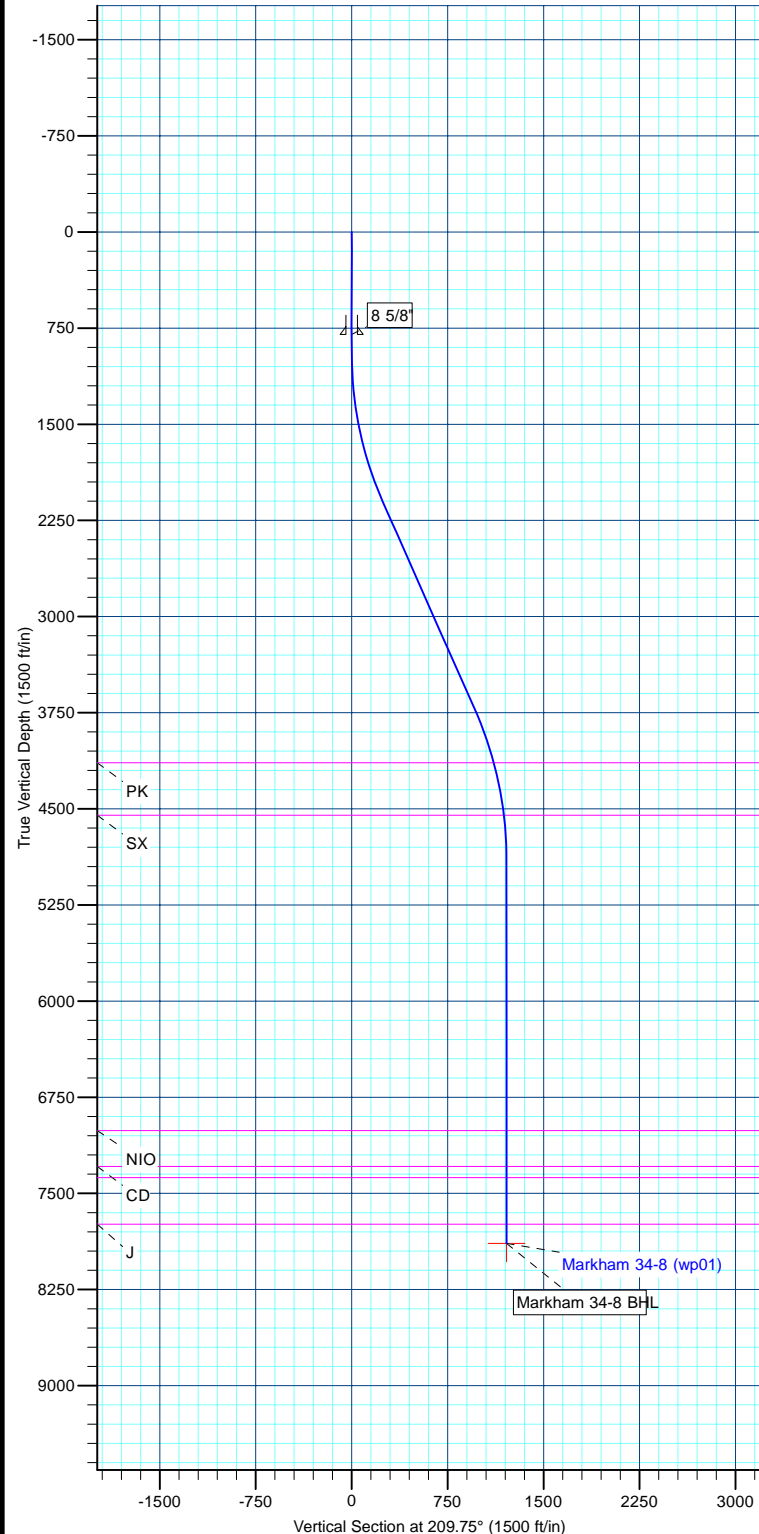
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Markham 34-8 BHL	7890.00	-1050.20	-600.20	1297082.76	3224453.45	40.146097	-104.697089	Point



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00
2146.50	23.93	209.75	2112.01	-213.80	-122.19	2.00	209.75	246.25
3914.44	23.93	209.75	3727.99	-836.40	-478.01	0.00	0.00	963.36
5110.93	0.00	0.00	4890.00	-1050.20	-600.20	2.00	180.00	1209.61
8110.93	0.00	0.00	7890.00	-1050.20	-600.20	0.00	0.00	1209.61



Database:	edm5000p	Local Co-ordinate Reference:	Well Markham 34-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4940.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4940.00ft (Original Well Elev)
Site:	Markham 13-8 pad	North Reference:	True
Well:	Markham 34-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Markham 34-8		
Design:	Markham 34-8 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						Markham 13-8 pad											
Site Position:						Northing:			1,298,137.43 ft			Latitude:			40.148977		
From:			Lat/Long			Easting:			3,225,060.04 ft			Longitude:			-104.694885		
Position Uncertainty:			0.00 ft			Slot Radius:			0 "			Grid Convergence:			0.52		

Well	Markham 34-8					
Well Position	+N-S	1.08 ft	Northing:	1,298,138.36 ft	Latitude:	40.148980
	+E-W	-15.93 ft	Easting:	3,225,044.10 ft	Longitude:	-104.694942
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,940.00 ft

Wellbore	Markham 34-8				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/29/2010	8.87	66.87	53,055

Design	Markham 34-8 (wp01)			
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	209.75

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	
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,146.50	23.93	209.75	2,112.01	-213.80	-122.19	2.00	2.00	0.00	209.75	
3,914.44	23.93	209.75	3,727.99	-836.40	-478.01	0.00	0.00	0.00	0.00	
5,110.94	0.00	0.00	4,890.00	-1,050.20	-600.20	2.00	-2.00	0.00	180.00	
8,110.94	0.00	0.00	7,890.00	-1,050.20	-600.20	0.00	0.00	0.00	0.00	Markham 34-8 BHL

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4940.00ft (Original Well Elev)
Site:	Markham 13-8 pad	North Reference:	True
Well:	Markham 34-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Markham 34-8		
Design:	Markham 34-8 (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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
2,146.50	23.93	209.75	2,112.01	-213.80	-122.19	246.25	2.00	2.00	0.00
3,914.44	23.93	209.75	3,727.99	-836.40	-478.01	963.36	0.00	0.00	0.00
4,352.09	15.18	209.75	4,140.00	-963.45	-550.62	1,109.70	2.00	-2.00	0.00
PK									
4,770.13	6.82	209.75	4,550.00	-1,032.62	-590.15	1,189.36	2.00	-2.00	0.00
SX									
5,110.94	0.00	0.00	4,890.00	-1,050.20	-600.20	1,209.61	2.00	-2.00	0.00
7,230.94	0.00	0.00	7,010.00	-1,050.20	-600.20	1,209.61	0.00	0.00	0.00
NIO									
7,510.94	0.00	0.00	7,290.00	-1,050.20	-600.20	1,209.61	0.00	0.00	0.00
CD									
7,597.94	0.00	0.00	7,377.00	-1,050.20	-600.20	1,209.61	0.00	0.00	0.00
GH									
7,960.94	0.00	0.00	7,740.00	-1,050.20	-600.20	1,209.61	0.00	0.00	0.00
J									
8,110.94	0.00	0.00	7,890.00	-1,050.20	-600.20	1,209.61	0.00	0.00	0.00
Markham 34-8 BHL									

Design 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									
Markham 34-8 BHL	0.00	0.00	7,890.00	-1,050.20	-600.20	1,297,082.75	3,224,453.45	40.146097	-104.697089
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
800.00	800.00	8 5/8"	8-5/8	11	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,352.09	4,140.00	PK			
4,770.13	4,550.00	SX			
7,230.94	7,010.00	NIO			
7,510.94	7,290.00	CD			
7,597.94	7,377.00	GH			
7,960.94	7,740.00	J			

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