

Elm Ridge Exploration Company.

La Plata County, Co (Nad 83)

Sec 11, T33N, R8W

IGE 132

DD

UWI:

API:

Plan: #1

Mesa West Planning Report

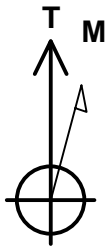
22 December, 2014



Elm Ridge Exploration Company.

Project: La Plata County, Co (Nad 83)
Site: Sec 11, T33N, R8W
Well: IGE 132
Wellbore: DD
Plan: #1

Reference Details - WELL CENTRE
Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone
Northing: 1173232.64
Easting: 2360978.77
Latitude: 37° 7' 18.588 N
Longitude: 107° 41' 30.624 W
Grid Convergence: 1.34° East
Ground Elevation: 6706.0
KB Elevation: Est RKB @ 6720.0usft (KB;14')

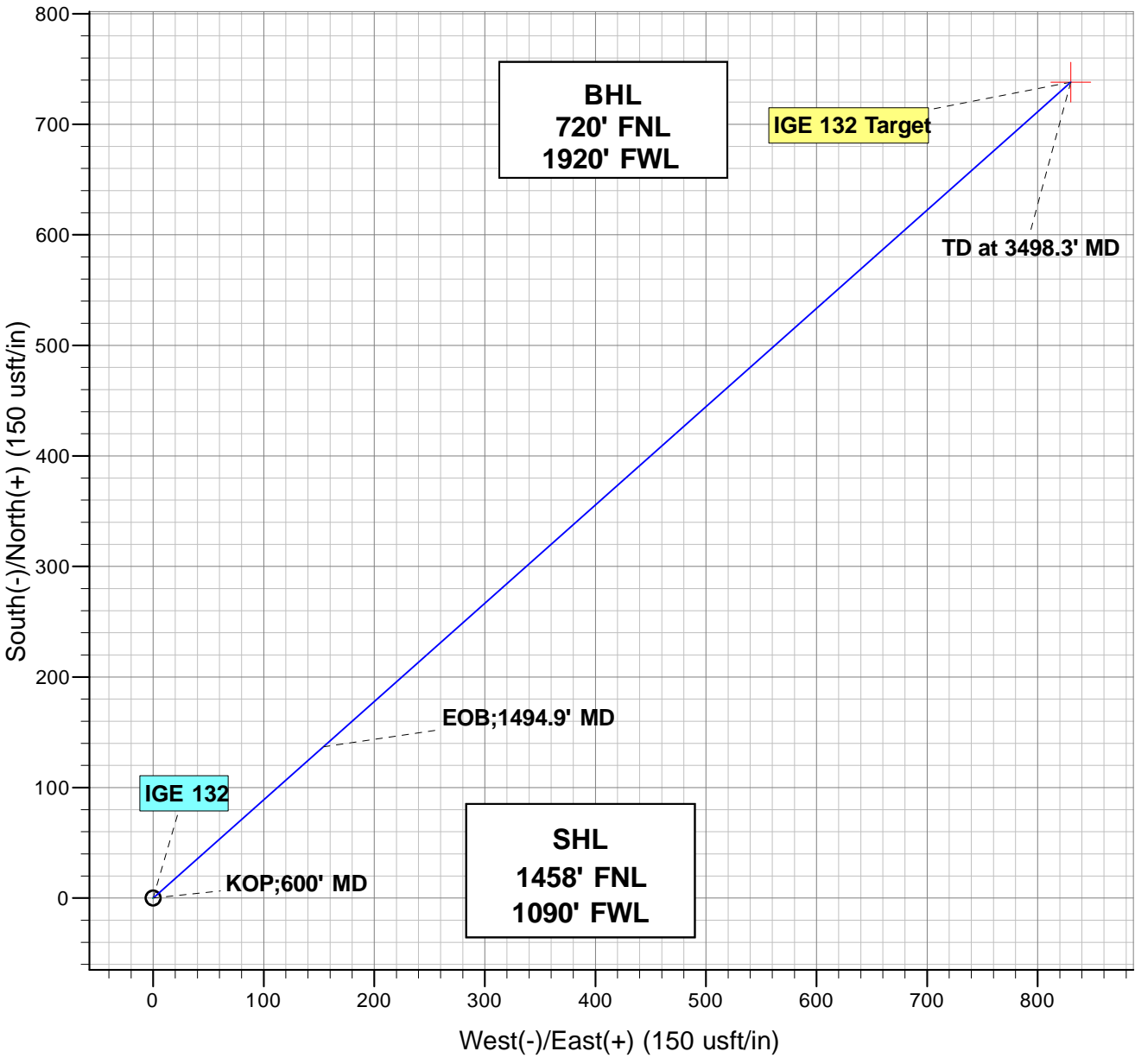
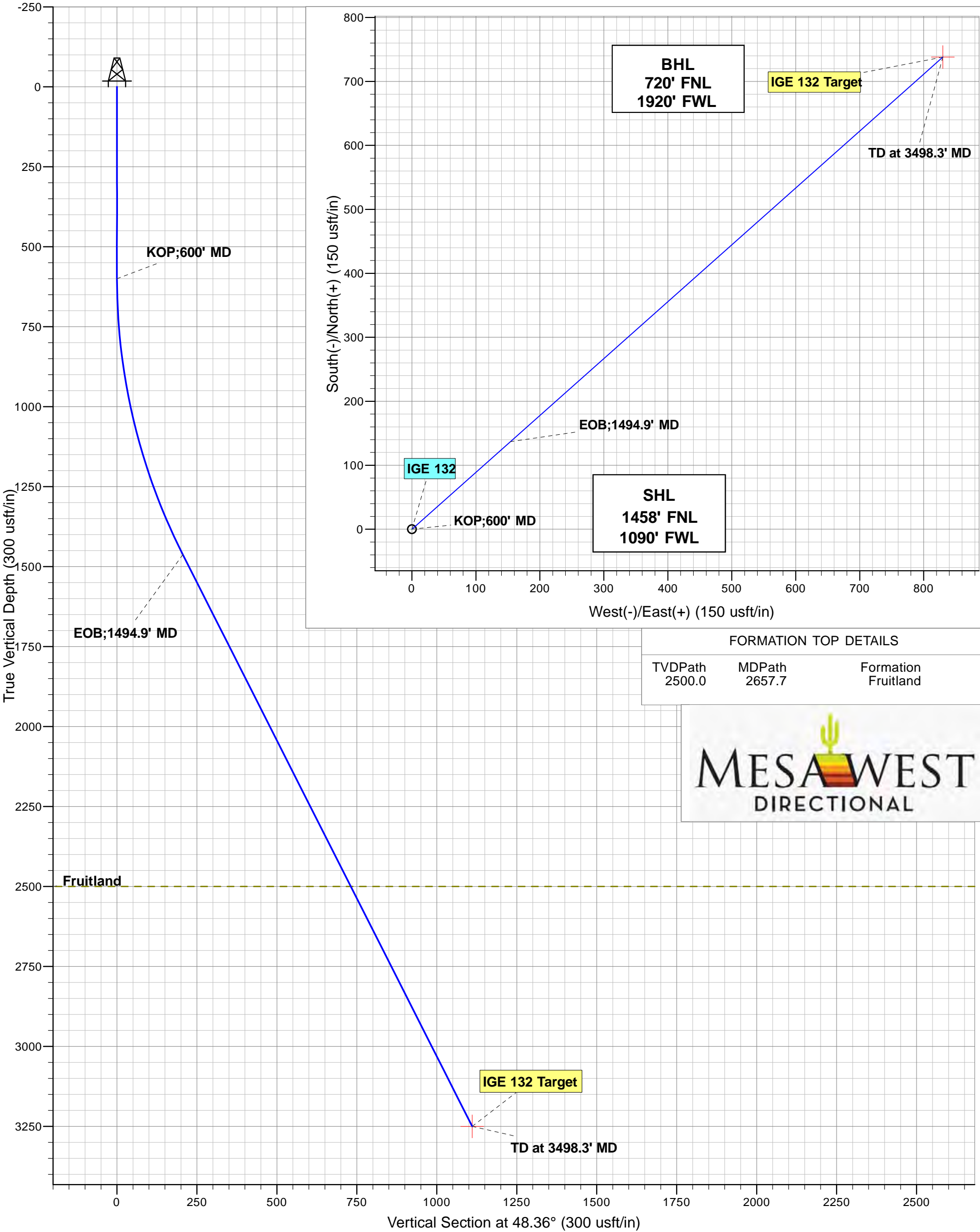


Azimuths to True North
Magnetic North: 9.48°

Magnetic Field
Strength: 50610.7snT
Dip Angle: 63.72°
Date: 22/12/2014
Model: IGRF2010

PLAN DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1494.9	26.85	48.36	1462.5	136.8	153.8	3.00	48.36	205.9	
4	3498.3	26.85	48.36	3250.0	738.0	830.0	0.00	0.00	1110.7	IGE 132 Target



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2500.0	2657.7	Fruitland



Mesa West Directional

Planning Report



Database:	WellPlan Services	Local Co-ordinate Reference:	Well IGE 132
Company:	Elm Ridge Exploration Company.	TVD Reference:	Est RKB @ 6720.0usft (KB;14')
Project:	La Plata County, Co (Nad 83)	MD Reference:	Est RKB @ 6720.0usft (KB;14')
Site:	Sec 11, T33N, R8W	North Reference:	True
Well:	IGE 132	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Plan:	#1		

Project	La Plata County, Co (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site	Sec 11, T33N, R8W				
Site Position:		Northing:	1,170,497.26 usft	Latitude:	37° 6' 51.660 N
From:	Lat/Long	Easting:	2,361,451.27 usft	Longitude:	107° 41' 24.000 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	IGE 132					
Well Position	+N/-S	2,723.6 usft	Northing:	1,173,232.64 usft	Latitude:	37° 7' 18.588 N
	+E/-W	-536.5 usft	Easting:	2,360,978.77 usft	Longitude:	107° 41' 30.624 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	6,706.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	22/12/2014	9.48	63.72	50,611

Plan	#1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	48.36

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,494.9	26.85	48.36	1,462.5	136.8	153.8	3.00	3.00	0.00	48.36	
3,498.3	26.85	48.36	3,250.0	738.0	830.0	0.00	0.00	0.00	0.00	IGE 132 Target

Mesa West Directional

Planning Report



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Site:	Sec 11, T33N, R8W	North Reference:	True
Well:	IGE 132	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Plan:	#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	6,720.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;600' MD										
600.0	0.00	0.00	600.0	6,120.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	3.00	48.36	700.0	6,020.0	1.7	2.0	2.6	3.00	3.00	0.00
800.0	6.00	48.36	799.6	5,920.4	7.0	7.8	10.5	3.00	3.00	0.00
900.0	9.00	48.36	898.8	5,821.2	15.6	17.6	23.5	3.00	3.00	0.00
1,000.0	12.00	48.36	997.1	5,722.9	27.7	31.2	41.7	3.00	3.00	0.00
1,100.0	15.00	48.36	1,094.3	5,625.7	43.2	48.6	65.1	3.00	3.00	0.00
1,200.0	18.00	48.36	1,190.2	5,529.8	62.1	69.9	93.5	3.00	3.00	0.00
1,300.0	21.00	48.36	1,284.4	5,435.6	84.3	94.8	126.9	3.00	3.00	0.00
1,400.0	24.00	48.36	1,376.8	5,343.2	109.7	123.4	165.1	3.00	3.00	0.00
EOB;1494.9' MD										
1,494.9	26.85	48.36	1,462.5	5,257.5	136.8	153.8	205.9	3.00	3.00	0.00
1,500.0	26.85	48.36	1,467.1	5,252.9	138.3	155.6	208.2	0.00	0.00	0.00
1,600.0	26.85	48.36	1,556.3	5,163.7	168.3	189.3	253.3	0.00	0.00	0.00
1,700.0	26.85	48.36	1,645.5	5,074.5	198.3	223.1	298.5	0.00	0.00	0.00
1,800.0	26.85	48.36	1,734.7	4,985.3	228.3	256.8	343.6	0.00	0.00	0.00
1,900.0	26.85	48.36	1,823.9	4,896.1	258.4	290.6	388.8	0.00	0.00	0.00
2,000.0	26.85	48.36	1,913.2	4,806.8	288.4	324.3	434.0	0.00	0.00	0.00
2,100.0	26.85	48.36	2,002.4	4,717.6	318.4	358.1	479.1	0.00	0.00	0.00
2,200.0	26.85	48.36	2,091.6	4,628.4	348.4	391.8	524.3	0.00	0.00	0.00
2,300.0	26.85	48.36	2,180.8	4,539.2	378.4	425.6	569.5	0.00	0.00	0.00
2,400.0	26.85	48.36	2,270.0	4,450.0	408.4	459.3	614.6	0.00	0.00	0.00
2,500.0	26.85	48.36	2,359.3	4,360.7	438.4	493.1	659.8	0.00	0.00	0.00
2,600.0	26.85	48.36	2,448.5	4,271.5	468.4	526.8	704.9	0.00	0.00	0.00
Fruitland										
2,657.7	26.85	48.36	2,500.0	4,220.0	485.7	546.3	731.0	0.00	0.00	0.00
2,700.0	26.85	48.36	2,537.7	4,182.3	498.4	560.6	750.1	0.00	0.00	0.00
2,800.0	26.85	48.36	2,626.9	4,093.1	528.4	594.3	795.3	0.00	0.00	0.00
2,900.0	26.85	48.36	2,716.2	4,003.8	558.4	628.1	840.4	0.00	0.00	0.00
3,000.0	26.85	48.36	2,805.4	3,914.6	588.5	661.8	885.6	0.00	0.00	0.00
3,100.0	26.85	48.36	2,894.6	3,825.4	618.5	695.6	930.8	0.00	0.00	0.00
3,200.0	26.85	48.36	2,983.8	3,736.2	648.5	729.3	975.9	0.00	0.00	0.00
3,300.0	26.85	48.36	3,073.0	3,647.0	678.5	763.1	1,021.1	0.00	0.00	0.00
3,400.0	26.85	48.36	3,162.3	3,557.7	708.5	796.8	1,066.2	0.00	0.00	0.00
TD at 3498.3' MD - IGE 132 Target										
3,498.3	26.85	48.36	3,250.0	3,470.0	738.0	830.0	1,110.7	0.00	0.00	0.00

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
IGE 132 Target	0.00	0.00	3,250.0	738.0	830.0	1,173,950.96	2,361,825.86	37° 7' 25.884 N		107° 41' 20.376 W
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Mesa West Directional

Planning Report



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Wellbore:	DD		
Plan:	#1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Subsea Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,657.7	2,500.0	4,220.0	Fruitland		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
600.0	600.0	0.0	0.0	KOP;600' MD	
1,494.9	1,462.5	136.8	153.8	EOB;1494.9' MD	
3,498.3	3,250.0	738.0	830.0	TD at 3498.3' MD	