

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 746-1283 Fax: (575) 746-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OCT 02 2013

Form C-102

Revised August 1, 2011

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Submit one copy to appropriate
District Office

JAN 17 2013

X AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043- 21140	² Pool Code 39189	³ Bureau of Land Management LINDRITH GALLUP-DAKOTA, WEST
⁴ Property Code 27875	⁵ Property Name BONANZA	⁶ Well Number 11
⁷ OGRID No. 149052	⁸ Operator Name ELM RIDGE EXPLORATION COMPANY, LLC	⁹ Elevation 7180

¹⁰ Surface Location

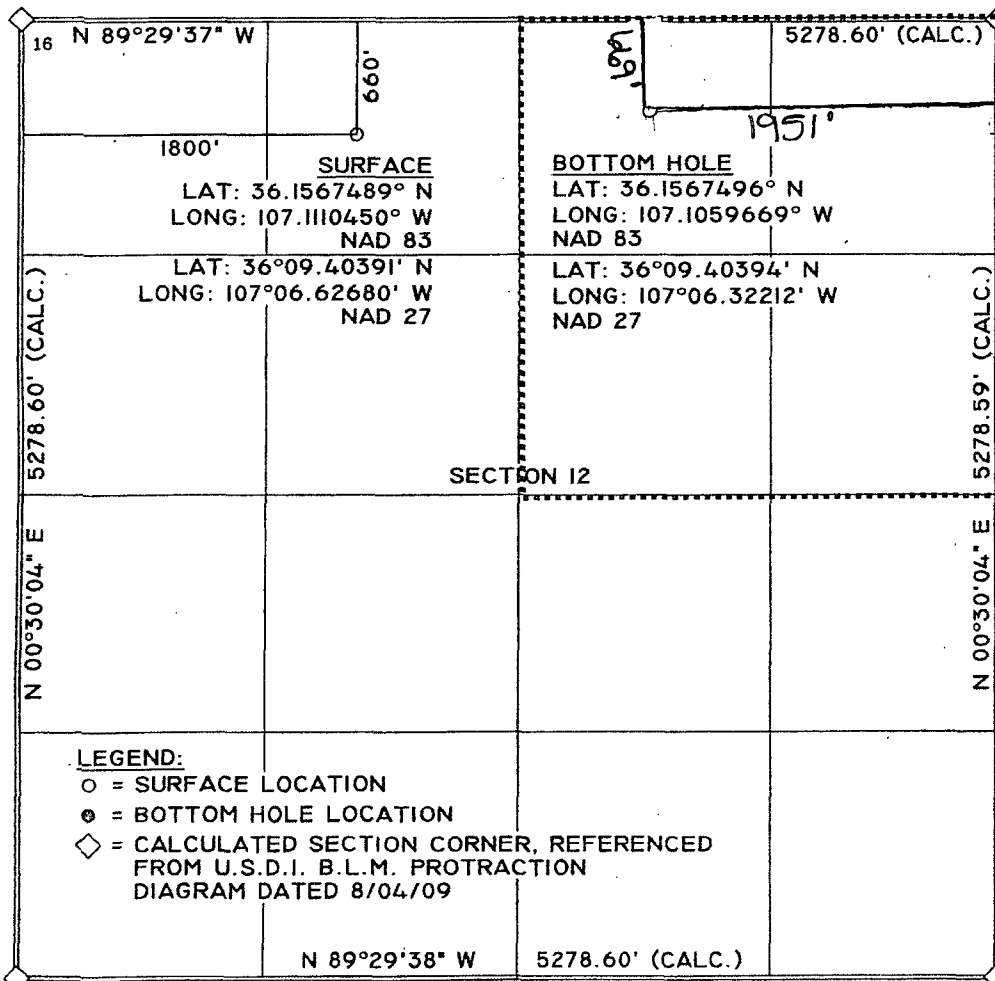
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	12	22 N	3 W	200	660	NORTH	1800	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	12	22 N	3 W	200	669'	NORTH	1951'	EAST	SANDOVAL

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
160 ^{NE} / ₄			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Amy Mackey
Date: 10-1-13
E-mail Address: amackey10@elmridge.net

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

09/27/12

Date of Survey

Signature and Seal of Professional Surveyor



Certificate Number

14831

10-26-2012

Elm Ridge Exploration Company.

Sandoval County, NM (Nad 83)

Sec 12 T-22-N,R-3-W

Bonanza #11

DD

UWI:

WL:

OIL CONS. DIV DIST. 3

OCT 02 2013

Survey: Final

Standard Survey Report

13 August, 2013


MESA WEST
DIRECTIONAL

Elm Ridge Exploration Company.

Site: Sec 12 T-22-N,R-3-W
Well: Bonanza #11
Wellbore: DD
Design: Final

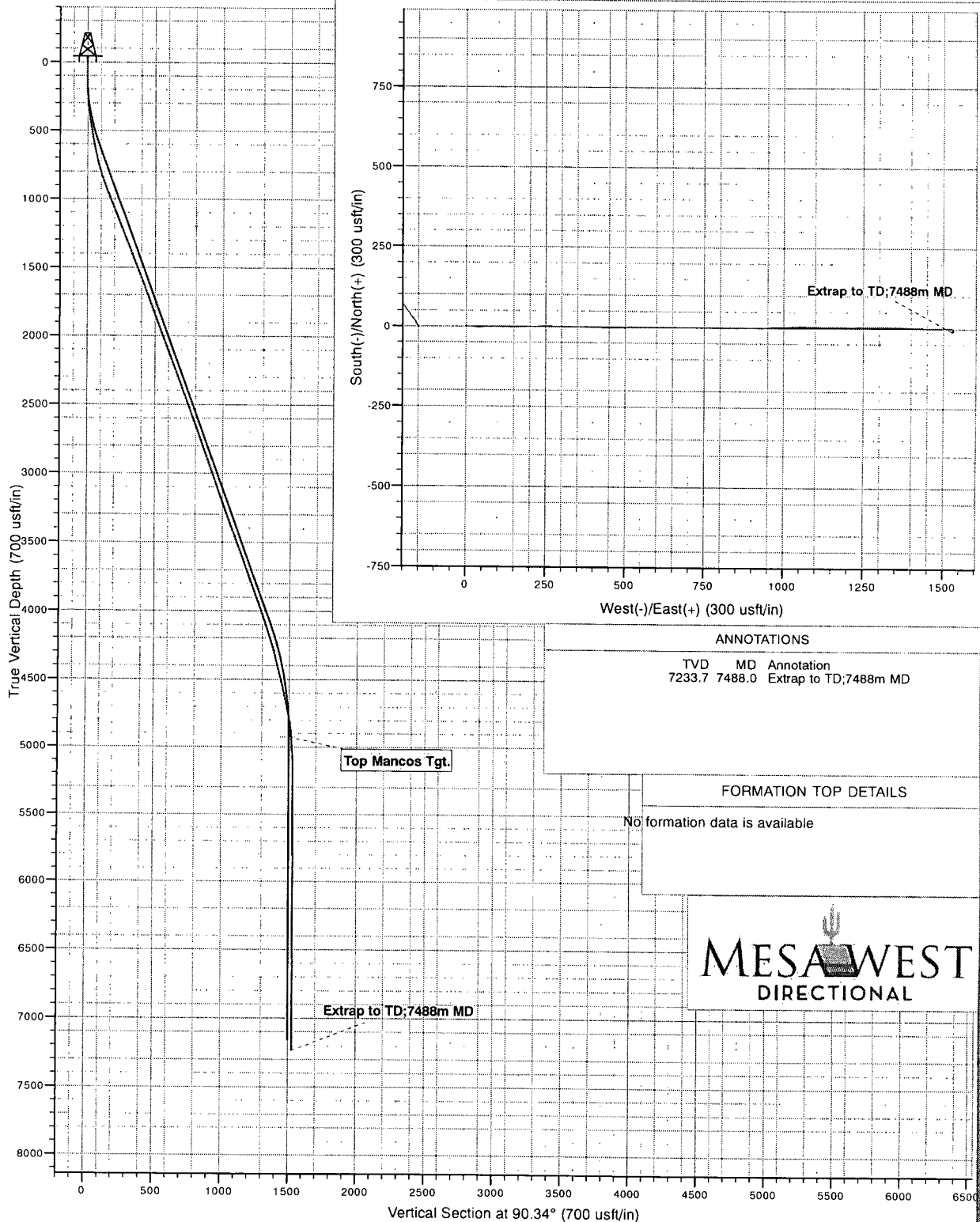
Reference Details - WELL CENTRE

Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
Northing: 1877448.86
Easting: 1386236.69
Latitude: 36° 9' 24.296 N
Longitude: 107° 6' 39.762 W
Grid Convergence: 0.51° East
Ground Elevation: 7138.0
KB Elevation: RKB @ 7150.0usft (Bearcat #1)

T Azimuths to True North
Magnetic North: 9.32°
Magnetic Field
Strength: 50294.4snT
Dip Angle: 63.04°
Date: 5/2/2013
Model: IGRF2010

PLAN DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	-42.0	0.00	0.00	-42.0	0.0	0.0	0.00	0.00	0.0	
2	108.0	0.00	0.00	108.0	0.0	0.0	0.00	0.00	0.0	
3	608.7	20.03	89.99	598.6	0.0	86.6	4.00	89.99	86.6	
4	4328.1	20.03	89.99	4093.0	0.3	1360.5	0.00	0.00	1360.5	
5	5129.3	0.00	0.00	4878.0	0.3	1499.1	2.50	180.00	1499.1	
6	5179.3	0.00	0.00	4928.0	0.3	1499.1	0.00	0.00	1499.1	Top Mancos Tgt.
7	7409.3	0.00	0.00	7158.0	0.3	1499.1	0.00	0.00	1499.1	



ANNOTATIONS

TVD MD Annotation
7233.7 7488.0 Extrap to TD:7488m MD

FORMATION TOP DETAILS

No formation data is available

MESA WEST
DIRECTIONAL

Mesa West Directional

Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #11
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7150.0usft (Bearcat #1)
Site:	Sec 12 T-22-N,R-3-W	MD Reference:	RKB @ 7150.0usft (Bearcat #1)
Well:	Bonanza #11	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM 5000.1 Single User Db

Project	Sandoval County, NM (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site		Sec 12 T-22-N,R-3-W			
Site Position:		Northing:	1,877,448.86 usft	Latitude:	36° 9' 24.296 N
From:	Lat/Long	Easting:	1,386,236.69 usft	Longitude:	107° 6' 39.762 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.51 °

Well	Bonanza #11					
Well Position	+N/-S	0.0 usft	Northing:	1,877,448.86 usft	Latitude:	36° 9' 24.296 N
	+E/-W	0.0 usft	Easting:	1,386,236.69 usft	Longitude:	107° 6' 39.762 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	7,138.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2013	9.32	63.04	50,294

Design	Final				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	90.34	

Survey Program	Date 8/13/2013				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
52.0	7,488.0 Final (DD)		MWD	MWD - Standard	

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	-7,150.0	0.0	0.0	0.0	0.00	0.00	0.00
52.0	0.30	281.70	52.0	-7,098.0	0.0	-0.1	-0.1	0.58	0.58	0.00
81.0	0.10	213.70	81.0	-7,069.0	0.0	-0.2	-0.2	0.96	-0.69	-234.48
112.0	0.30	278.70	112.0	-7,038.0	0.0	-0.3	-0.3	0.88	0.65	209.68
141.0	0.90	99.80	141.0	-7,009.0	0.0	-0.2	-0.2	4.14	2.07	-616.90
172.0	1.90	82.60	172.0	-6,978.0	0.0	0.6	0.6	3.46	3.23	-55.48
202.0	2.10	80.90	202.0	-6,948.0	0.2	1.6	1.6	0.70	0.67	-5.67
233.0	3.30	82.30	232.9	-6,917.1	0.4	3.1	3.1	3.88	3.87	4.52
263.0	4.30	85.30	262.9	-6,887.1	0.6	5.0	5.0	3.40	3.33	10.00
294.0	4.80	88.10	293.8	-6,856.2	0.7	7.5	7.5	1.76	1.61	9.03

Mesa West Directional
Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #11
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7150.0usft (Bearcat #1)
Site:	Sec 12 T-22-N,R-3-W	MD Reference:	RKB @ 7150.0usft (Bearcat #1)
Well:	Bonanza #11	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM 5000.1 Single User Db

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)
325.0	5.00	93.20	324.7	-6,825.3	0.7	10.1	10.1	1.55	0.65	16.45
355.0	6.40	99.90	354.5	-6,795.5	0.3	13.1	13.1	5.16	4.67	22.33
385.0	7.20	102.00	384.3	-6,765.7	-0.4	16.6	16.6	2.79	2.67	7.00
415.0	8.70	101.00	414.0	-6,736.0	-1.2	20.6	20.7	5.02	5.00	-3.33
445.0	9.60	95.80	443.6	-6,706.4	-1.9	25.4	25.4	4.07	3.00	-17.33
476.0	9.70	94.30	474.2	-6,675.8	-2.3	30.5	30.5	0.87	0.32	-4.84
508.0	10.50	87.10	505.7	-6,644.3	-2.4	36.1	36.2	4.67	2.50	-22.50
540.0	11.10	88.50	537.1	-6,612.9	-2.1	42.1	42.1	2.05	1.88	4.38
561.0	11.20	86.20	557.7	-6,592.3	-2.0	46.2	46.2	2.17	0.48	-10.95
630.0	11.40	87.90	625.4	-6,524.6	-1.3	59.7	59.7	0.56	0.29	2.46
659.0	11.30	87.50	653.8	-6,496.2	-1.0	65.4	65.4	0.44	-0.34	-1.38
690.0	12.40	89.60	684.2	-6,465.8	-0.9	71.8	71.8	3.81	3.55	6.77
721.0	13.40	89.70	714.4	-6,435.6	-0.8	78.7	78.7	3.23	3.23	0.32
751.0	14.30	90.40	743.5	-6,406.5	-0.8	85.9	85.9	3.05	3.00	2.33
782.0	14.90	92.30	773.5	-6,376.5	-1.0	93.7	93.7	2.48	1.94	6.13
813.0	16.40	90.50	803.4	-6,346.6	-1.2	102.0	102.0	5.09	4.84	-5.81
844.0	17.60	89.40	833.0	-6,317.0	-1.2	111.1	111.1	4.01	3.87	-3.55
874.0	18.90	89.40	861.5	-6,288.5	-1.1	120.5	120.5	4.33	4.33	0.00
905.0	20.20	89.80	890.7	-6,259.3	-1.1	130.9	130.9	4.22	4.19	1.29
936.0	21.40	89.50	919.7	-6,230.3	-1.0	141.9	141.9	3.89	3.87	-0.97
997.0	21.60	89.00	976.4	-6,173.6	-0.7	164.2	164.2	0.44	0.33	-0.82
1,058.0	21.50	87.60	1,033.2	-6,116.8	0.0	186.6	186.6	0.86	-0.16	-2.30
1,118.0	21.40	88.50	1,089.0	-6,061.0	0.7	208.5	208.5	0.57	-0.17	1.50
1,179.0	21.50	87.60	1,145.8	-6,004.2	1.5	230.8	230.8	0.56	0.16	-1.48
1,241.0	21.70	90.20	1,203.4	-5,946.6	1.9	253.6	253.6	1.58	0.32	4.19
1,302.0	21.70	90.30	1,260.1	-5,889.9	1.8	276.2	276.2	0.06	0.00	0.16
1,364.0	21.70	89.90	1,317.7	-5,832.3	1.8	299.1	299.1	0.24	0.00	-0.65
1,425.0	21.80	92.00	1,374.4	-5,775.6	1.4	321.7	321.7	1.29	0.16	3.44
1,488.0	21.70	93.30	1,432.9	-5,717.1	0.3	345.0	345.0	0.78	-0.16	2.06
1,552.0	21.40	91.00	1,492.4	-5,657.6	-0.6	368.5	368.5	1.40	-0.47	-3.59
1,615.0	21.20	92.20	1,551.1	-5,598.9	-1.2	391.4	391.4	0.76	-0.32	1.90
1,678.0	20.80	91.20	1,609.9	-5,540.1	-1.9	414.0	414.0	0.85	-0.63	-1.59
1,742.0	20.80	90.20	1,669.8	-5,480.2	-2.1	436.7	436.7	0.55	0.00	-1.56
1,805.0	20.60	89.60	1,728.7	-5,421.3	-2.1	459.0	459.0	0.46	-0.32	-0.95
1,869.0	20.70	88.60	1,788.6	-5,361.4	-1.8	481.5	481.5	0.57	0.16	-1.56
1,932.0	20.20	88.90	1,847.6	-5,302.4	-1.3	503.5	503.5	0.81	-0.79	0.48
1,996.0	20.40	89.50	1,907.6	-5,242.4	-1.0	525.7	525.7	0.45	0.31	0.94
2,059.0	20.20	89.60	1,966.7	-5,183.3	-0.8	547.6	547.6	0.32	-0.32	0.16
2,123.0	20.10	88.60	2,026.8	-5,123.2	-0.4	569.6	569.6	0.56	-0.16	-1.56
2,186.0	20.50	89.20	2,085.9	-5,064.1	0.0	591.5	591.5	0.72	0.63	0.95
2,250.0	20.60	90.40	2,145.8	-5,004.2	0.0	614.0	613.9	0.68	0.16	1.88
2,313.0	20.80	90.80	2,204.8	-4,945.2	-0.2	636.2	636.2	0.39	0.32	0.63
2,377.0	20.80	90.60	2,264.6	-4,885.4	-0.5	658.9	658.9	0.11	0.00	-0.31
2,440.0	20.80	89.80	2,323.5	-4,826.5	-0.5	681.3	681.3	0.45	0.00	-1.27

Mesa West Directional
Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #11
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7150.0usft (Bearcat #1)
Site:	Sec 12 T-22-N,R-3-W	MD Reference:	RKB @ 7150.0usft (Bearcat #1)
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Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM 5000.1 Single User Db

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)
2,503.0	20.50	89.50	2,382.4	-4,767.6	-0.4	703.5	703.5	0.50	-0.48	-0.48
2,566.0	20.60	89.70	2,441.4	-4,708.6	-0.3	725.6	725.6	0.19	0.16	0.32
2,630.0	20.40	90.90	2,501.4	-4,648.6	-0.4	748.1	748.0	0.73	-0.31	1.88
2,693.0	19.90	90.00	2,560.5	-4,589.5	-0.5	769.8	769.7	0.93	-0.79	-1.43
2,757.0	19.70	89.30	2,620.7	-4,529.3	-0.4	791.4	791.4	0.48	-0.31	-1.09
2,820.0	20.10	90.40	2,680.0	-4,470.0	-0.4	812.9	812.9	0.87	0.63	1.75
2,947.0	19.80	88.90	2,799.3	-4,350.7	-0.1	856.2	856.2	0.47	-0.24	-1.18
3,011.0	19.60	88.40	2,859.6	-4,290.4	0.4	877.8	877.8	0.41	-0.31	-0.78
3,074.0	19.40	90.00	2,919.0	-4,231.0	0.7	898.8	898.8	0.91	-0.32	2.54
3,137.0	19.30	88.00	2,978.4	-4,171.6	1.1	919.7	919.6	1.06	-0.16	-3.17
3,201.0	19.40	89.20	3,038.8	-4,111.2	1.6	940.9	940.8	0.64	0.16	1.88
3,264.0	19.00	89.50	3,098.3	-4,051.7	1.8	961.6	961.6	0.65	-0.63	0.48
3,327.0	20.50	88.90	3,157.6	-3,992.4	2.1	982.9	982.8	2.40	2.38	-0.95
3,390.0	19.80	86.80	3,216.7	-3,933.3	2.9	1,004.6	1,004.5	1.60	-1.11	-3.33
3,454.0	20.00	86.70	3,276.9	-3,873.1	4.2	1,026.3	1,026.3	0.32	0.31	-0.16
3,517.0	20.20	89.20	3,336.1	-3,813.9	4.9	1,047.9	1,047.9	1.40	0.32	3.97
3,580.0	20.70	91.20	3,395.1	-3,754.9	4.9	1,069.9	1,069.9	1.36	0.79	3.17
3,643.0	20.70	90.90	3,454.1	-3,695.9	4.5	1,092.2	1,092.2	0.17	0.00	-0.48
3,707.0	20.20	90.60	3,514.0	-3,636.0	4.2	1,114.6	1,114.5	0.80	-0.78	-0.47
3,770.0	20.30	91.50	3,573.1	-3,576.9	3.8	1,136.4	1,136.3	0.52	0.16	1.43
3,834.0	21.00	89.20	3,633.0	-3,517.0	3.6	1,158.9	1,158.9	1.67	1.09	-3.59
3,896.0	20.00	89.90	3,691.1	-3,458.9	3.8	1,180.6	1,180.6	1.66	-1.61	1.13
3,960.0	20.30	88.90	3,751.2	-3,398.8	4.0	1,202.7	1,202.6	0.71	0.47	-1.56
4,023.0	19.90	88.90	3,810.3	-3,339.7	4.4	1,224.3	1,224.3	0.63	-0.63	0.00
4,086.0	19.60	88.50	3,869.6	-3,280.4	4.9	1,245.6	1,245.6	0.52	-0.48	-0.63
4,150.0	19.80	90.20	3,929.9	-3,220.1	5.2	1,267.2	1,267.1	0.95	0.31	2.66
4,213.0	19.80	90.20	3,989.2	-3,160.8	5.1	1,288.5	1,288.5	0.00	0.00	0.00
4,245.0	19.70	90.10	4,019.3	-3,130.7	5.1	1,299.3	1,299.3	0.33	-0.31	-0.31
4,276.0	18.70	90.40	4,048.6	-3,101.4	5.0	1,309.5	1,309.5	3.24	-3.23	0.97
4,308.0	18.50	90.70	4,078.9	-3,071.1	4.9	1,319.7	1,319.7	0.69	-0.63	0.94
4,340.0	18.20	91.50	4,109.3	-3,040.7	4.7	1,329.8	1,329.8	1.22	-0.94	2.50
4,371.0	18.10	90.60	4,138.7	-3,011.3	4.6	1,339.5	1,339.4	0.96	-0.32	-2.90
4,403.0	17.50	90.50	4,169.2	-2,980.8	4.5	1,349.3	1,349.2	1.88	-1.88	-0.31
4,434.0	17.20	91.80	4,198.8	-2,951.2	4.3	1,358.5	1,358.4	1.58	-0.97	4.19
4,466.0	16.80	91.80	4,229.4	-2,920.6	4.0	1,367.8	1,367.8	1.25	-1.25	0.00
4,498.0	15.80	93.40	4,260.1	-2,889.9	3.6	1,376.8	1,376.8	3.43	-3.13	5.00
4,530.0	15.60	93.60	4,290.9	-2,859.1	3.1	1,385.5	1,385.4	0.65	-0.63	0.63
4,561.0	15.60	92.10	4,320.7	-2,829.3	2.6	1,393.8	1,393.7	1.30	0.00	-4.84
4,593.0	14.90	92.30	4,351.6	-2,798.4	2.3	1,402.2	1,402.2	2.19	-2.19	0.63
4,608.0	14.40	92.50	4,366.1	-2,783.9	2.2	1,406.0	1,405.9	3.35	-3.33	1.33
4,657.0	14.30	92.70	4,413.6	-2,736.4	1.6	1,418.1	1,418.1	0.23	-0.20	0.41
4,688.0	14.30	89.80	4,443.6	-2,706.4	1.4	1,425.8	1,425.7	2.31	0.00	-9.35
4,720.0	14.20	90.90	4,474.7	-2,675.3	1.4	1,433.6	1,433.6	0.90	-0.31	3.44

Mesa West Directional
Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #11
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7150.0usft (Bearcat #1)
Site:	Sec 12 T-22-N,R-3-W	MD Reference:	RKB @ 7150.0usft (Bearcat #1)
Well:	Bonanza #11	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM 5000.1 Single User Db

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)
4,752.0	14.30	89.60	4,505.7	-2,644.3	1.4	1,441.5	1,441.5	1.05	0.31	-4.06
4,783.0	13.90	89.90	4,535.7	-2,614.3	1.4	1,449.1	1,449.0	1.31	-1.29	0.97
4,815.0	12.80	89.70	4,566.9	-2,583.1	1.4	1,456.5	1,456.4	3.44	-3.44	-0.63
4,847.0	12.80	90.80	4,598.1	-2,551.9	1.4	1,463.6	1,463.5	0.76	0.00	3.44
4,878.0	11.90	91.50	4,628.4	-2,521.6	1.3	1,470.2	1,470.1	2.94	-2.90	2.26
4,910.0	11.80	89.10	4,659.7	-2,490.3	1.2	1,476.8	1,476.7	1.57	-0.31	-7.50
4,935.0	11.30	91.60	4,684.2	-2,465.8	1.2	1,481.8	1,481.7	2.83	-2.00	10.00
4,967.0	11.50	88.90	4,715.5	-2,434.5	1.2	1,488.1	1,488.0	1.78	0.63	-8.44
4,999.0	11.20	89.30	4,746.9	-2,403.1	1.3	1,494.4	1,494.3	0.97	-0.94	1.25
5,031.0	10.60	91.20	4,778.3	-2,371.7	1.2	1,500.4	1,500.4	2.19	-1.88	5.94
5,062.0	9.10	91.20	4,808.9	-2,341.1	1.1	1,505.7	1,505.7	4.84	-4.84	0.00
5,094.0	7.60	92.70	4,840.5	-2,309.5	1.0	1,510.4	1,510.3	4.74	-4.69	4.69
5,126.0	6.00	88.80	4,872.3	-2,277.7	0.9	1,514.2	1,514.1	5.20	-5.00	-12.19
5,157.0	4.80	83.20	4,903.2	-2,246.8	1.1	1,517.1	1,517.0	4.22	-3.87	-18.06
5,189.0	4.40	87.70	4,935.1	-2,214.9	1.3	1,519.6	1,519.6	1.68	-1.25	14.06
5,220.0	4.00	84.30	4,966.0	-2,184.0	1.5	1,521.9	1,521.8	1.52	-1.29	-10.97
5,252.0	3.60	88.50	4,997.9	-2,152.1	1.6	1,524.0	1,524.0	1.52	-1.25	13.13
5,284.0	2.80	84.90	5,029.9	-2,120.1	1.7	1,525.8	1,525.7	2.58	-2.50	-11.25
5,316.0	2.10	99.30	5,061.8	-2,088.2	1.7	1,527.1	1,527.1	2.90	-2.19	45.00
5,347.0	1.30	120.40	5,092.8	-2,057.2	1.4	1,528.0	1,528.0	3.24	-2.58	68.06
5,411.0	0.70	124.60	5,156.8	-1,993.2	0.8	1,529.0	1,528.9	0.94	-0.94	6.56
5,474.0	1.00	117.70	5,219.8	-1,930.2	0.3	1,529.8	1,529.7	0.50	0.48	-10.95
5,538.0	0.30	200.90	5,283.8	-1,866.2	-0.1	1,530.2	1,530.2	1.58	-1.09	130.00
5,591.0	0.00	221.80	5,336.8	-1,813.2	-0.2	1,530.1	1,530.1	0.57	-0.57	0.00
5,656.0	0.30	162.70	5,401.8	-1,748.2	-0.4	1,530.2	1,530.2	0.46	0.46	0.00
5,759.0	0.40	89.10	5,504.8	-1,645.2	-0.6	1,530.6	1,530.6	0.41	0.10	-71.46
5,854.0	0.60	177.30	5,599.8	-1,550.2	-1.1	1,531.0	1,531.0	0.75	0.21	92.84
5,949.0	0.60	126.70	5,694.8	-1,455.2	-1.9	1,531.4	1,531.4	0.54	0.00	-53.26
6,044.0	0.30	171.20	5,789.8	-1,360.2	-2.4	1,531.8	1,531.8	0.46	-0.32	46.84
6,140.0	0.30	182.60	5,885.8	-1,264.2	-2.9	1,531.9	1,531.9	0.06	0.00	11.88
6,235.0	0.50	197.00	5,980.8	-1,169.2	-3.6	1,531.7	1,531.7	0.23	0.21	15.16
6,351.0	0.60	188.00	6,096.8	-1,053.2	-4.7	1,531.5	1,531.5	0.11	0.09	-7.76
6,444.0	0.50	153.40	6,189.8	-960.2	-5.5	1,531.6	1,531.6	0.37	-0.11	-37.20
6,540.0	0.50	188.20	6,285.8	-864.2	-6.3	1,531.7	1,531.8	0.31	0.00	36.25
6,634.0	0.60	144.90	6,379.8	-770.2	-7.1	1,532.0	1,532.0	0.44	0.11	-46.06
6,729.0	0.50	146.00	6,474.8	-675.2	-7.9	1,532.5	1,532.5	0.11	-0.11	1.16
6,824.0	1.40	181.70	6,569.8	-580.2	-9.4	1,532.7	1,532.7	1.09	0.95	37.58
6,920.0	1.70	287.60	6,665.7	-484.3	-10.1	1,531.3	1,531.3	2.58	0.31	110.31
7,065.0	0.60	325.50	6,810.7	-339.3	-8.8	1,528.8	1,528.8	0.88	-0.76	26.14
7,110.0	0.40	303.40	6,855.7	-294.3	-8.6	1,528.6	1,528.6	0.61	-0.44	-49.11
7,173.0	0.10	10.40	6,918.7	-231.3	-8.4	1,528.4	1,528.4	0.59	-0.48	106.35
7,204.0	0.00	3.70	6,949.7	-200.3	-8.4	1,528.4	1,528.4	0.32	-0.32	0.00
7,236.0	0.30	221.70	6,981.7	-168.3	-8.4	1,528.3	1,528.4	0.94	0.94	0.00

Mesa West Directional
Survey Report



Company:	Elm Ridge Exploration Company.	Local Co-ordinate Reference:	Well Bonanza #11
Project:	Sandoval County, NM (Nad 83)	TVD Reference:	RKB @ 7150.0usft (Bearcat #1)
Site:	Sec 12 T-22-N,R-3-W	MD Reference:	RKB @ 7150.0usft (Bearcat #1)
Well:	Bonanza #11	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM 5000.1 Single User Db

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)
7,268.0	0.20	325.20	7,013.7	-136.3	-8.4	1,528.2	1,528.3	1.24	-0.31	323.44
7,300.0	0.10	349.00	7,045.7	-104.3	-8.4	1,528.2	1,528.2	0.36	-0.31	74.38
7,331.0	0.30	254.80	7,076.7	-73.3	-8.4	1,528.1	1,528.1	1.04	0.65	-303.87
7,363.0	0.40	220.60	7,108.7	-41.3	-8.5	1,528.0	1,528.0	0.71	0.31	-106.88
7,395.0	0.40	210.10	7,140.7	-9.3	-8.6	1,527.8	1,527.9	0.23	0.00	-32.81
7,426.0	0.20	206.50	7,171.7	21.7	-8.8	1,527.8	1,527.8	0.65	-0.65	-11.61
7,438.0	0.50	220.80	7,183.7	33.7	-8.8	1,527.7	1,527.7	2.58	2.50	119.17
Extrap to TD;7488m MD										
7,488.0	0.50	220.80	7,233.7	83.7	-9.2	1,527.4	1,527.5	0.00	0.00	0.00

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,488.0	7,233.7	-9.2	1,527.4	Extrap to TD;7488m MD

Checked By: _____	Approved By: _____	Date: _____
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