

Revised

RECEIVED

Form 3160-3
(August 2007)

JAN 23 2013

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. BIA 360
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name JICARILLA APACHE NATION
2. Name of Operator ELM RIDGE EXPLORATION COMPANY, LLC		7. If Unit or CA Agreement, Name and No.
3a. Address P. O. BOX 156 BLOOMFIELD, NM 87413	3b. Phone No. (include area code) 505 632 3476	8. Lease Name and Well No. BONANZA 11
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 660' FNL & 1800' FWL 12-22n-3w At proposed prod. zone 660' FNL & 1979' FEL 12-22n-3w		9. API Well No. 30-043-21140
14. Distance in miles and direction from nearest town or post office* 15 AIR MILES NW OF CUBA, NM		10. Field and Pool, or Exploratory LINDRITH GALLUP-DAKOTA, WEST
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1,979'	16. No. of acres in lease 2,541	11. Sec., T. R. M. or Blk. and Survey or Area SHL: NENW (C) 12-22N-3W NMMP BHL: NWNE (B) 12-22N-3W NMMP
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150' (Bonanza 10)	19. Proposed Depth 7,400' MD	12. County or Parish SANDOVAL
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7,180' GRADED	22. Approximate date work will start* 03/01/2013	13. State NM
23. Estimated duration 5 WEEKS		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>B. Wood</i>	Name (Printed/Typed) BRIAN WOOD (505 466-8120)	Date 01/06/2013
---------------------------------	---	--------------------

Title
CONSULTANT (FAX 505 466-9682)

Approved by (Signature) <i>D. Montee-wood</i>	Name (Printed/Typed)	Date 4/25/13
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Title
AFM FEO

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

Hold C104
for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

JUN 13 2013
NMOC
PV

note difference between TO
and drilling plan

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JAN 17 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER

Armingston
Bureau of Land Management

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. BIA 360
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name JICARILLA APACHE NATION
2. Name of Operator ELM RIDGE EXPLORATION COMPANY, LLC		7. If Unit or CA Agreement, Name and No.
3a. Address P. O. BOX 156 BLOOMFIELD, NM 87413	3b. Phone No. (include area code) 505 632 3476	8. Lease Name and Well No. BONANZA 11
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 660' FNL & 1650' FWL 12-22n-3w At proposed prod. zone 660' FNL & 1979' FEL 12-22n-3w		9. API Well No. 30-043- 21140
14. Distance in miles and direction from nearest town or post office* 15 AIR MILES NW OF CUBA, NM		10. Field and Pool, or Exploratory LINDRITH GALLUP-DAKOTA, WEST
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1,979'	16. No. of acres in lease 2,541	11. Sec., T. R. M. or Blk. and Survey or Area SHL: NENW (C) 12-22N-3W NMPM BHL: NWNE (B) 12-22N-3W NMPM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150' (Bonanza 10)	19. Proposed Depth 7,400' MD	12. County or Parish SANDOVAL
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7,180' GRADED	22. Approximate date work will start* 03/01/2013	13. State NM
23. Estimated duration 5 WEEKS		

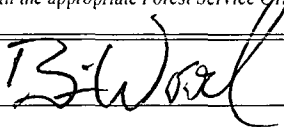
This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

24. Attachments

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) BRIAN WOOD (505 466-8120)	Date 01/06/2013
Title CONSULTANT (FAX 505 466-9682)		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

BLM'S APPROVAL OR ACCEPTANCE OF THIS
ACTION DOES NOT RELIEVE THE LESSEE AND
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

NMOC

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-8161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

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

OIL CONSERVATION DIVISION

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

Form C-102

Revised August 1, 2011
Submit one copy to appropriate
District Office

JAN 17 2013

Farmington Field Office ☐ AMENDED REPORT
Bureau of Land Management

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-043- ¹ API Number 21140	² Pool Code 39189	LINDRITH GALLUP-DAKOTA, WEST
⁴ Property Code 27875	⁶ Property Name BONANZA	⁸ Well Number 11
⁷ GRID No. 149052	⁹ Operator Name ELM RIDGE EXPLORATION COMPANY, LLC	⁵ 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	700	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	700	660	NORTH	1979	EAST	SANDOVAL

¹² Dedicated Acres 160 ¹³ Joint or Infill N2E/4	¹⁴ Consolidation Code	¹⁵ Order No.
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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

16 N 89°29'37" W	660'	5278.60' (CALC.)
1800'	SURFACE LAT: 36.1567489° N LONG: 107.1110450° W NAD 83	BOTTOM HOLE LAT: 36.1567496° N LONG: 107.1059669° W NAD 83
5278.60' (CALC.)	LAT: 36°09.40391' N LONG: 107°06.62680' W NAD 27	LAT: 36°09.40394' N LONG: 107°06.32212' W NAD 27
SECTION 12		
N 00°30'04" E		N 00°30'04" E
LEGEND: ○ = SURFACE LOCATION ● = BOTTOM HOLE LOCATION ◇ = CALCULATED SECTION CORNER, REFERENCED FROM U.S.D.I. B.L.M. PROTRACTOR DIAGRAM DATED 8/04/09		
N 89°29'38" W	5278.60' (CALC.)	

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.

Brian Wood 1-6-13
Signature Date
BRIAN WOOD
brian@permitswest.com
E-mail Address

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 Registered Professional Surveyor
14831
10-26-2012
Certificate Number

JOHN A. VUKONICH
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
14831

Elm Ridge Exploration Company

Site: Bonanza #11 T-22-N,R-3-W
Well: Bonanza #11
Wellbore: DD
Design: #1

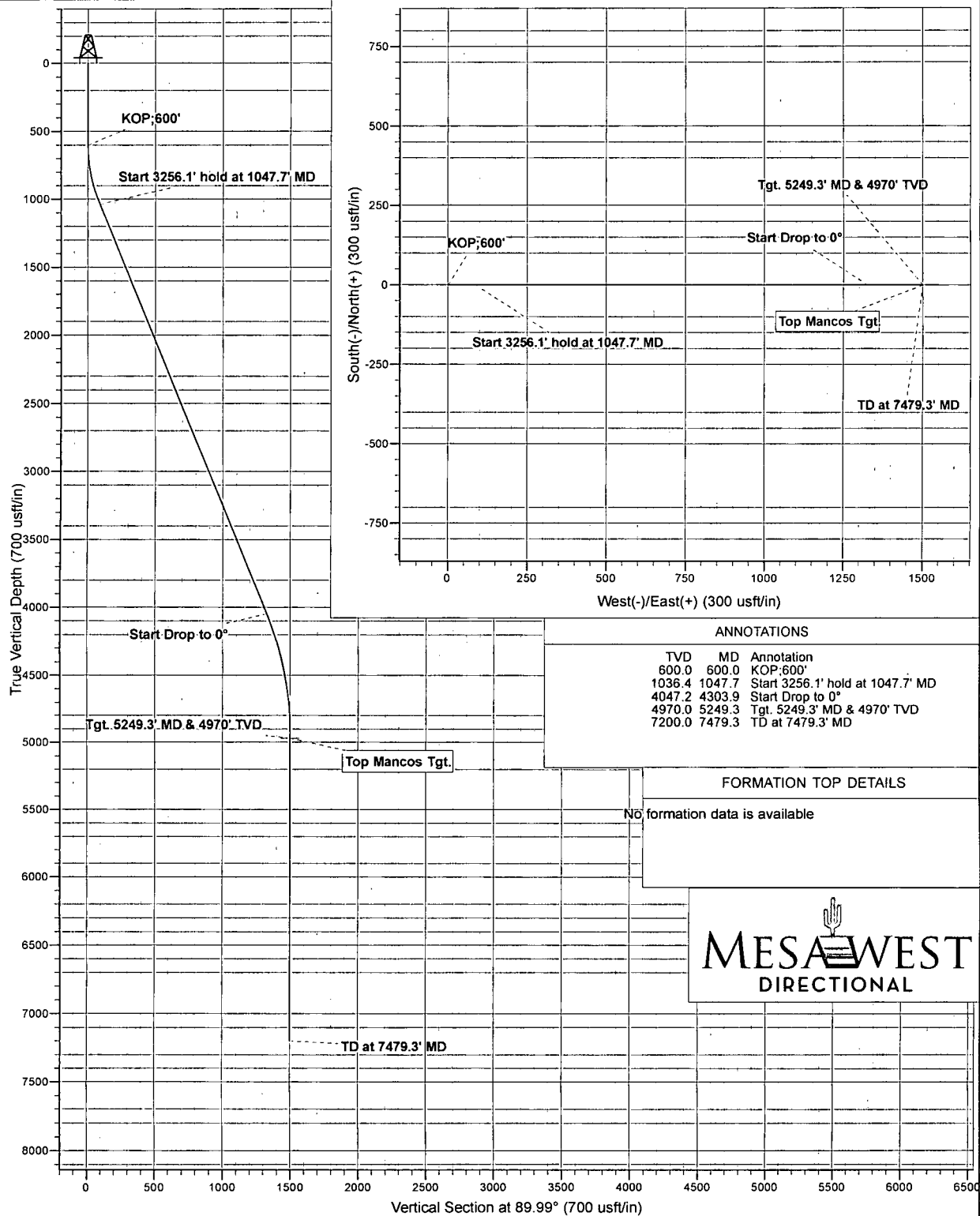
Reference Details - WELL CENTRE

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: 7180.0
KB Elevation: Est RKB @ 7192.0usft

T Azimuths to True North
Magnetic North: 9.32°
Magnetic Field
Strength: 50349.4snT
Dip Angle: 63.04°
Date: 5/2/2013
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	1047.7	22.39	89.99	1036.4	0.0	86.4	5.00	89.99	86.4	
4	4303.9	22.39	89.99	4047.2	0.3	1326.4	0.00	0.00	1326.4	
5	5199.3	0.00	0.00	4920.0	0.3	1499.1	2.50	180.00	1499.1	
6	5249.3	0.00	0.00	4970.0	0.3	1499.1	0.00	0.00	1499.1	Top Mancos Tgt.
7	7479.3	0.00	0.00	7200.0	0.3	1499.1	0.00	0.00	1499.1	



Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #11
Company:	Elm Ridge Exploration Company	TVD Reference:	Est RKB @ 7192.0usft
Project:	Bonanza (Nad83)	MD Reference:	Est RKB @ 7192.0usft
Site:	Bonanza #11 T-22-N,R-3-W	North Reference:	True
Well:	Bonanza #11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	#1		

Project	Bonanza (Nad83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Bonanza #11 T-22-N,R-3-W		
Site Position:		Northing:	1,877,448.86 usft
From:	Lat/Long	Easting:	1,386,236.69 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	36° 9' 24.296 N
		Longitude:	107° 6' 39.762 W
		Grid Convergence:	-0.51 °

Well	Bonanza #11		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
		Latitude:	36° 9' 24.296 N
		Longitude:	107° 6' 39.762 W
		Ground Level:	7,180.0 usft

Wellbore	DD		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2013	9.32	63.04	50,349

Design	#1		
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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	89.99

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	
1,047.7	22.39	89.99	1,036.4	0.0	86.4	5.00	5.00	0.00	89.99	
4,303.9	22.39	89.99	4,047.2	0.3	1,326.4	0.00	0.00	0.00	0.00	
5,199.3	0.00	0.00	4,920.0	0.3	1,499.1	2.50	-2.50	0.00	180.00	
5,249.3	0.00	0.00	4,970.0	0.3	1,499.1	0.00	0.00	0.00	0.00	Top Mancos Tgt.
7,479.3	0.00	0.00	7,200.0	0.3	1,499.1	0.00	0.00	0.00	0.00	

Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #11
Company:	Elm Ridge Exploration Company	TVD Reference:	Est RKB @ 7192.0usft
Project:	Bonanza (Nad83)	MD Reference:	Est RKB @ 7192.0usft
Site:	Bonanza #11 T-22-N,R-3-W	North Reference:	True
Well:	Bonanza #11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	#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	-7,192.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;600'										
600.0	0.00	0.00	600.0	-6,592.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	5.00	89.99	699.9	-6,492.1	0.0	4.4	4.4	5.00	5.00	0.00
800.0	10.00	89.99	799.0	-6,393.0	0.0	17.4	17.4	5.00	5.00	0.00
900.0	15.00	89.99	896.6	-6,295.4	0.0	39.0	39.0	5.00	5.00	0.00
1,000.0	20.00	89.99	991.9	-6,200.1	0.0	69.1	69.1	5.00	5.00	0.00
Start 3256.1' hold at 1047.7' MD										
1,047.7	22.39	89.99	1,036.4	-6,155.6	0.0	86.4	86.4	5.00	5.00	0.00
1,100.0	22.39	89.99	1,084.8	-6,107.2	0.0	106.3	106.3	0.00	0.00	0.00
1,200.0	22.39	89.99	1,177.2	-6,014.8	0.0	144.4	144.4	0.00	0.00	0.00
1,300.0	22.39	89.99	1,269.7	-5,922.3	0.0	182.4	182.4	0.00	0.00	0.00
1,400.0	22.39	89.99	1,362.1	-5,829.9	0.0	220.5	220.5	0.00	0.00	0.00
1,500.0	22.39	89.99	1,454.6	-5,737.4	0.1	258.6	258.6	0.00	0.00	0.00
1,600.0	22.39	89.99	1,547.1	-5,644.9	0.1	296.7	296.7	0.00	0.00	0.00
1,700.0	22.39	89.99	1,639.5	-5,552.5	0.1	334.8	334.8	0.00	0.00	0.00
1,800.0	22.39	89.99	1,732.0	-5,460.0	0.1	372.9	372.9	0.00	0.00	0.00
1,900.0	22.39	89.99	1,824.5	-5,367.5	0.1	410.9	410.9	0.00	0.00	0.00
2,000.0	22.39	89.99	1,916.9	-5,275.1	0.1	449.0	449.0	0.00	0.00	0.00
2,100.0	22.39	89.99	2,009.4	-5,182.6	0.1	487.1	487.1	0.00	0.00	0.00
2,200.0	22.39	89.99	2,101.9	-5,090.1	0.1	525.2	525.2	0.00	0.00	0.00
2,300.0	22.39	89.99	2,194.3	-4,997.7	0.1	563.3	563.3	0.00	0.00	0.00
2,400.0	22.39	89.99	2,286.8	-4,905.2	0.1	601.4	601.4	0.00	0.00	0.00
2,500.0	22.39	89.99	2,379.3	-4,812.7	0.1	639.4	639.4	0.00	0.00	0.00
2,600.0	22.39	89.99	2,471.7	-4,720.3	0.1	677.5	677.5	0.00	0.00	0.00
2,700.0	22.39	89.99	2,564.2	-4,627.8	0.1	715.6	715.6	0.00	0.00	0.00
2,800.0	22.39	89.99	2,656.6	-4,535.4	0.1	753.7	753.7	0.00	0.00	0.00
2,900.0	22.39	89.99	2,749.1	-4,442.9	0.2	791.8	791.8	0.00	0.00	0.00
3,000.0	22.39	89.99	2,841.6	-4,350.4	0.2	829.9	829.9	0.00	0.00	0.00
3,100.0	22.39	89.99	2,934.0	-4,258.0	0.2	868.0	868.0	0.00	0.00	0.00
3,200.0	22.39	89.99	3,026.5	-4,165.5	0.2	906.0	906.0	0.00	0.00	0.00
3,300.0	22.39	89.99	3,119.0	-4,073.0	0.2	944.1	944.1	0.00	0.00	0.00
3,400.0	22.39	89.99	3,211.4	-3,980.6	0.2	982.2	982.2	0.00	0.00	0.00
3,500.0	22.39	89.99	3,303.9	-3,888.1	0.2	1,020.3	1,020.3	0.00	0.00	0.00
3,600.0	22.39	89.99	3,396.4	-3,795.6	0.2	1,058.4	1,058.4	0.00	0.00	0.00
3,700.0	22.39	89.99	3,488.8	-3,703.2	0.2	1,096.5	1,096.5	0.00	0.00	0.00
3,800.0	22.39	89.99	3,581.3	-3,610.7	0.2	1,134.5	1,134.5	0.00	0.00	0.00
3,900.0	22.39	89.99	3,673.7	-3,518.3	0.2	1,172.6	1,172.6	0.00	0.00	0.00
4,000.0	22.39	89.99	3,766.2	-3,425.8	0.2	1,210.7	1,210.7	0.00	0.00	0.00
4,100.0	22.39	89.99	3,858.7	-3,333.3	0.2	1,248.8	1,248.8	0.00	0.00	0.00
4,200.0	22.39	89.99	3,951.1	-3,240.9	0.3	1,286.9	1,286.9	0.00	0.00	0.00
4,300.0	22.39	89.99	4,043.6	-3,148.4	0.3	1,325.0	1,325.0	0.00	0.00	0.00
Start Drop to 0°										
4,303.9	22.39	89.99	4,047.2	-3,144.8	0.3	1,326.4	1,326.4	0.00	0.00	0.00
4,400.0	19.98	89.99	4,136.8	-3,055.2	0.3	1,361.2	1,361.2	2.50	-2.50	0.00
4,500.0	17.48	89.99	4,231.5	-2,960.5	0.3	1,393.3	1,393.3	2.50	-2.50	0.00

Mesa West Directional

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonanza #11
Company:	Elm Ridge Exploration Company	TVD Reference:	Est RKB @ 7192.0usft
Project:	Bonanza (Nad83)	MD Reference:	Est RKB @ 7192.0usft
Site:	Bonanza #11 T-22-N,R-3-W	North Reference:	True
Well:	Bonanza #11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	#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)
4,600.0	14.98	89.99	4,327.5	-2,864.5	0.3	1,421.2	1,421.2	2.50	-2.50	0.00
4,700.0	12.48	89.99	4,424.6	-2,767.4	0.3	1,445.0	1,445.0	2.50	-2.50	0.00
4,800.0	9.98	89.99	4,522.7	-2,669.3	0.3	1,464.4	1,464.4	2.50	-2.50	0.00
4,900.0	7.48	89.99	4,621.6	-2,570.4	0.3	1,479.6	1,479.6	2.50	-2.50	0.00
5,000.0	4.98	89.99	4,721.0	-2,471.0	0.3	1,490.5	1,490.5	2.50	-2.50	0.00
5,100.0	2.48	89.99	4,820.7	-2,371.3	0.3	1,497.0	1,497.0	2.50	-2.50	0.00
5,199.3	0.00	0.00	4,920.0	-2,272.0	0.3	1,499.1	1,499.1	2.50	-2.50	0.00
Tgt. 5249.3' MD & 4970' TVD										
5,249.3	0.00	0.00	4,970.0	-2,222.0	0.3	1,499.1	1,499.1	0.00	0.00	0.00
TD at 7479.3' MD										
7,479.3	0.00	0.00	7,200.0	8.0	0.3	1,499.1	1,499.1	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
- hit/miss target									
- Shape									
Top Mancos Tgt.	0.00	0.00	4,970.0	0.3	1,499.1	1,877,435.87	1,387,735.78	36° 9' 24.299 N	107° 6' 21.481 W
- plan hits target center									
- Point									

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'	
1,047.7	1,036.4	0.0	86.4	Start 3256.1' hold at 1047.7' MD	
4,303.9	4,047.2	0.3	1,326.4	Start Drop to 0°	
5,249.3	4,970.0	0.3	1,499.1	Tgt. 5249.3' MD & 4970' TVD	
7,479.3	7,200.0	0.3	1,499.1	TD at 7479.3' MD	

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Drilling Program

1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>TVD</u>	<u>KB Depth</u>	<u>Elevation</u>
San Jose	0'	10'	+7,180'
Nacimiento	1,015'	1,025'	+6,165'
Ojo Alamo	2,260'	2,270'	+4,920'
Kirtland	2,375'	2,380'	+4,805'
Fruitland Coal	2,510'	2,520'	+4,670'
Pictured Cliffs Ss	2,615'	2,625'	+4,565'
Lewis shale	2,740'	2,750'	+4,440'
Chacra Ss	3,365'	3,375'	+3,815'
Cliff House Ss	4,105'	4,115'	+3,075'
Menefee	4,200'	4,210'	+2,980'
Point Lookout Ss	4,680'	4,690'	+2,500'
Mancos Shale	4,975'	4,985'	+2,205'
Gallup Ss	5,700'	5,710'	+1,480'
Greenhorn	6,720'	6,730'	+460'
Graneros	6,780'	6,790'	+400'
Dakota Ss	6,810'	6,820'	+370'
Total Depth*	7,200'	7,210'	-20'

* measured depth = 7,400'

2. NOTABLE ZONES

Oil & Gas Zones

Ojo Alamo

Pictured Cliffs

Chacra

Gallup

Dakota

Water Zones

San Jose

Ojo Alamo

Fruitland

Coal Zone

Fruitland

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All water zones will be protected with casing, cement, and weighted mud. Fresh water will be recorded by depth. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 3,000-psi model is on PAGE 3. The $\geq 3,000$ -psi BOP and choke manifold system will be installed and tested to 2,000-psi before drilling the surface casing plug. It will remain in use until the well is completed or abandoned. A safety valve and sub with a full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when the Kelly is not in use.

All BOP mechanical and pressure tests will be recorded on the driller's log. BOPs will be inspected and opened and closed at least daily to assure good mechanical working order. Inspections will be recorded on the daily drilling report. Pressure tests will be conducted before drilling out from under all casing strings that are set and cemented in place.

4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Type</u>	<u>Age</u>	<u>Setting Depth</u>
12-1/4"	8-5/8"	24	J-55	S T & C	New	360'
7-7/8"	5-1/2"	15.5	J-55	L T & C	New	7,400'

	<u>Drift</u>	<u>Torque</u>	<u>Burst</u>	<u>Collapse</u>	<u>Tension</u>	<u>Pressure Test</u>
	<u>inch</u>	<u>feet-pounds</u>	<u>psi</u>	<u>psi</u>	<u>1000 psi</u>	<u>psi</u>
Surface	7.972	3070	2950	1370	381	1000
Production	4.653	2020	4810	4040	248	3500

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Surface casing will be cemented to the surface with ≈ 310 cubic feet (≈ 262 sacks) Class B with 1/4 pound per sack cellophane + 2% CaCl_2 . Yield = 1.18 cubic feet per sack. Weight = 15.2 pounds per gallon. Volume = 100% excess. Centralizers will be installed on the middle of the shoe joint and every other centralizer thereafter. Thread-lock the guide shoe and bottom of float collar only. Use API casing dope. Will test to ≈ 800 psi for ≈ 30 minutes.

Production casing will be cemented to the surface in two stages with $\geq 75\%$ excess. A stage tool will be set at $\approx 4,775'$ ($\approx 200'$ above the Mancos). Will pressure test to 2,000-psi for 30-minutes.

First stage volume will be $\approx 1,377$ cubic feet. First stage will consist of 370 sacks (≈ 692 cubic feet) Halliburton light with 65/35 poz mix + 1/4 pound per sack Flocele + 2% CaCl_2 mixed at a yield of 1.87 cubic feet per sack and a weight of 12.7 pounds per gallon. That will be followed by 685 sacks (808 cubic feet) Class B + 2% CaCl_2 mixed at a yield of 1.18 cubic feet per sack and a weight of 15.2 pounds per gallon.

Second stage volume will be $\approx 1,583$ cubic feet. Second stage will consist of ≈ 815 sacks (1,524 cubic feet) of Halliburton light with 65/35 poz mix + 1/4 pound per sack Flocele + 2% CaCl_2 mixed at a yield of 1.87 cubic feet per sack and a weight of 12.7 pounds per gallon. That will be followed by ≈ 50 sacks (59 cubic feet) Class B + 2% CaCl_2 mixed at a yield of 1.18 cubic feet per sack and a weight of 15.2 pounds per gallon.

5. MUD PROGRAM

<u>Depth</u>	<u>Type</u>	<u>ppg</u>	<u>Viscosity</u>	<u>Fluid Loss</u>	<u>pH</u>
0' - 360'	Fresh water gel	9.0	50	NC	9
360' - TD'	Fresh water gel	9.0	38-50	6.0	9

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Sufficient material to maintain mud properties, control lost circulation, and contain a blowout will be available at the well site while drilling. Rig personnel will check the mud hourly. Material to soak up possible oil or fuel spills will be on site.

6. CORES, TESTS, & LOGS

No core or drill stem test is planned. Spectral density, high-resolution induction, and cement bond logs will be run the base of the surface casing to TD. Samples will be collected every $\approx 10'$ from $\approx 200'$ above the Point Lookout to and through the Gallup and Dakota.

7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum bottom hole pressure will be $\leq 3,139$ psi.

8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take ≈ 2 weeks to drill and ≈ 3 weeks to complete the well.

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Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See PAGES 10 & 11)

From the equivalent of Mile Post 80.5 on US 550...
Go NE 2.9 miles on gravel J-37
Then turn right and go ESE 1.3 miles on dirt J-38 to just past a cattle guard
Turn left and go Northeast 1.5 miles to a 3-way junction
Then turn right and go Southeast 0.4 mile on a dirt road
Turn left and go Northeast 0.1 mile to Elm Ridge's Chacon Amigos 10 pad
Then turn right and go East 813' to the Bonanza 10 pad

Roads will be maintained to at least equal to their present condition.

2. ROAD TO BE BUILT OR UPGRADED

No upgrade or new road construction is needed. Pad will overlap Bonanza 10 pad.

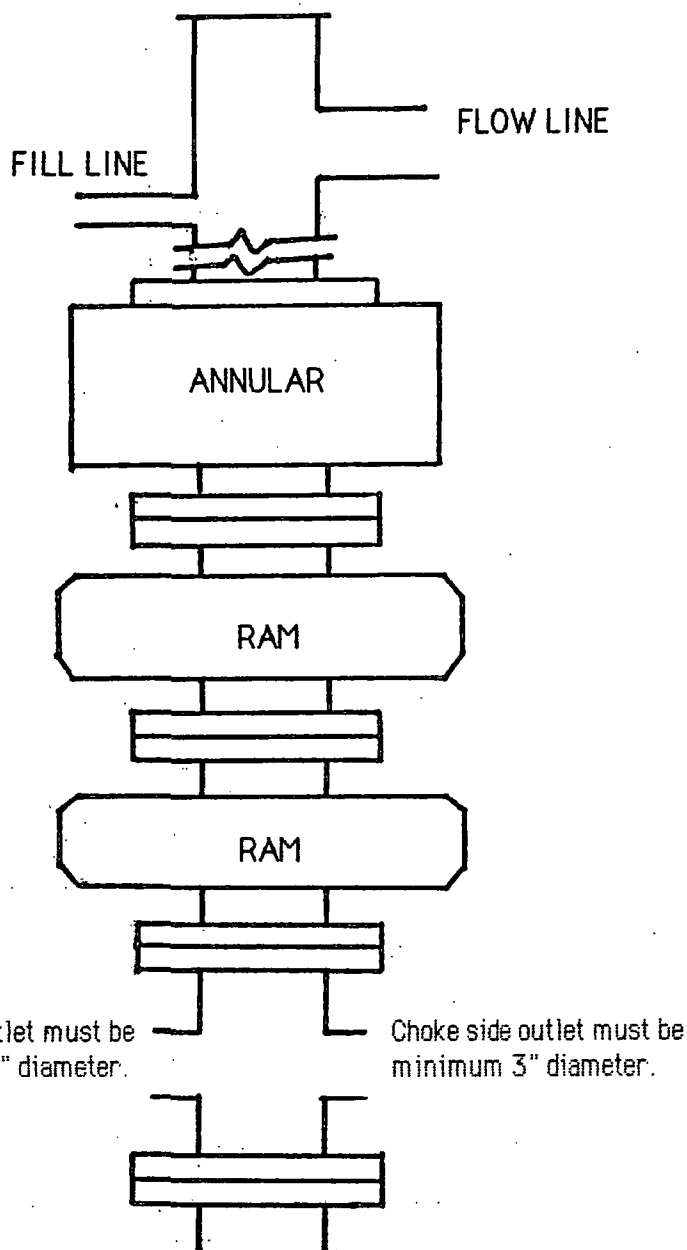
3. EXISTING WELLS (See PAGE 11)

Twenty gas or oil wells and two plugged and abandoned wells are within a mile radius. There are no water or injection wells within a mile.

4. PROPOSED PRODUCTION FACILITIES (See PAGES 12 & 13)

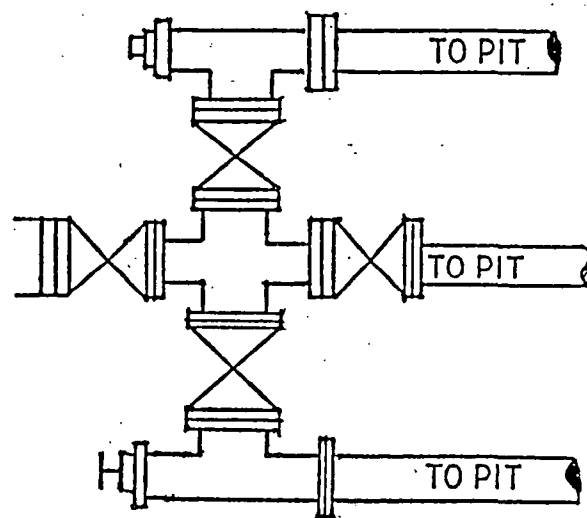
Production facilities will include a separator, dehydrator, meter run, and two ≈300 bbl tanks. All of the equipment will be painted a flat juniper green.

A 150.14' long steel 4-1/2" O. D. natural gas pipeline will be laid west to Elm Ridge's Bonanza 10 pad. The pipeline will be buried ≈36" deep.



TYPICAL BOP STACK
& CHOKES MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

Upper kelly cock will have handle available.
Safety valve and subs will fit all drill string connections in use.
All BOPE connections subjected to well pressure will be flanged, welded, or clamped.