L-06-04

OCD-HOBBS

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

1384

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. ~~LC 032753 B~~ LC-032573-B

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. 30154
Elliott B Federal #17

2. Name of Operator
Range Operating New Mexico, Inc. 227588

9. API Well No.
30-025-38517

3a. Address **777 Main St., Ste. 800**
Fort Worth, TX 76102

3b. Phone No. *(include area code)*
817-810-1916

10. Field and Pool, or Exploratory
Eunice; San Andres, Southwest

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **2150' FNL & 1650' FEL** Unit G
At proposed prod. zone **2150' FNL & 1650' FEL**
CAPITAN CONTROLLED WATER BASIN

11. Sec., T. R. M. or Blk. and Survey or Area
Unit G, 7-T22S-R37E, N.M.P.M.

14. Distance in miles and direction from nearest town or post office*
2 miles SE of Eunice, New Mexico

12. County or Parish
Lea

13. State
TX

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
	40	**40**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
	4300	**NM2399**
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3430	**09/25/2006**	**9 days**

Received
OCT 2006
Hobbs
OCD

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Paula Hale	**Paula Hale**	**09/01/2006**

Title: **Sr. Reg. Sp.**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson	/s/ Don Peterson	OCT - 4 2006
ACTING **FIELD MANAGER**	Office **CARLSBAD FIELD 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.

APPROVAL FOR 1 YEAR

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.

**(Instructions on page 2)*

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Received
OCT 2006
Hobbs
OCD

NOTICE TO SURFACE OWNER

Surface Owner

Range Operating New Mexico, Inc.
777 Main St., Ste. 800
Fort Worth, TX 76102

Notice Date

9-01-06

United State Department of the Interior

Bureau of Land Management

ROSWELL FIELD OFFICE
2902 West Second Street
Roswell, New Mexico 88201

Statement Accepting Responsibility for Operations

Operator Name:	Range Operating New Mexico, Inc.
Street or Box:	777 Main Street, Suite 800
City, State:	Fort Worth, TX
Zip Code:	76102

The undersigned accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No.:	LC-032753-B
Legal Description of Land:	Sec. 7, T22S, R37E SW/4 NE/4
Formations:	Eunice San Andres Southwest
Bond Coverage: (State, Nationwide or Individual)	Statewide
BLM Bond File No.:	NM2399

Authorized Signature: _____

Title: Petroleum Engineer

Date: 9/01/06

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-38517	24180	Eunice; San Andres, Southwest

Property Code	Property Name	Well Number
301545	ELLIOTT "B" FEDERAL	17

OGRID No.	Operator Name	Elevation
227588	RANGE OPERATING NEW MEXICO, INC.	3430'

Surface Location

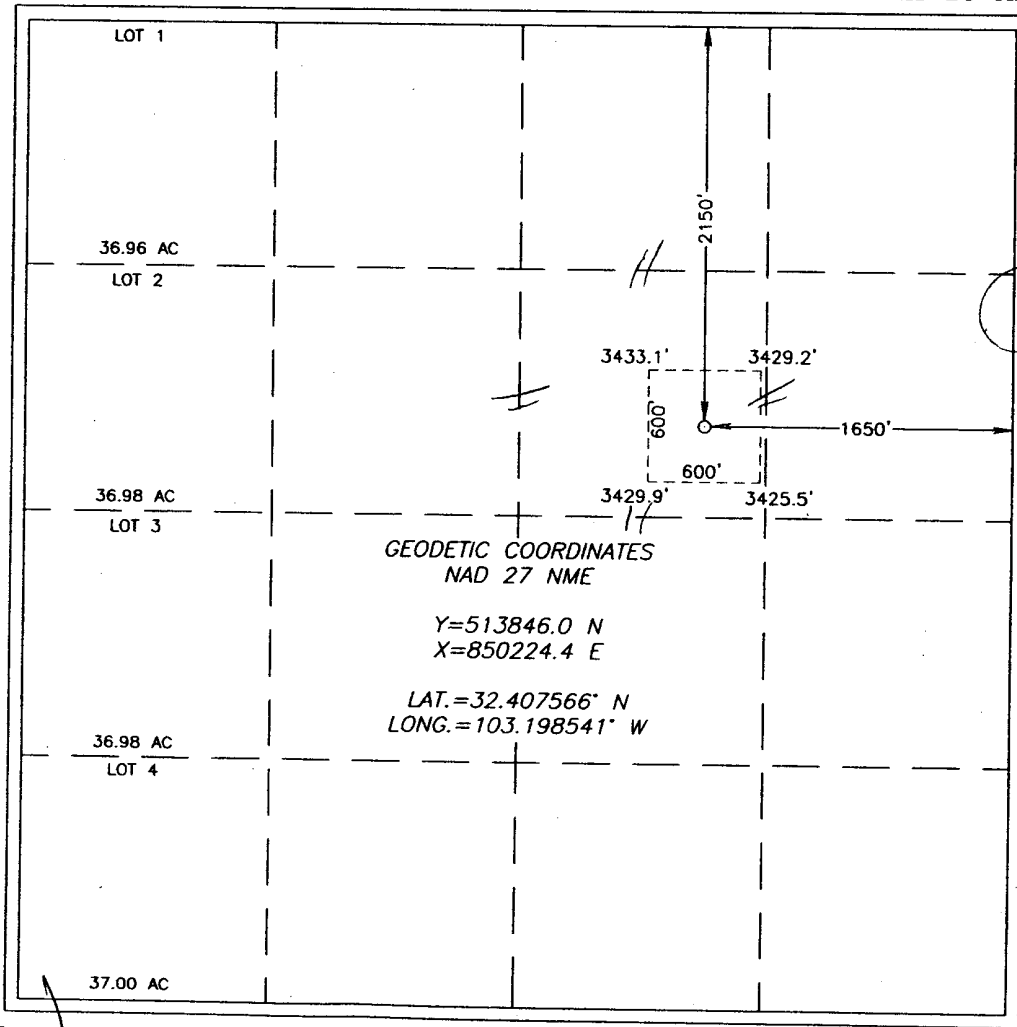
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	7	22-S	37-E		2150	NORTH	1650	EAST	LEA

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

9-01-06
Signature Date

Paula Hale
Printed Name

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.

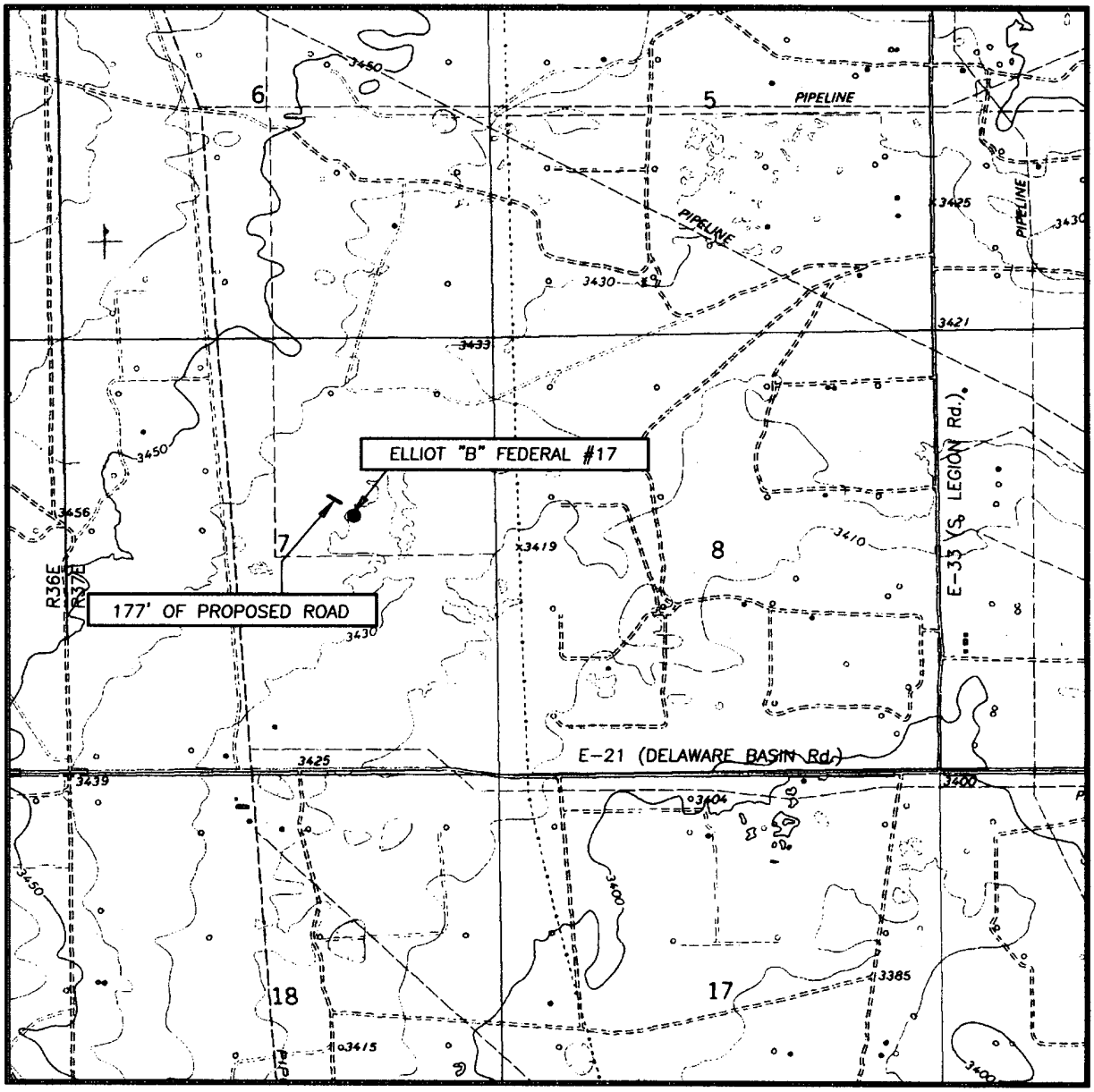
JULY 14, 2006
Date Surveyed JR

Signature & Seal of Professional Surveyor

RONALD J. EIDSON NEW MEXICO 7/24/06
06.11.1164
REGISTERED PROFESSIONAL SURVEYOR

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
EUNICE, N.M. – 10'

SEC. 7 TWP. 22-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 2150' FNL & 1650' FEL

ELEVATION 3430'

OPERATOR RANGE OPERATING NEW MEXICO Inc.

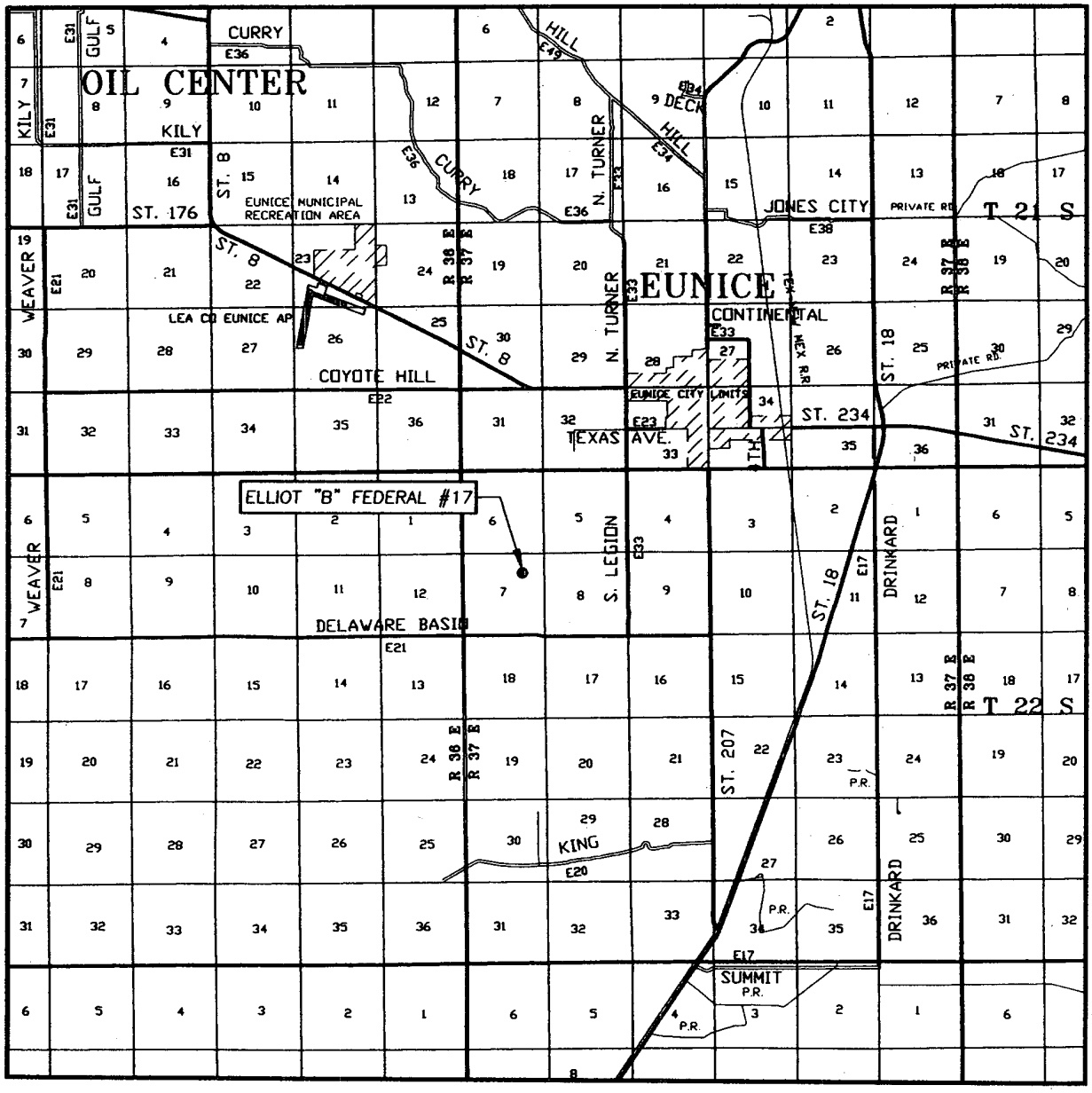
LEASE ELLIOTT "B" FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
EUNICE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

EXHIBIT A

VICINITY MAP



SEC. 7 TWP. 22-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 2150' FNL & 1650' FEL

ELEVATION 3430'

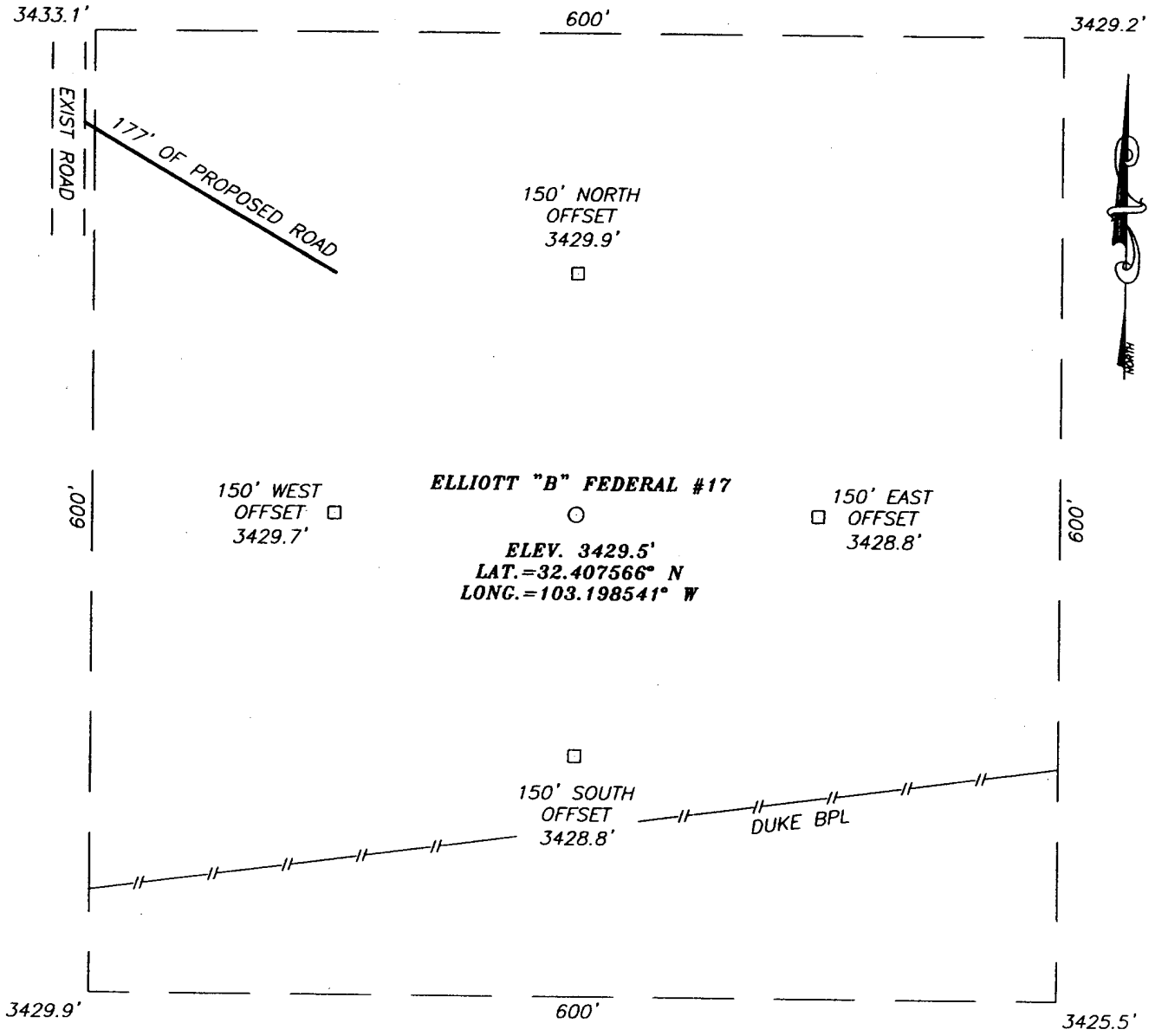
OPERATOR RANGE OPERATING NEW MEXICO, Inc.

LEASE ELLIOTT "B" FEDERAL

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

SECTION 7, TOWNSHIP 22 SOUTH, RANGE 37 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. E-33 (LEGION RD.) AND CO RD. E-23 (TEXAS AVE.) GO SOUTH ON CO. RD. E-33 APPROX. 1.4 MILES. TURN RIGHT AND GO WEST APPROX. 1.6 MILES. TURN LEFT AND GO SOUTH APPROX. 0.2 MILES TO A PROPOSED ROAD SURVEY. FOLLOW PROPOSED ROAD SURVEY APPROX. 220 FEET TO THIS LOCATION.

100 0 100 200 Feet

Scale: 1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

(505) 393-3117

RANGE OPERATING NEW MEXICO, Inc.

ELLIOTT "B" FEDERAL #17 WELL
LOCATED 2150 FEET FROM THE NORTH LINE
AND 1650 FEET FROM THE EAST LINE OF SECTION 7,
TOWNSHIP 22 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Survey Date: 07/14/06	Sheet 1 of 1 Sheets		
W.O. Number: 06.11.1164	Dr By: J.R.		Rev 1:N/A
Date: 07/17/06	Disk: CD#6	06111164	Scale: 1"=100'

EXHIBIT B

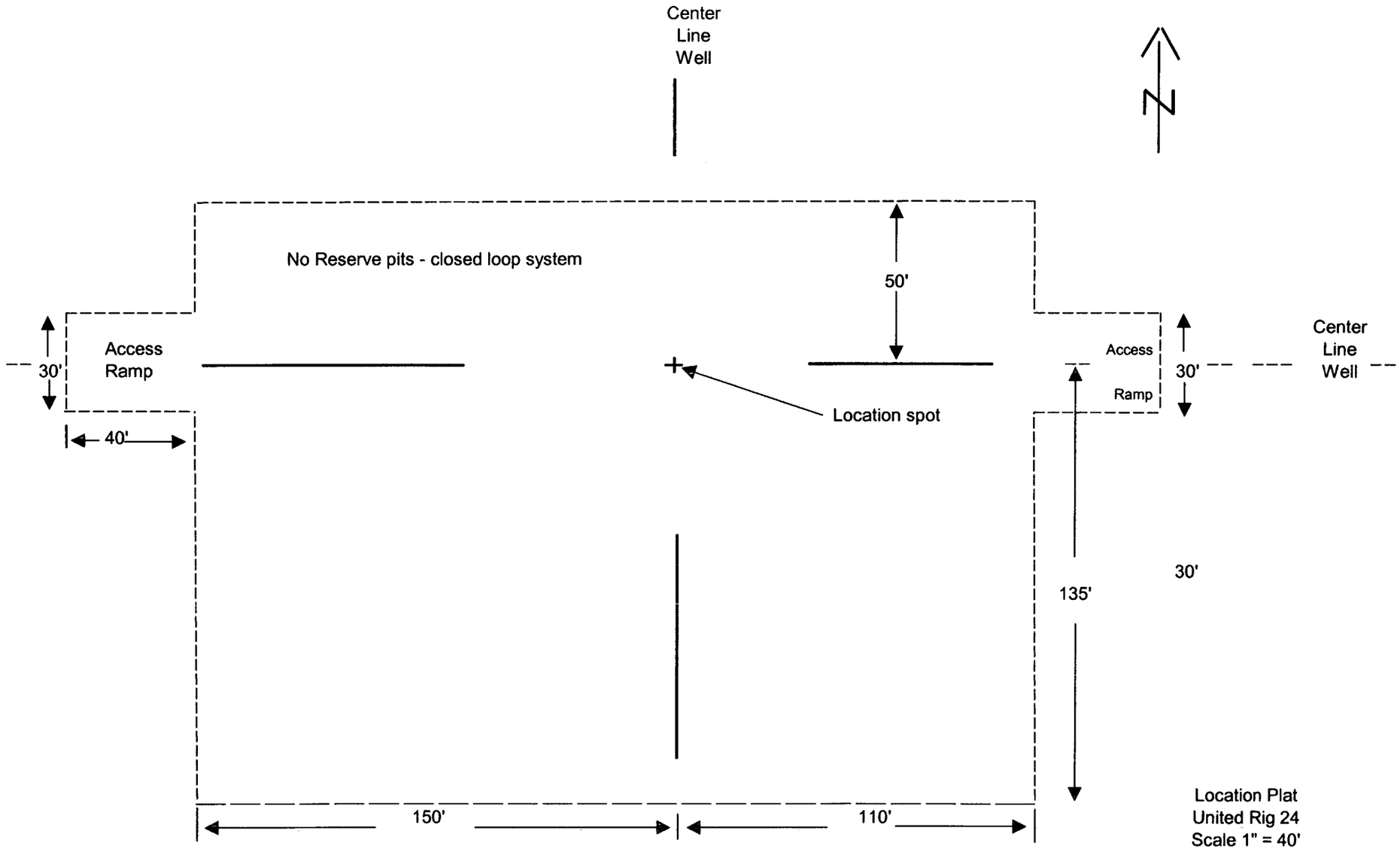
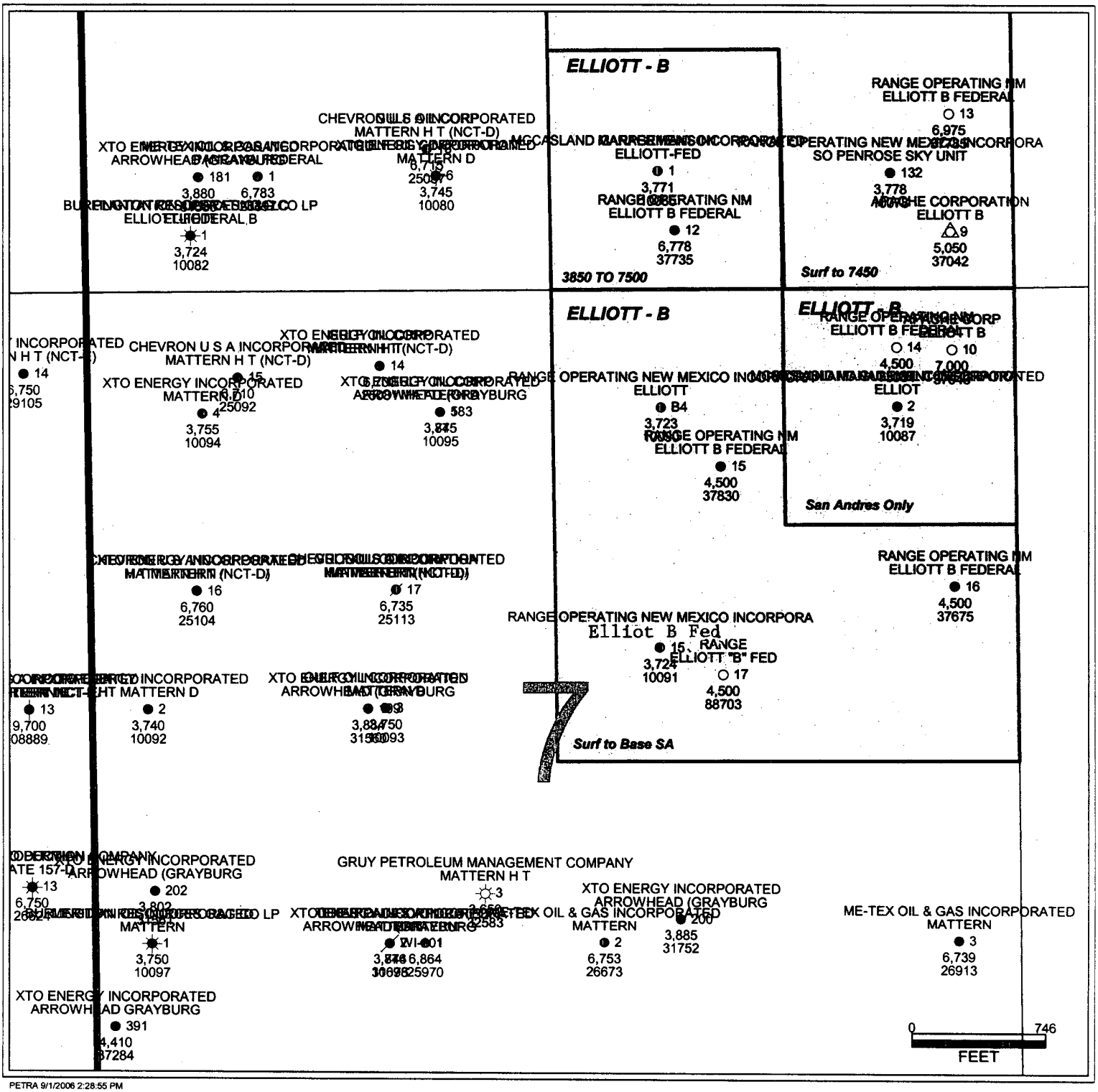

Center
Line
Well
N
No Reserve pits - closed loop system
50'
30'
Access
Ramp
Location spot
Access
Ramp
30'
Center
Line
Well
40'
30'
135'
150'
110'
Location Plat
United Rig 24
Scale 1" = 40'

EXHIBIT C



PETRA 9/1/2006 2:28:55 PM

EXHIBIT D

Multi-Point Surface Use Operating Plan
Range Operating New Mexico, Inc.
Elliott B Federal #17

This plan is submitted with form 3160-3, Applications for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, and the proposed construction. And the procedures to be followed in rehabilitation of the surface after completion of the operations, so that a complete appraisal can be made of the environmental affects associated with the operation.

1. Existing Roads:

   A. Exhibit A is a portion of a road map showing the location of the proposed well. The proposed location is situated approximately 2.5 miles SW of Eunice, New Mexico.

   B. Directions:
   See Exhibit B

2. Planned Access Road

   A. The proposed well site is located 2150' FNL & 1650' FEL of Section 7-T22S-R37E.

3. Location of Existing Wells:

   A. There is one (1) existing well in the vicinity as shown on Exhibit D

4. Location of Existing and/or Proposed Facilities

   A. The Layout of the well pad, drilling rig and reserve pit are shown in Exhibit B & C.

   B. In the event that this well is productive, the current tank battery and production facilities will be utilized.

   C. The production facility consists of two 210 & one 500 bbl steel oil storage tanks, two 500 bbl water tanks, two vertical separators for production and two vertical separators for testing.

5. Location and Type of Water Supply:

   A. The well is to be drilled with both fresh and brine water to be hauled to the location by truck and will be bought from commercial sources.

6. Source of Construction Material:

   A. Any caliche required for construction of the well pad will be obtained from company-owned caliche pit.

7. Methods of Handling Waste Disposal:

   A. Drill cuttings will be disposed of in the drilling pits.

   B. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.

   C. Oil produced during operations will be stored in tanks and hauled off site.

   D. Human sewage will be contained in a portable chemical toilet, transported from the site and disposed of at an approved site.

   E. Trash will be deposited in a metal container and hauled to an approved disposal site.

   F. Within 30 days following drilling and/or completion operations, trash and debris will be hauled to an approved disposal site.

8. Ancillary Facilities

   None

9. Well site Layout:

   A. Exhibit B shows the dimensions of the well pad. Location of the major rig components, and well pad orientation are shown Exhibit C.

   B. Topography of the area is relatively level across the entire location. Fills should be no more than 3' deep. The location will be capped with 4" to 6" of caliche.

   C. No diversion ditches are planned.

   D. The pad has been staked and flagged and an archeological study conducted and attached with this permit application.

10. Plans for Restoration of the Surface:

    A. Upon completion of drilling, completion and production operations, the area disturbed by the project will be restored to BLM specifications or to as near their former natural condition as possible.

    B. All of the caliche material will be removed and the area will be leveled to pre-project grade.

    C. No drainage systems will be needed on the site.

    D. No segregation of soils is planned at this time as it is a blow sand area.

    E. Waste disposal was outlined in Section 7.

    F. Re-vegetation and fertilization will be as per BLM stipulations.

    G. All areas not used for production will be restored after completion of the well. The existing roads will not be restored.

11. Other Information

    A. The general location of this site is a sandy desert and mesquite brush area. The soil has a very small amount of vegetation and stockpiling of material is not planned.

    B. The vegetation is desert scrub characterized by various species of cacti, acacia, and mesquite.

    C. Wildlife species that occur in the area include: rabbits, mule deer, coyote, snakes and various rodents.

    D. No river is in the general area of the well site.

    E. An archaeological survey of the site and proposed access road has been conducted and the report is attached.

12. Surface Owner's Name and Address:

Range Operating New Mexico, Inc.
777 Main St., Ste. 800
Fort Worth, TX 76102

13. Operator's Representative and Certification.

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

	Office	Mobile
District Engineer Bryan Surles	817-810-1971	817-360-9663
Area Superintendent Chris Garcia	505-394-1485	505-631-9025

B. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Range Operating New Mexico, Inc. and it contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of the 18 U.S.C. 1001 for the filing of a false statement.

DATE: 9-01-06

Bryan Surles
District Engineer

EUNICE SOUTHWEST PROSPECT (San Andres)
Elliott "B" Fed. No. 17
Well Objectives/Prognosis/Evaluation
August 25, 2006

I) GENERAL

Operator:	**Range Operating New Mexico, Inc. (100%)**	
Partners/WI:	none	
Proposed Well Designation:	Elliott "B" Federal No. 17	
API No.:	30-025-XXXXX	
Well Classification:	PUD	
Confidentiality Status:	Restricted, no information release without approval	
PTD (Permit Depth):	4300 ft MD	
Anticipated Spud Date:	XXXXX xx, 2006	
Estimated Days to Drill:	10	
Drilling Contractor:	United Rig No. 24	
Expected Type of Hydrocarbon:	Oil/Gas, Gravity and GOR variable	
Contacts:	Tom Brace, V.P. Geol	(817)810-1926
	Martin Emery, Project Geologist	(817)810-1951
	Steve Chapman, Reservoir Engineer	(817)810-1912
	Bobby Ebeier, Landman	(817)810-1987
	Don Robinson, Drilling Mgr.	(817)509-1506
	Bryan Surles, Oper. Eng.	(817)810-1971
	Rennie Hubnik, Geologist	(817)810-1982

II) WELL OBJECTIVES

The objective of the well is to drill and evaluate the Queen - San Andres Formations and complete the well as a San Andres producer. The expected **San Andres EUR** for the well is **XXXX MMCFGE**. The expected **IP** is **XXX MCFG & XX BO/D**.

III) LOCATION

Surface Location:	**2150 ft FNL 1650 ft FEL** **Section 7-T22S-R37E** Lea County, New Mexico **Lat: 32.407566 deg N** **Long: 103.198541 deg W**
Bottom-hole Location:	same, vertical
Elevation:	GL: 3430 ft KB: 3440 ft
Directions to Location:	From the intersection of Co. Rd. E-33 (Legion Rd.) and Co. Rd. E-23 (Texas Ave.) go south on Co. Rd. E-33 approx. 1.4 miles. Turn right and go west approx 1.6 miles. Turn left and go south approx. 0.2 miles to a proposed road survey. Follow proposed road survey approx. 220 feet to this location.
Access to Location:	Unrestricted

IV) PROGNOSIS

Upper Permian Rustler Fm	+2393 ft	1047 ft MD	
Upper Permian Yates Fm	+775 ft	2665 ft MD	
Upper Permian 7 Rivers Fm	+576 ft	2864 ft MD	
Upper Permian Queen Fm	+139 ft	3301 ft MD	
Upper Permian PS Fm	-15 ft	3455 ft MD	+
Upper Permian Grayburg Fm	-195 ft	3635 ft MD	*
Upper Permian San Andres Fm	-435 ft	3875 ft MD	*
PTD	-860 ft	4300 ft MD	

*= Primary Reservoir Targets
+= Secondary Reservoir Targets

EUNICE SOUTHWEST PROSPECT (San Andres)
Elliott "B" Fed. No. 17
Well Objectives/Prognosis/Evaluation

V) PRIMARY RESERVOIR TARGETS

Upper Permian **Grayburg DOL**

Rock Type:	DOL
Thickness:	~180 ft
Avg. Porosity:	7%; ranges from 0-14+%
Avg. Perm.:	? md
Est. Reservoir Temp.:	100-110°F
Est. Reservoir Press.:	1400-1450 psi (assuming no pressure depletion)

Upper Permian **San Andres DOL**

Rock Type:	DOL
Thickness:	~250 ft
Avg. Porosity:	10-13%; ranges from 3-20%
Avg. Perm.:	? md
Est. Reservoir Temp.:	100-110°F
Est. Reservoir Press.:	1400-1450 psi (assuming no pressure depletion)

VI) SECONDARY RESERVOIR TARGETS

Upper Permian **Queen &, Penrose-Skelly** Formations

VII) PROPOSED WELL DESIGN

Drilling Fluids/Additives: Brine, 10.1 lbs/gal
Casing Design:

VIII) EVALUATION

Mud-Logging:

Contractor:	**None**
Basic Requirements:	Cuttings lithology description/comments Oil shows/fluorescence/cut description Gas monitoring, chromatography, gas ratios Penetration rate/depth, rig operations, bit and mud properties One man unit
Correlation:	Please use the following logs for correlation and refer to Section **(X)** for offset well tops:
Sampling:	
Reporting:	E-mail/WWW or fax daily reports/logs to: **Martin Emery** **(Primary)** (817)810-1951 (wk) memery@rangeresources.com (817)810-1988 (fax) (817)430-4861 (hm) (817)366-3693 (cell)
Distribution:	see attached distribution

EUNICE SOUTHWEST PROSPECT (San Andres)
Elliott "B" Fed. No. 17
Well Objectives/Prognosis/Evaluation

VIII) EVALUATION (cont)

Conventional Coring: None

Open-Hole DSTs:
- DST Contractor: None
- DST Program: None
- Distribution: see attached distribution

Open-Hole Logging:

Contractor:	**HALLIBURTON**	
Logging Program:	2500-4300 ft MD (TD)	CSNG-DSN-SDL-DLL-Microguard (log GR-Neutron to surface)
Distribution:	see attached distribution	

IX) POTENTIAL HAZARDS/PITFALLS

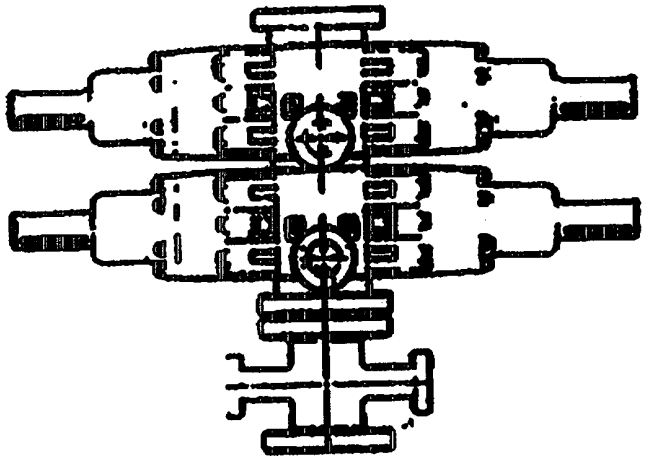
Problematic Drilling Zones:	
Abnormal Pressure/Temperature Zones:	Possibility of partial depletion within Queen to San Andres Formations
Fractured/Lost Circulation Zones:	See above; **Please tag mud if circulation is lost in primary pay interval**
Presence of H_2S or CO_2:	None expected
Faults Intersecting the Wellbore:	None expected

X) CORRELATION LOG TOPS:

Correlations
Upper Permian Rustler Fm
Upper Permian Yates Fm
Upper Permian 7 Rivers Fm
Upper Permian Queen Fm
Upper Permian PS Fm
Upper Permian Grayburg Fm
Upper Permian San Andres Fm
TD

Prepared by: Rennie Hubnik
Date: August 25, 2006
Revised: August , 2006

BLOW OUT PREVENTION EQUIPMENT



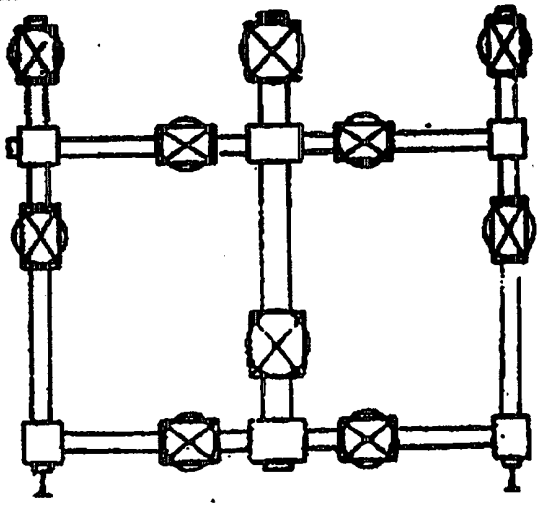
BOP Stack

— 1 Rucker Shaffer "B" double ram 10" - 3000 psi WP

Closing Unit

— Hydril model 80 three station accumulator
— Controls located in accumulator house and on rig floor

CHOKE MANIFOLD



900 Series. 3000 psi WP

PLAT #2

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☐

Operator: Range Operating New Mexico, Inc. Telephone: 817/810-1916 e-mail address: phale@rangeresources.com
Address: 777 Main St., Ste. 800, Ft. Worth, TX 76102
Facility or well name: Elliott B Federal #17 API #: 30-025- 38517 U/L or Qtr/Qtr G Sec 7 T 22S R 37E
County: Lea Latitude 32.407566 " N Longitude 103.198541" W NAD: 1927 ☒ 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☐ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☐ Unlined ☐ Liner type: Synthetic ☐ Thickness 12 mil Clay ☐ Pit Volume _____bbl	Volume: _____bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: We will not have a pit. We are using a closed loop system.

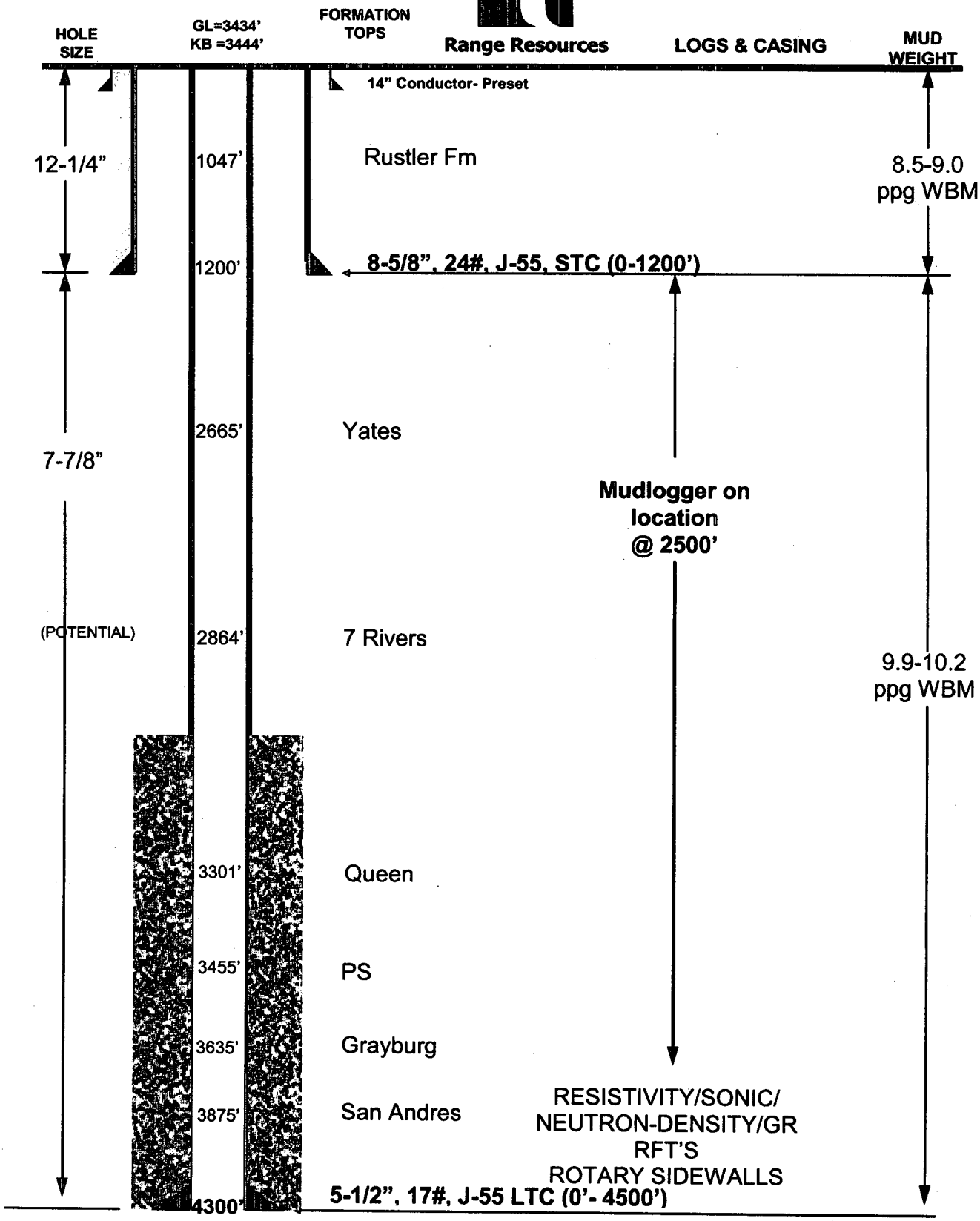
I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Date: 9-01-06
Printed Name/Title Paula Hale Signature Paula Hale

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title Chris Williams / Dist Sup Signature OC DISTRICT SUPERVISOR/GENERAL MANAGER Date: 10/10/06

WELL : **Elliott B Federal 17**
SL : **2150' FNL & 1750' FEL, Sec 7-T22S-R37E** **FIELD:Eunice San AndresSW**
COUNTY : **Lea County** **OBJECTIVE TD: 4300'**
STATE : **New Mexico**



Range Operating New Mexico

Elliott B Federal #17
Lea County, NM
Drilling Program

Prepared 9/01/06

PROPOSED DEPTH: 4,300' MD / 4,300' TVD
GROUND ELEVATION: **3,430'**
KB: **17'**

LOCATION: 2150' FNL & 1650' FEL, Section 7-T22S-R37E, Lea County, NM

ANTICIPATED PRODUCTIVE FORMATION: San Andres

API NO:

GENERAL:
The Elliott B Federal #17 will be a 4,300' San Andres test in Lea County, New Mexico drilled on a daywork basis by United Rig #24. An 12-1/4" surface hole will be drilled to +/-1200'. A string of 8-5/8" casing will be run and cemented to surface.

Nipple up BOPs and test same, drilling will continue with a 7-7/8" hole to a total depth of 4,400'. Actual TD will be spaced so that casing will be landed where the casing head can be screwed on. After electric-logging the open-hole interval, a string of 5-1/2" casing will be run and cemented from total depth to 1,000' and the tubing head installed.

ESTIMATED FORMATION TOPS: (Log Depths)

Upper Permian Rustler Fm	+2393 ft	1047 ft MD	
Upper Permian Yates Fm	+775 ft	2665 ft MD	+
Upper Permian 7 Rivers Fm	+576 ft	2864 ft MD	
Upper Permian Queen Fm	+139 ft	3301 ft MD	+
Upper Permian PS Fm	-15 ft	3455 ft MD	+
Upper Permian Grayburg Fm	-195 ft	3635 ft MD	+
Upper Permian San Andres Fm	-435 ft	3875 ft MD	*
PTD	-860 ft	4300 ft MD	

*= Primary Reservoir Targets
+= Secondary Reservoir Targets

DETAILED DRILLING PROCEDURE

TIMES AND EVENTS TO NOTE ON DRILLING REPORT:

A. SPUD (date and time)
B. TD (each interval date and time)
C. CEMENT IN PLACE (date and time)
D. RIG RELEASE (date and time)

BOTTOM HOLE ASSEMBLIES

BHA #1: (0-1200') - Bit, (2) 8" DC, (10) 6.25" DC's

BHA #2: (1200'-4500') - Bit, (24) 6.25" DC's

USE OF RT TOOL

No RT tools in use.

MUD PROGRAM

INTERVAL	MUD WEIGHT	FUNNEL VIS.	API Fluid Loss
0' - 1200'	8.4 – 9.4	32-34	NC
1200' - 4500'	10.0	28	NC

1) Level and build an all-weather location and access road.

2) MIRU United Rig #24. Perform rig safety inspection and ensure that everything is in proper working order prior to spudding well.

3) Notify NMOCD of intent to spud, run casing and cement each 24 hours in advance 505-748-1283.

4) Spud well with 12-1/4" mill tooth bit. Drill to +/- 1200' with surveys at 500' and 1000' (Actual depth will be determined by the length of the casing). Circulate hole clean. Sweep and condition hole to run casing. Pull out of hole, lay down BHA.

NOTE: Mud through this interval will be a native spud mud supplemented with Bentonite. Lime may be used to flocculate the mud and increase the yield point to clean the hole. Mix paper for seepage control. Utilize all solids control equipment to control drill solids. Run as fine of mesh shaker screens as possible. Use water to control mud weight and viscosity. Maintain mud weight at 8.4 – 9.0 ppg.

5) Rig up casing crew and run 8-5/8", 24#, J-55 casing as follows:

1-8-5/8" Texas Pattern Shoe
1-8-5/8" Insert Float Collar
1-8-5/8" x 11" Centralizer 10' above shoe
1-8-5/8" x 11" Centralizer every other joint
1-8-5/8" Stop Ring

6) Circulate for at least bottoms up plus one casing volume with mud prior to cementing. Cement surface casing according to cement recommendation. NOTE: Have field bin, cement, and circulating equipment on location prior to casing job.

a) Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement in the event that a problem is encountered while cementing. Discard this sample if all indications are positive.

b) Cement well as follows: Pump 20 bbl fresh water followed by **200** sks of Lead: 35/65 POZ:Class C + 6% D020 + 5% (BWOW) D044 + 1 pps D130, @ 12.8 ppg, followed by **180** sks Tail: Class C + 1% S001 + 0.1 pps D130 @ 14.8 ppg. Displace with fresh water, bump plug with w/ 500 psi over final pump pressure.

c) If cement is not circulated to surface, contact the office and the NMOCD and prepare to run 1" pipe and top out cement. Have 1" pipe on location for possible top-out.

d) If cement falls, fill 12-1/4" X 8-5/8" annulus with cement.

7) Release pressure and check for flow back. Set casing on bottom. If float is holding, base nipple up of wellhead and BOP on the surface cement samples. Well must stand at least 8 hours total before any testing of casing is performed as per NMOCD.

8) After cementing casing, weld on 8-5/8" flange type casing head. Test BOP blind rams & choke manifold to 250# low & 3000# high. Pick up Bit #2 (7-7/8") & BHA , trip in hole, test BOP pipe rams to 250# low & 3000#. **Pressure test casing to 1000 psi for 30 minutes prior to drilling out shoe.** Clearly report this test information of the daily drilling report.

MUD NOTES: See Mud Program for details

After cementing 8-5/8" casing circ pit with brine water. Mix paper for seepage control. Utilize pre-hydrated Gel/Lime sweeps for flushing the hole. Run all available solids control equipment to control weight. Add brine water as needed to maintain volume. Add LCM to system only as needed. Use batch LCM treatment if losses occur and maintain as needed.

9) Drill ahead with brine water in 7-7/8" hole taking deviation surveys every ± 500' or nearest bit run per NMOCD rules. Use sweeps as needed to clean hole. Drill to ± 4400; exact TD will be determined by the length of the casing. Sweep and condition hole in preparation for logging. Spot a 50 bbl, 40-42 visc pill prior to POOH for logs. Strap out of hole.

10) RU Wireline Truck and Tools. Log well as instructed by Range Operating NM. Rotary sidewall cores may be required along with RFT's.

11) Make a conditioning trip prior to running casing. Trip into hole with BHA and drill pipe, break circulation at 4500'. Ream last two stands to bottom. Circulate and condition hole. Maintain viscosity of 28. TOH laying down 4-1/2" drill pipe and drill collars. Clear floor and prepare to run casing.

12) Rig up casing crew and run 5-1/2", 17#, J-55, LT&C as follows:
   a) Float shoe (thread-lock)
   b) 1 jt. 5-1/2", 17#, J-55, LT&C casing (thread-lock)
   c) Float collar (thread-lock)
   d) 5-1/2", 17#, J-55, LT&C Casing to surface.

   The two bottom joints of 5-1/2" casing and the float shoe and float collar should be thread-locked (do not weld pipe). Run 1 centralizer 5' above shoe with limit clamp, one on the next collar, one just below the float collar with limit clamp and one per joint up to 3300'.

13) Circulate mud for at least bottoms up plus one casing volume prior to cementing.

14) Cement the production casing as follows. Re-figure cement volumes on a basis of: caliper + 20% + 50 sx. Precede cement with 20 bbl fresh water, 500 gals superflush, 20 bbl fresh water.

Lead (3,500' to 1,000'):

450 sacks
Slurry: 35:65 Poz : Class C + 6% D20 + 5% D44 + 0.3% S1 + 4 pps D42 + 0.1 pps D130
Slurry Weight: 12.5 ppg Slurry Yield: 2.16 cuft/sk Water: 11.6 gals/sk

Tail (4,500' to 3,500');

250 sacks
Slurry: 50:50 Poz : Class C + 2% D20 + 5% D44
Slurry Weight: 14.2 ppg Slurry Yield: 1.36 cuft/sk Water: 6.33 gals/sk

Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement.

   a) Have additional water storage on location as necessary for mixing cement. Have water analyzed by cementing company for compatibility with cement and chemicals.

   b) Reciprocate pipe during cement job. Take special care to move pipe very slowly on the down stroke. Pump spacer and cement at 7-8 BPM. When the last cement has been pumped, maintain rate at 7-8 BPM. Displace with fresh water. When reaching displacement to shoe joint minus 10 bbls slow pump rate to 2 barrels per minute or less prior to bumping plug. Bump plug with 500 psi over final displacement pressure and hold pressure for 15 minutes.

15) Release pressure and check for flow back. If floats are holding, continue to make preparations to hang 5-1/2" casing one (1) foot off bottom. If floats do not hold, wait 12 hours on cement.

16) Set 5-1/2" slips in "A" section with full string weight. Nipple down BOP, Nipple up well head.

17) Install cap. Clean mud pits and release rig.

CEMENT TESTING REQUIREMENTS:

Laboratory Blend: Obtain thickening time, rheology, water loss, and compressive strengths of the laboratory cement blend with a water sample of the actual water to be used in cementing for each cement slurry to be pumped.

Field Blend: Obtain thickening time of the field cement blend with a water sample of the actual water to be used in cementing for each slurry to be pumped. If the thickening time of the field blend is consistent with the thickening time of the laboratory blend, proceed with the cement job. If not, wait on the compressive strength results. Regardless of thickening time results, obtain all of the compressive strengths of field blend to compare with the compressive strengths of the laboratory blend.

Don Robinson	Drilling Manager	(469) 450-2281	(972) 317-8345	(817) 509-1506
George Allen Teer	VP of Operations	(817) 723-1107	(817) 491-3740	(817) 870-2601
Bryan Surles	District Engineer	(817) 360-9663	(817) 346-8188	(817) 810-1971
Martin Emery	Chief Geologist	(817) 366-3693	(817) 430-4861	(817) 870-2601
Paula Hale	Sr. Regulatory Sp.	(817) 773-6002		(817) 810-1916

United Rig Company, Artesia, NM	Rig Company	Angel Salazar	(505) 623-7730
United Rig #24			
Nova Mud, Inc - Hobbs, NM	Drlg Mud	Dale Welch	(800) 530-8786
Master Tubulars – Midland, TX	Casing & Tubing	Randy Martin	(800) 682-8996
Suttles Logging, Inc. – Midland, TX	Mudlogging	Sam Samford	(432) 687-3148
Schlumberger-Artesia, NM	Cementing Service	Lynn Northcutt	(505)748-1392 cell (505) 365-7510
National – Hobbs, NM	Well Heads		(505) 393-9928
Weatherford –Artesia, NM	Float Equipment		
Halliburton Logging –Hobbs, NM	Open Hole Logs	Michael Escriva Tommy Johnson	(505) 392-7543
Allen's Casing Crew -Hobbs, TX	Csg Crew		
National –Hobbs, NM	General Supplies		(505) 393-9928
TFH –Hobbs, NM	Fork Lift		(505) 397-3270
Abbot Brothers	Conductor setting		
RTO Sales & Lease	Satellite Internet		(432) 550-5678

CONDITIONS OF APPROVAL - DRILLING

Well Name & No.	**17 – ELLIOTT B FEDERAL**
Operator's Name:	**RANGE OPERATING NEW MEXICO, INC.**
Location:	**2150' FNL & 1650' FEL – SEC 7 – T22S – R37E – LEA COUNTY**
Lease:	**LC-032573B**

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5909 or (505) 361-2822 (After hours) - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: **8-5/8** inch **5-1/2** inch

C. BOP tests

2 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

II. CASING:

1. The **8-5/8** inch surface casing shall be set at **1200 feet , however if salt is encountered before 1200 feet the operator is to set surface casing 25 feet above the top of the salt**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is **cement shall extend upward a minimum of 500 feet above the uppermost hydrocarbon bearing interval.**

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **8-5/8** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) is **2000** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- A variance to test the **8-5/8" surface casing** to the reduced pressure of **1000** psi with the rig pumps is approved.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.