

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 20005. Lease Serial No.  
**NMSF-078094**6. If Indian, Allottee or Tribe Name  
**N/A**7. If Unit or CA Agreement, Name and No.  
**N/A**8. Lease Name and Well No.  
**FULLERTON FEDERAL 6R**9. API Well No.  
**30-045- 31610**10. Field and Pool, or Exploratory  
**BASIN DAKOTA**11. Sec., T., R., M., or Blk. and Survey or Area  
**11-27n-11w NMPM**12. County or Parish  
**SAN JUAN**13. State  
**NM**1a. Type of Work: ☒ DRILL ☐ REENTER1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone2. Name of Operator  
**MARKWEST RESOURCES, INC.**3a. Address **155 INVERNESS DR., SUITE 200  
ENGLEWOOD, CO. 80112**3b. Phone No. (include area code)  
**(303) 290-8700**

4. Location of Well (Report location clearly and in accordance with any State requirements. \*)

At surface **2280' FNL & 1980' FWL**At proposed prod. zone **SAME**14. Distance in miles and direction from nearest town or post office\*  
**8 AIR MILES SOUTH OF BLOOMFIELD**15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any) **1,980'**16. No. of Acres in lease  
**2,560**17. Spacing Unit dedicated to this well  
**320 ACRES (N2)**18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. **1,157'**19. Proposed Depth  
**6,500'**20. BLM/BIA Bond No. on file  
**KA6084 (BLM - NATIONWIDE)**21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
**6,075' GL**22. Approximate date work will start\*  
**MAY 1, 2003**23. Estimated duration  
**10 DAYS TO DRILL**

## 24. Attachments

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

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

## Comments

This action is subject to technical and  
procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4  
DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".

**HOLD C104 FOR NSL**

25. Signature

Name (Printed/Typed)

**BRIAN WOOD**

Date

**4-1-03**

Title

**CONSULTANT****PHONE: 505 466-8120****FAX: 505 466-9682**

Approved by (Signature)

**/s/ David J. Mankiewicz**

Name (Printed/Typed)

Date

**APR 15 2003**

Title

Office

Application approval does not warrant or certify the 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.

**NMOCD**

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045-31610		<sup>2</sup> Pool Code 71599	<sup>3</sup> Pool Name BASIN DAKOTA
<sup>4</sup> Property Code 27395	<sup>5</sup> Property Name FULLERTON FEDERAL		<sup>6</sup> Well Number 6R <del>6R</del>
<sup>7</sup> OGRID No. 193195	<sup>8</sup> Operator Name MARKWEST RESOURCES, INC.		<sup>9</sup> Elevation 6075'

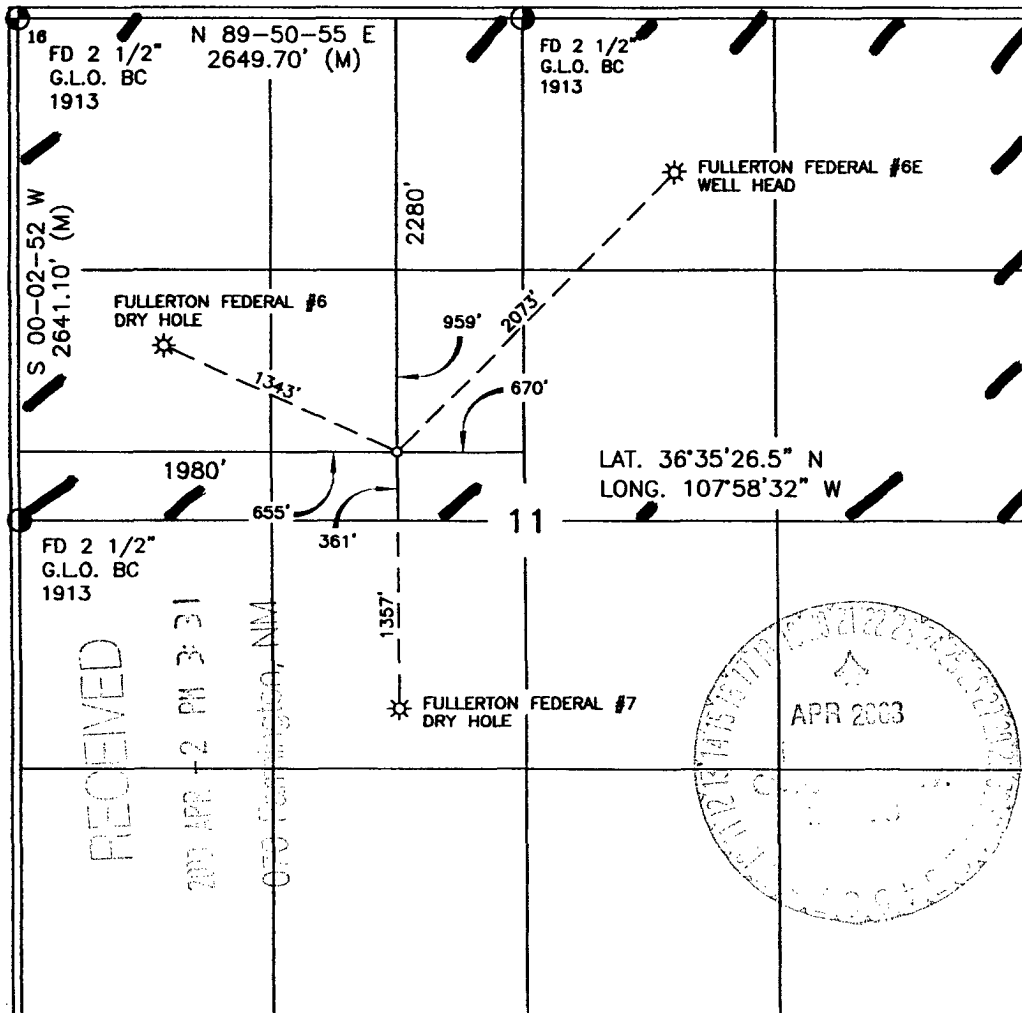
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
. F	. 11	. 27-N	. 11-W		. 2280'	. NORTH	. 1980'	. WEST	SAN JUAN

<sup>11</sup> 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
<sup>12</sup> Dedicated Acres 320					<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.

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.

Signature: *Brian Wood*

Printed Name: BRIAN WOOD

Title: CONSULTANT

Date: APR. 1, 2003

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.

Date of Survey: Nov 18, 2002

Signature and Seal of Professional Surveyor:

14827

Certificate Number

MarkWest Resources, Inc.  
Fullerton Federal 6R DK  
2280' FNL & 1980' FWL  
Sec. 11, T. 27 N., R. 11 W.  
San Juan County, New Mexico

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## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Nacimiento Fm	000'	12'	+6,075'
Ojo Alamo Ss	770'	782'	+5,305'
Kirtland Sh	874'	886'	+5,201'
Fruitland Coal	1,430'	1,442'	+4,645'
Pictured Cliffs Ss	1,845'	1,857'	+4,230'
Point Lookout Ss	4,256'	4,268'	+1,819'
Gallup Ss	5,402'	5,414'	+673'
Greenhorn	6,217'	6,229'	-142'
Dakota Ss	6,336'	6,348'	-261'
Total Depth (TD)*	6,500'	6,512'	-425'

\* all elevations reflect the ungraded ground level of 6,075'

### 2. NOTABLE ZONES

#### Gas or Oil Zones

Fruitland  
Pictured Cliffs  
Gallup  
Dakota

#### Water Zones

Nacimiento  
Ojo Alamo  
Kirtland  
Fruitland

#### Coal Zone

Fruitland

Water zones will be protected with casing, cement, and weighted mud. Fresh water found while drilling will be recorded. Oil or gas shows will be tested for commercial potential based on the geologist's recommendations.

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Fullerton Federal 6R DK  
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### 3. PRESSURE CONTROL

Maximum expected pressure is  $\approx 1,200$  psi. The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 11" 3,000 psi model is on PAGE 3.

BOP equipment and all accessories will meet or exceed BLM requirements in 43 CFR Part 3160 for a 3,000 psi system. A 3,000 psi double ram hydraulic BOP will be used. Accumulator system capacity will be sufficient to close all BOPE with a 50% safety factor. Fill, kill, and choke manifold lines will be 2". Accessories will include upper and lower Kelly cocks with handles, stabbing valve to fit drill pipe on floor at all times, string float at bit, 3,000 psi choke manifold with 2" adjustable and 2" positive chokes, and pressure gauge. BOPs will be tested every 24 hours. Tests will be recorded on I. A. D. C. log.

### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>Connection</u>	<u>GL Setting Depth</u>
12-1/4"	8-5/8"	24	K-55	New	ST & C	400'
6-1/4"	4-1/2"	11.6	N-80	New	ST & C	6,500'

Surface casing will be cemented to the surface with  $\approx 330$  cubic feet ( $\approx 280$  sacks) Class B + 1/4 lb/sk cello-flake + 2% CaCl<sub>2</sub>. Yield = 1.18 cubic feet per sack. Weight = 15.6 pounds per gallon Volume = 100% excess. W. O. C. = 12 hours. Surface casing will be tested to 500 psi for 30 minutes.

An 8-5/8" notched regular pattern guide shoe and three centralizers will be used on the surface casing. Centralizers will be at 120' intervals starting with the bottom joint. Baker Lock the collar to the pin or the top of the shoe joint. Baker Lock the shoe on the bottom. Will run a centralizer with a lock ring on the bottom joint and a centralizer on the second joint.

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Production casing will be cemented to the surface. Volumes are calculated at >100% excess. If cement does not circulate to surface, then a temperature survey will be run to determine the actual cement top as needed. W. O. C. = 12 hours. Test to 2,000 psi.

Lead cement will be  $\approx$ 1,584 cubic feet ( $\approx$ 1,100 sacks) Super H 50/50 Poz cement with 2% gel + 0.2% Veraset (thixotropic additive) + 0.1% Diacel LWL (low fluid loss) + 1.5% zone sealant 2000 (foamer). Mixed @ 13 pounds per gallon for a yield of 1.44 cubic feet per sack. Mixed to 9 pounds per gallon with 50-464 SCF/bbl N<sub>2</sub> (48 hour strength = 900 psi.) Tail with 238 cubic feet (165 sacks) 50/50 Class H Poz with 2% gel + 0.2% Veraset + 0.1% Diacel LWL (low fluid loss). Mixed to 13 pounds per gallon for a yield of 1.44 cubic feet per sack (no N<sub>2</sub>). Cap down annulus with 153 cubic feet (130 sacks) Class B with 2% CaCl<sub>2</sub> + 0.15% Veraset (no N<sub>2</sub>).

Production casing will be cemented with 4-1/2" cement nose guide shoe with a self-fill insert float. Will place float one joint above the shoe. Five centralizers will be spaced on every other joint, starting with the float collar. Centralizers will be placed at 120' intervals from 960' to the surface. Total centralizers = 10.

#### 5. MUD PROGRAM

<u>Range</u>	<u>Mud Type</u>	<u>Weight (ppg)</u>
0' - 400'	Fresh-Spud	8.4
400' - TD	LSND	8.6

Lost circulation, weighting, and absorption material will be on location.