

Departure Energy Services (US) LP
Phone: 307.265.2231
Fax: 307.472.5064
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Departure
Energy Services (US) LP

Laramie Energy II, LLC

MESA CO

Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)

Hawxhurst 24-15A

DD

Plan: Plan #1

Planning Report

26 July, 2010

Laramie Energy II, LLC

Site: Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)
Well: Hawxhurst 24-15A
Wellbore: DD
Design: Plan #1

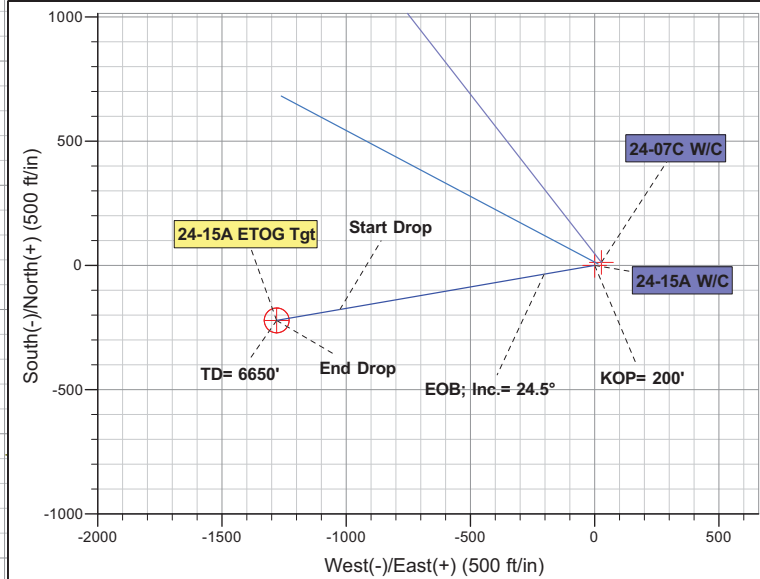
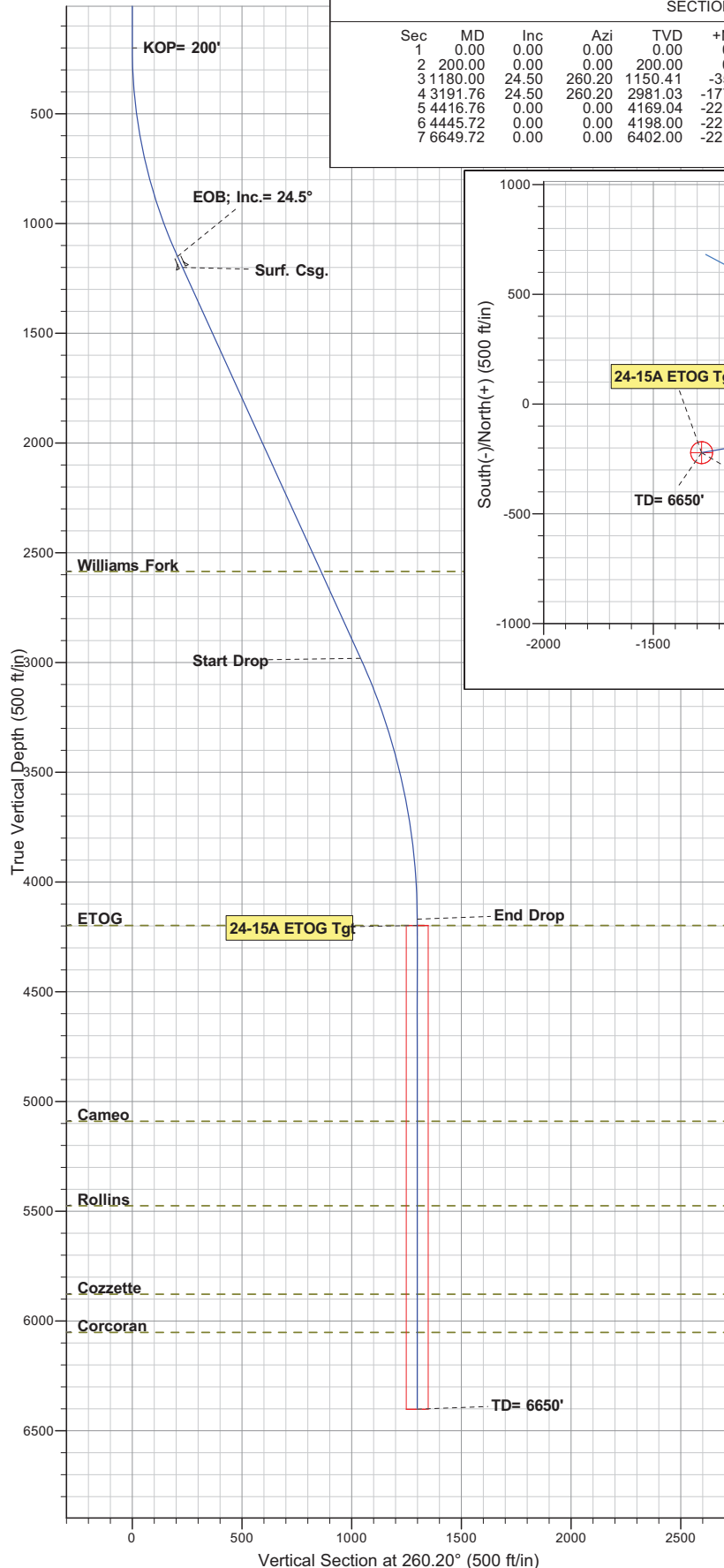
Reference Details - WELL CENTRE
Geodetic System: Universal Transverse Mercator
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
Northing: 4349670.50
Easting: 246703.75
Latitude: 39° 15' 33.804 N
Longitude: 107° 56' 8.408 W
Grid Convergence: 1.86° East
Ground Elevation: 6355.40
KB Elevation: Est. KB @ 6375.00ft



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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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1180.00	24.50	260.20	1150.41	-35.13	-203.34	2.50	260.20	206.35	
4	3191.76	24.50	260.20	2981.03	-177.16	-1025.43	0.00	0.00	1040.62	
5	4416.76	0.00	0.00	4169.04	-221.08	-1279.60	2.00	180.00	1298.56	
6	4445.72	0.00	0.00	4198.00	-221.08	-1279.60	0.00	0.00	1298.56	24-15A ETOG Tgt
7	6649.72	0.00	0.00	6402.00	-221.08	-1279.60	0.00	0.00	1298.56	



T
M
Azimuths to True North
Magnetic North: 10.41°
Magnetic Field
Strength: 52216.1snT
Dip Angle: 65.58°
Date: 7/23/2010
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.00	200.00	KOP= 200'
1150.41	1180.00	EOB; Inc.= 24.5°
2981.03	3191.76	Start Drop
4169.04	4416.76	End Drop
6401.99	6649.71	TD= 6650'

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2585.00	2756.54	Williams Fork
4198.00	4445.72	ETOG
5090.00	5337.72	Cameo
5475.00	5722.72	Rollins
5878.00	6125.72	Cozzette
6052.00	6299.72	Corcoran



Database:	EDM 2003.21 DB	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Company:	Laramie Energy II, LLC	TVD Reference:	Est. KB @ 6375.00ft
Project:	MESA CO	MD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	North Reference:	True
Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	MESA CO		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)				
Site Position:		Northing:	4,349,673.90 m	Latitude:	39° 15' 33.923 N
From:	Lat/Long	Easting:	246,712.24 m	Longitude:	107° 56' 8.059 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.86 °

Well	Hawxhurst 24-15A					
Well Position	+N/-S	0.00 ft	Northing:	4,349,670.50 m	Latitude:	39° 15' 33.804 N
	+E/-W	0.00 ft	Easting:	246,703.75 m	Longitude:	107° 56' 8.408 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,355.40 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/23/2010	10.41	65.58	52,216

Design	Plan #1			
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	260.20

Plan Sections											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	SS (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	-6,375.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	-6,175.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,180.00	24.50	260.20	1,150.41	-5,224.59	-35.13	-203.34	2.50	2.50	0.00	260.20	
3,191.76	24.50	260.20	2,981.03	-3,393.97	-177.16	-1,025.43	0.00	0.00	0.00	0.00	
4,416.76	0.00	0.00	4,169.04	-2,205.96	-221.08	-1,279.60	2.00	-2.00	0.00	180.00	
4,445.72	0.00	0.00	4,198.00	-2,177.00	-221.08	-1,279.60	0.00	0.00	0.00	0.00	24-15A ETOG Tgt
6,649.72	0.00	0.00	6,402.00	27.00	-221.08	-1,279.60	0.00	0.00	0.00	0.00	

Database:	EDM 2003.21 DB	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Company:	Laramie Energy II, LLC	TVD Reference:	Est. KB @ 6375.00ft
Project:	MESA CO	MD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	North Reference:	True
Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	SS (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
100.00	0.00	0.00	100.00	6,275.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP= 200'										
200.00	0.00	0.00	200.00	6,175.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2.50	260.20	299.97	6,075.03	-0.37	-2.15	2.18	2.50	2.50	0.00
400.00	5.00	260.20	399.75	5,975.25	-1.48	-8.59	8.72	2.50	2.50	0.00
500.00	7.50	260.20	499.14	5,875.86	-3.34	-19.32	19.61	2.50	2.50	0.00
600.00	10.00	260.20	597.97	5,777.03	-5.93	-34.31	34.82	2.50	2.50	0.00
700.00	12.50	260.20	696.04	5,678.96	-9.25	-53.53	54.33	2.50	2.50	0.00
800.00	15.00	260.20	793.17	5,581.83	-13.30	-76.95	78.09	2.50	2.50	0.00
900.00	17.50	260.20	889.17	5,485.83	-18.06	-104.52	106.07	2.50	2.50	0.00
1,000.00	20.00	260.20	983.85	5,391.15	-23.53	-136.20	138.21	2.50	2.50	0.00
1,100.00	22.50	260.20	1,077.05	5,297.95	-29.70	-171.91	174.46	2.50	2.50	0.00
EOB; Inc.= 24.5°										
1,180.00	24.50	260.20	1,150.41	5,224.59	-35.13	-203.34	206.35	2.50	2.50	0.00
1,200.00	24.50	260.20	1,168.61	5,206.39	-36.54	-211.51	214.65	0.00	0.00	0.00
Surf. Csg.										
1,234.50	24.50	260.20	1,200.00	5,175.00	-38.98	-225.61	228.95	0.00	0.00	0.00
1,300.00	24.50	260.20	1,259.60	5,115.40	-43.60	-252.38	256.12	0.00	0.00	0.00
1,400.00	24.50	260.20	1,350.60	5,024.40	-50.66	-293.24	297.59	0.00	0.00	0.00
1,500.00	24.50	260.20	1,441.59	4,933.41	-57.72	-334.11	339.06	0.00	0.00	0.00
1,600.00	24.50	260.20	1,532.59	4,842.41	-64.78	-374.97	380.52	0.00	0.00	0.00
1,700.00	24.50	260.20	1,623.59	4,751.41	-71.84	-415.83	421.99	0.00	0.00	0.00
1,800.00	24.50	260.20	1,714.58	4,660.42	-78.90	-456.70	463.46	0.00	0.00	0.00
1,900.00	24.50	260.20	1,805.58	4,569.42	-85.96	-497.56	504.93	0.00	0.00	0.00
2,000.00	24.50	260.20	1,896.58	4,478.42	-93.02	-538.43	546.40	0.00	0.00	0.00
2,100.00	24.50	260.20	1,987.57	4,387.43	-100.08	-579.29	587.87	0.00	0.00	0.00
2,200.00	24.50	260.20	2,078.57	4,296.43	-107.14	-620.15	629.34	0.00	0.00	0.00
2,300.00	24.50	260.20	2,169.56	4,205.44	-114.20	-661.02	670.81	0.00	0.00	0.00
2,400.00	24.50	260.20	2,260.56	4,114.44	-121.26	-701.88	712.28	0.00	0.00	0.00
2,500.00	24.50	260.20	2,351.56	4,023.44	-128.32	-742.74	753.75	0.00	0.00	0.00
2,600.00	24.50	260.20	2,442.55	3,932.45	-135.38	-783.61	795.22	0.00	0.00	0.00
2,700.00	24.50	260.20	2,533.55	3,841.45	-142.44	-824.47	836.69	0.00	0.00	0.00
Williams Fork										
2,756.54	24.50	260.20	2,585.00	3,790.00	-146.44	-847.58	860.14	0.00	0.00	0.00
2,800.00	24.50	260.20	2,624.54	3,750.46	-149.50	-865.34	878.16	0.00	0.00	0.00
2,900.00	24.50	260.20	2,715.54	3,659.46	-156.56	-906.20	919.63	0.00	0.00	0.00
3,000.00	24.50	260.20	2,806.54	3,568.46	-163.62	-947.06	961.10	0.00	0.00	0.00
3,100.00	24.50	260.20	2,897.53	3,477.47	-170.68	-987.93	1,002.56	0.00	0.00	0.00
Start Drop										
3,191.76	24.50	260.20	2,981.03	3,393.97	-177.16	-1,025.43	1,040.62	0.00	0.00	0.00
3,200.00	24.34	260.20	2,988.53	3,386.47	-177.74	-1,028.78	1,044.02	2.00	-2.00	0.00
3,300.00	22.34	260.20	3,080.35	3,294.65	-184.49	-1,067.81	1,083.63	2.00	-2.00	0.00
3,400.00	20.34	260.20	3,173.49	3,201.51	-190.68	-1,103.66	1,120.01	2.00	-2.00	0.00
3,500.00	18.34	260.20	3,267.85	3,107.15	-196.32	-1,136.29	1,153.12	2.00	-2.00	0.00
3,600.00	16.34	260.20	3,363.30	3,011.70	-201.39	-1,165.65	1,182.92	2.00	-2.00	0.00
3,700.00	14.34	260.20	3,459.73	2,915.27	-205.89	-1,191.71	1,209.36	2.00	-2.00	0.00
3,800.00	12.34	260.20	3,557.03	2,817.97	-209.82	-1,214.43	1,232.42	2.00	-2.00	0.00
3,900.00	10.34	260.20	3,655.08	2,719.92	-213.16	-1,233.80	1,252.08	2.00	-2.00	0.00
4,000.00	8.34	260.20	3,753.75	2,621.25	-215.92	-1,249.78	1,268.30	2.00	-2.00	0.00
4,100.00	6.34	260.20	3,852.92	2,522.08	-218.10	-1,262.36	1,281.07	2.00	-2.00	0.00
4,200.00	4.34	260.20	3,952.49	2,422.51	-219.68	-1,271.53	1,290.36	2.00	-2.00	0.00
4,300.00	2.34	260.20	4,052.31	2,322.69	-220.67	-1,277.26	1,296.18	2.00	-2.00	0.00



Database:	EDM 2003.21 DB	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Company:	Laramie Energy II, LLC	TVD Reference:	Est. KB @ 6375.00ft
Project:	MESA CO	MD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	North Reference:	True
Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	SS (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,400.00	0.34	260.20	4,152.28	2,222.72	-221.07	-1,279.55	1,298.51	2.00	-2.00	0.00
End Drop										
4,416.76	0.00	0.00	4,169.04	2,205.96	-221.08	-1,279.60	1,298.56	2.00	-2.00	595.48
ETOG - 24-15A ETOG Tgt										
4,445.72	0.00	0.00	4,198.00	2,177.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
4,500.00	0.00	0.00	4,252.28	2,122.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
4,600.00	0.00	0.00	4,352.28	2,022.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
4,700.00	0.00	0.00	4,452.28	1,922.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
4,800.00	0.00	0.00	4,552.28	1,822.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
4,900.00	0.00	0.00	4,652.28	1,722.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,000.00	0.00	0.00	4,752.28	1,622.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,100.00	0.00	0.00	4,852.28	1,522.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,200.00	0.00	0.00	4,952.28	1,422.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,300.00	0.00	0.00	5,052.28	1,322.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
Cameo										
5,337.72	0.00	0.00	5,090.00	1,285.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,400.00	0.00	0.00	5,152.28	1,222.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,500.00	0.00	0.00	5,252.28	1,122.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,600.00	0.00	0.00	5,352.28	1,022.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,700.00	0.00	0.00	5,452.28	922.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
Rollins										
5,722.72	0.00	0.00	5,475.00	900.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,800.00	0.00	0.00	5,552.28	822.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
5,900.00	0.00	0.00	5,652.28	722.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,000.00	0.00	0.00	5,752.28	622.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,100.00	0.00	0.00	5,852.28	522.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
Cozzette										
6,125.72	0.00	0.00	5,878.00	497.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,200.00	0.00	0.00	5,952.28	422.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
Corcoran										
6,299.72	0.00	0.00	6,052.00	323.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,300.00	0.00	0.00	6,052.28	322.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,400.00	0.00	0.00	6,152.28	222.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,500.00	0.00	0.00	6,252.28	122.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,600.00	0.00	0.00	6,352.28	22.72	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
TD= 6650'										
6,649.71	0.00	0.00	6,401.99	-26.99	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00
6,649.72	0.00	0.00	6,402.00	-27.00	-221.08	-1,279.60	1,298.56	0.00	0.00	0.00



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Company:	Laramie Energy II, LLC	TVD Reference:	Est. KB @ 6375.00ft
Project:	MESA CO	MD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	North Reference:	True
Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets										
Target Name - hit/miss target - Shape	Dip Angle	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude	
24-15A ETOG Tot - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,198.00	-221.08	-1,279.60	4,349,615.81	246,311.74	39° 15' 31.620 N	107° 56' 24.670 W	
24-15A W/C - plan misses target center by 100.00ft at 100.00ft MD (100.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	0.00	0.00	4,349,670.50	246,703.75	39° 15' 33.804 N	107° 56' 8.408 W	
24-07C W/C - plan misses target center by 104.40ft at 100.00ft MD (100.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	12.02	27.48	4,349,673.90	246,712.24	39° 15' 33.923 N	107° 56' 8.059 W	

Casing Points				
MD (ft)	TVD (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,234.50	1,200.00	Surf. Csg.		

Formations						
MD (ft)	TVD (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,756.54	2,585.00	Williams Fork		0.00		
4,445.72	4,198.00	ETOG		0.00		
5,337.72	5,090.00	Cameo		0.00		
5,722.72	5,475.00	Rollins		0.00		
6,125.72	5,878.00	Cozzette		0.00		
6,299.72	6,052.00	Corcoran		0.00		

Plan Annotations				
MD (ft)	TVD (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	KOP= 200'
1,180.00	1,150.41	-35.13	-203.34	EOB; Inc.= 24.5°
3,191.76	2,981.03	-177.16	-1,025.43	Start Drop
4,416.76	4,169.04	-221.08	-1,279.60	End Drop
6,649.71	6,401.99	-221.08	-1,279.60	TD= 6650'

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Project:	MESA CO	TVD Reference:	Est. KB @ 6375.00ft
Reference Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	MD Reference:	Est. KB @ 6375.00ft
Site Error:	0.00ft	North Reference:	True
Reference Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 100.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Risk Settings		
Vertical Depth for Analysis:	ft	(Below TVD Reference Datum)
Level of Acceptable Risk (1 in):		
Minimum Separation:	0 ft	

Survey Tool Program		Date	7/23/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	6,649.72	Plan #1 (DD)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth	Offset Measured Depth	Distance		Separation Factor	Warning
			Between Centres	Between Ellipses		
Offset Well - Wellbore - Design	(ft)	(ft)	(ft)	(ft)		
Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)						
Hawxhurst 24-07C - DD - Plan #1	200.00	200.00	30.00	29.37	47.679	CC, ES
Hawxhurst 24-07C - DD - Plan #1	500.00	498.85	47.59	45.47	22.430	SF
Hawxhurst 24-10B - DD - Plan #1	200.00	200.00	14.94	14.31	23.676	CC
Hawxhurst 24-10B - DD - Plan #1	250.00	250.20	15.14	14.29	17.745	ES
Hawxhurst 24-10B - DD - Plan #1	450.00	450.68	21.11	19.33	11.849	SF

Offset Design	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad) - Hawxhurst 24-07C - DD - Plan #1												Offset Site Error:	0.00 ft
Survey Program:	0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Separation Factor	Probability of Collision	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	66.37	30.00							
50.00	50.00	50.00	50.00	0.03	0.04	66.37	30.00	29.92	0.08	380.748				
100.00	100.00	100.00	100.00	0.09	0.09	66.37	30.00	29.82	0.18	167.024				
150.00	150.00	150.00	150.00	0.20	0.20	66.37	30.00	29.59	0.40	74.181				
200.00	200.00	200.00	200.00	0.32	0.31	66.37	30.00	29.37	0.63	47.679			CC, ES	
250.00	250.00	250.22	250.21	0.42	0.43	165.00	30.34	29.49	0.85	35.545				
300.00	299.97	300.36	300.30	0.53	0.55	161.68	31.45	30.38	1.08	29.237				
350.00	349.89	350.36	350.15	0.64	0.68	156.67	33.52	32.20	1.32	25.468				
400.00	399.75	400.16	399.66	0.76	0.81	150.68	36.77	35.21	1.55	23.647				
450.00	449.50	449.67	448.71	0.89	0.95	144.46	41.42	39.58	1.84	22.546				
500.00	499.14	498.85	497.19	1.03	1.10	138.60	47.59	45.47	2.12	22.430			SF	
550.00	548.64	547.63	545.02	1.19	1.29	133.42	55.33	52.87	2.46	22.514				
600.00	597.97	595.94	592.09	1.35	1.48	129.00	64.63	61.83	2.80	23.112				
650.00	647.11	643.74	638.33	1.55	1.72	125.31	75.43	72.24	3.19	23.649				
700.00	696.04	690.98	683.65	1.74	1.96	122.24	87.67	84.09	3.58	24.476				



Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Project:	MESA CO	TVD Reference:	Est. KB @ 6375.00ft
Reference Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	MD Reference:	Est. KB @ 6375.00ft
Site Error:	0.00ft	North Reference:	True
Reference Well:	Hawxhurst 24-15A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 DB
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance					Risked Separation Factor	Probability of Collision	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	65.51	14.94						
50.00	50.00	50.00	50.00	0.03	0.05	65.51	14.94	14.86	0.08	187.271			
100.00	100.00	100.00	100.00	0.09	0.09	65.51	14.94	14.76	0.18	82.279			
150.00	150.00	150.00	150.00	0.20	0.20	65.51	14.94	14.54	0.41	36.771			
200.00	200.00	200.00	200.00	0.32	0.32	65.51	14.94	14.31	0.63	23.676			CC
250.00	250.00	250.20	250.19	0.42	0.43	164.19	15.14	14.29	0.85	17.745			ES
300.00	299.97	300.38	300.35	0.53	0.54	160.99	15.76	14.69	1.07	14.712			
350.00	349.89	350.53	350.42	0.64	0.66	156.21	16.90	15.60	1.30	12.999			
400.00	399.75	400.64	400.38	0.76	0.78	150.56	18.65	17.12	1.52	12.234			
450.00	449.50	450.68	450.18	0.89	0.91	144.74	21.11	19.33	1.78	11.849			SF
500.00	499.14	500.66	499.79	1.03	1.04	139.30	24.35	22.31	2.04	11.931			
550.00	548.64	550.54	549.17	1.19	1.20	134.50	28.38	26.03	2.35	12.094			
600.00	597.97	600.32	598.29	1.35	1.36	130.44	33.19	30.53	2.66	12.481			
650.00	647.11	649.98	647.10	1.55	1.55	127.06	38.78	35.75	3.03	12.805			
700.00	696.04	699.52	695.57	1.74	1.74	124.26	45.13	41.73	3.40	13.265			
750.00	744.74	748.91	743.67	1.98	1.97	121.95	52.22	48.38	3.84	13.596			
800.00	793.17	798.14	791.37	2.21	2.20	120.02	60.02	55.74	4.28	14.020			
850.00	841.32	847.21	838.64	2.48	2.46	118.41	68.54	63.75	4.79	14.302			
900.00	889.17	896.10	885.44	2.76	2.72	117.04	77.74	72.44	5.30	14.656			
950.00	936.68	944.79	931.75	3.07	3.02	115.87	87.63	81.74	5.89	14.879			
1,000.00	983.85	993.29	977.55	3.39	3.32	114.85	98.18	91.70	6.48	15.160			