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Farmington Field Office

RCVD AUG 7 '08
OIL CONS. DIV.
DIST. 3

Form 3160-3
(February 2005)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No: **NM|NM 099705**

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.: **Eagle Springs 9 Federal #1**

2. Name of Operator: **High Plains Operating Company, LLC**

9. API Well No.: **30-043-21065**

3a. Address: **32700 Aspen Drive, Buena Vista, CO 81211**

3b. Phone No. *(include area code)*: **719-395-8059**

10. Field and Pool, or Exploratory *(96899)*: **Arena Blanca Entrada Southeast**

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

At surface: **460' FNL and 350' FWL**

At proposed prod. zone: **Same**

11. Sec., T. R. M. or Blk and Survey or Area: **D Section 9-T19N-R04W**

14. Distance in miles and direction from nearest town or post office*: **23 miles west-wouthwest of Cuba, New Mexico**

12. County or Parish: **Sandoval**

13. State: **NM**

| 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 |
|---|---|---|
| 460' / 350' | 2052.88 (4) | 40 acres; NW/4 NW4 |

| 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 |
|---|---|---|
| 2,660' | 5,530' | NMB 000457 |

| 21. Elevations (Show whether DF, KDB, RT, GL, etc) | 22. Approximate date work will start* | 23. Estimated duration |
|---|---|---|
| 6,681' GL | 08/15/2008 | Two months |

## 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.
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)* | Date |
|---|---|---|
| Arthur W. Butler III | Arthur W. Butler III | 07/11/2008 |

Title: **Managing Partner; High Plains Operating Company, LLC**

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| /s/ Lynda Townsend | | 8/5/08 |
| Title: Acting AFM Minerals | 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.

*(Instructions on page 2)

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

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

AUG 11 2008

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.

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

NMOCD

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

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

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

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

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-043-21065 | 96899 | Arena Blanca Entrada, SE (oil) |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 37298 | EAGLE SPRINGS 9 FEDERAL | 1 |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 246238 | HIGH PLAINS OPERATING COMPANY, LLC | 6681 |

## [10] Surface Location

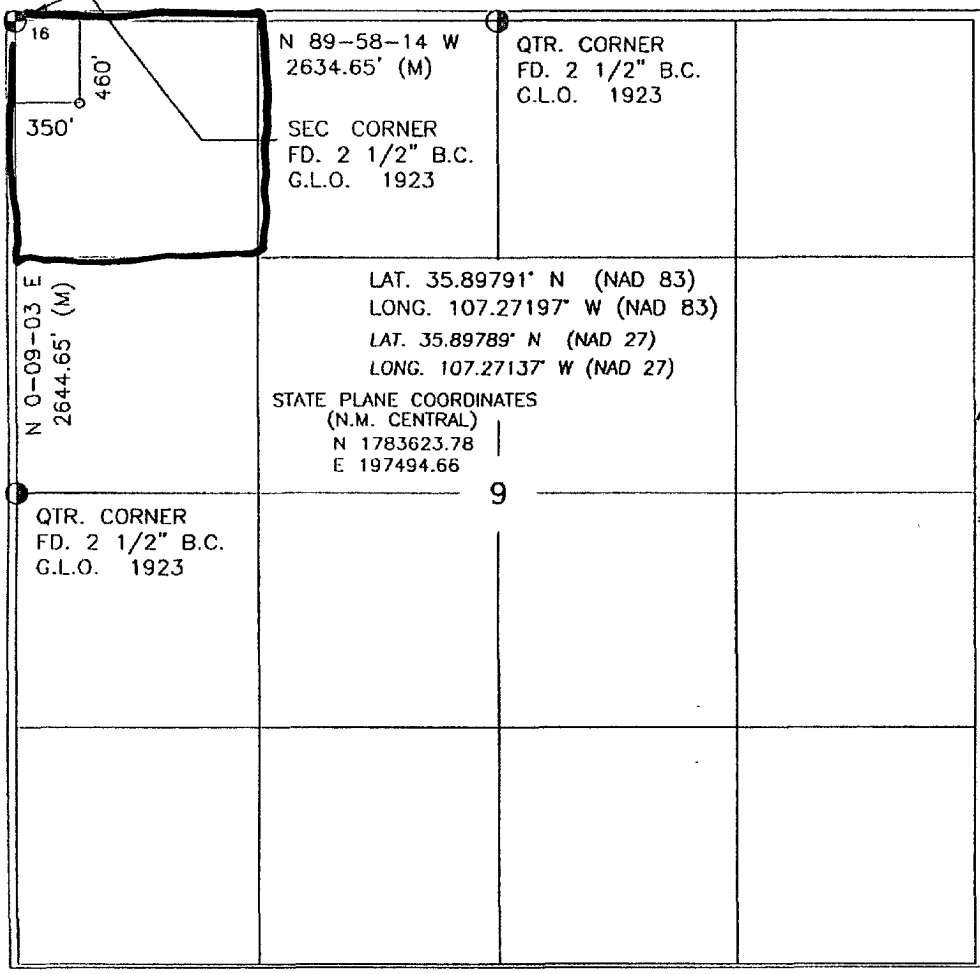
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| D | 9 | 19-N | 4-W | | 460 | NORTH | 350 | WEST | SANDOVAL |

## [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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No |
|---|---|---|---|
| NW/SW4 40ac | | | |

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.

Arthur W. Butler III 7/11/08
Signature Date

Arthur W. Butler III
Printed Name

## [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 knowledge and belief.

APRIL 15, 2008
Date of Survey

Signature and Seal of Professional Surveyor:

ROY A. RUSH
NEW MEXICO
8894
REGISTERED PROFESSIONAL LAND SURVEYOR
4-30-08

8894
Certificate Number

**High Plains Operating Company, LLC**
**Eagle Springs 9 Federal #1—Drilling program**

**API #:** 30-043- (To be determined)
**Well location:** NW quarter of the NW quarter of section 9–Township 19 North–Range 4 West Sandoval County, New Mexico
**Surface location:** 460′ FNL and 350′ FWL
**Bottomhole location:** Same
**Federal Lease #:** NM|NM 99705

## DRILLING PROGRAM

**Synopsis:** High Plains Operating Company, LLC (HPOC) plans to drill the Eagle Springs 9 Federal #1 well to a total measured depth of approximately 5,530′ and evaluate the Entrada sandstone formation for productive potential. This well is one-half mile east of the existing HPOC Eagle Spring 8 Federal #2M well located in the northwest of the northeast quarter of section 8, completed as an Entrada producer by HPOC in 2007. The Eagle Springs 9 Federal #1 will test a separate structural feature in the area.

HPOC will drill to approximately 5,510′ immediately above the Entrada reservoir, run open hole logs, set 7″ casing and change the drilling fluid from a water-based mud to produced Entrada oil. A closed-loop circulation system will be used for oil drilling the last 20′–30′ of hole into the Entrada. Only 6–8′ of porous Entrada reservoir will be penetrated.

Depending on structural position and formation evaluation, the Eagle Springs 9 Federal #1 well will be completed "open hole" as an Arena Blanca Entrada, Southeast Pool producing well.

### 1. FORMATION TOPS

| FORMATION NAME | MEASURED DEPTH |
|---|---|
| Kirtland/Fruitland | Surface |
| Cliff House | 810′ |
| Menefee | 1,401′ |
| Point Lookout Sandstone | 2,154′ |
| Mancos | 2,430′ |
| Gallup Sandstone | 3,224′ |
| Greenhorn | 4,271′ |
| Graneros | 4,348′ |
| Dakota Sandstone 1 | 4,482′ |
| Dakota Sandstone 2 | 4,582′ |
| Morrison | 4,720′ |
| Summerville Shale | 5,458′ |
| Todilto | 5,534′ |
| Entrada Sandstone | 5,520′ |
| Total Depth | 5,530′ |

## 2. ZONES OF INTEREST

| OIL & GAS ZONES | WATER ZONES | COAL ZONE |
|---|---|---|
| Gallup SS (3,224′ MD) | Ojo Alamo (220′ MD) | Fruitland (280′ MD) |
| Dakota Sandstone 2 (4,582′ MD) | Point Lookout (2,154′ MD) | |
| Entrada Sandstone (5,520′ MD) | | |

All fresh water zones will be protected behind 7″ casing run to a measured depth of approximately 5,510′.

## 3. PRESSURE CONTROL

The drilling contractor has not been selected as of this date, so the exact BOP configuration to be used is not yet known. A typical 2,000 psi stack (900 series) is shown on Exhibit A. A 900 series (2,000# WP) choke manifold system is shown in Exhibit B and will be installed and tested to 1,000 psi before drilling out below surface casing.

This BOP and choke manifold will remain in use throughout the drilling operations. A full opening safety valve shall be on the rig floor at all times in the open position. This valve will have a thread design to be compatible with the drill pipe and drill collars.

All BOP pressure and daily mechanical tests will be recorded in the driller's log. BOP's will be inspected and operated 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 casings strings, which are set and cemented in place.

## 4. CASING AND CEMENT

| Hole Size | Csg O.D. | Weight/Ft. | Grade | Thread Type | Condition | Depth |
|---|---|---|---|---|---|---|
| 12.25″ | 9 5/8″ | 32.3# | H-40 | 8rd ST&C | New | 350′ |
| 8.75″ | 7″ | 23# | J-55 | 8rd LT&C | New | 5,510′ |

The 9 5/8″ surface casing will be cemented in one stage circulated to surface with a volume no less than 100% excess over gauge hole. Type G cement will be used, containing 2% calcium chloride and 1/8$^{th}$ lb/sk poly-E-flake mixed at 15.6 ppg with a 1.18 yield.

The 7″ production casing will be cemented in one stage using foamed lead cement. The 7″ casing will be run as follows. First, a 7″ guide shoe will be run, then a 7″ shoe joint, followed by a float collar and casing back to surface. Centralizers will be placed according to indicated porous zones. The 7″ casing is proposed to be cemented as follows: Pump 10 bbls 8.33 lb/gal fresh water, followed by 20 bbls 10.0 lb/gal Super Flush 101, followed by 10 bbls 8.33 lb/gal fresh water, followed by 710 sks HALSEAL ™ SYSTEM foamed lead cement, followed by 120 sks HALSEAL ™ SYSTEM tail cement, followed by 222 bbls 8.33 lb/gal fresh water. The HALSEAL ™ SYSTEM will be mixed at 13 ppg with a 1.43 yield. The cement will be foamed to a density no less than 9.0 ppg. Actual cement volumes will be determined using the open hole log caliper plus 25% excess.

## 5. MUD PROGRAM

| Depth | Type | Weight/PPG | Viscosity | Fluid Loss | pH |
|---|---|---|---|---|---|
| 0′–400′ | Water based, Gel-Chem | 8.6–8.8 | 50-60 | No control | 8.0–10 |
| 400′–5,530′ | Water based, Gel-Chem | 8.8–9.2 | 35–45 | 10–12 cc | 8.0–10 |
| 5,510′–5,530′ | Produced Entrada oil | 7.2 | 10 | No control | n/a |

Shale formations to be drilled in the area are water sensitive and should be drilled with a low solids, non-dispersed mud system. Drispac and P.H.P.A. polymer should be added to the mud, and water loss controlled at 10–12 cc. A viscosity of 35–40 Sec/Qt should be sufficient to clean the hole.

Significant loss circulation zones have been encountered in the Gallup formation in other wells drilled in the area. The mud will be pre-treated with 5–10% loss materials at 3,400′ and possibly maintained until casing point at 5,510′. Fifty feet from casing point, add gel to increase viscosity to 65–70 Sec/Qt to insure logging and casing operations.

Sufficient material needed to maintain mud properties, control loss circulation zones, and contain any unforeseen pressure control situations will be maintained at the well site during all drilling operations.

## 6. CORING, TESTING & LOGGING PROGRAM

No coring operations or drill stem tests are planned at this time. The logging suite will consist of a Triple-combo log; Gamma Ray-Formation Density Log-Compensated Neutron Log-Spontaneous Potential-Array Induction Log. The Array Induction Log will be run over the open hole from +/- 350′ to TD. The porosity log will be run over the logging contractors minimum footage requirement and any potential pay intervals.

## 7. DOWNHOLE CONDITIONS

A research of wells drilled in the area shows no abnormally pressured zones or temperatures will be encountered. No hydrogen sulfide is present in any of the formations that will be penetrated. Maximum expected BHP is +/- 2,200 p.s.i. (from the Entrada DST in the Eagle Springs 8 Federal #1).

## 8. OTHER PERTINENT INFORMATION

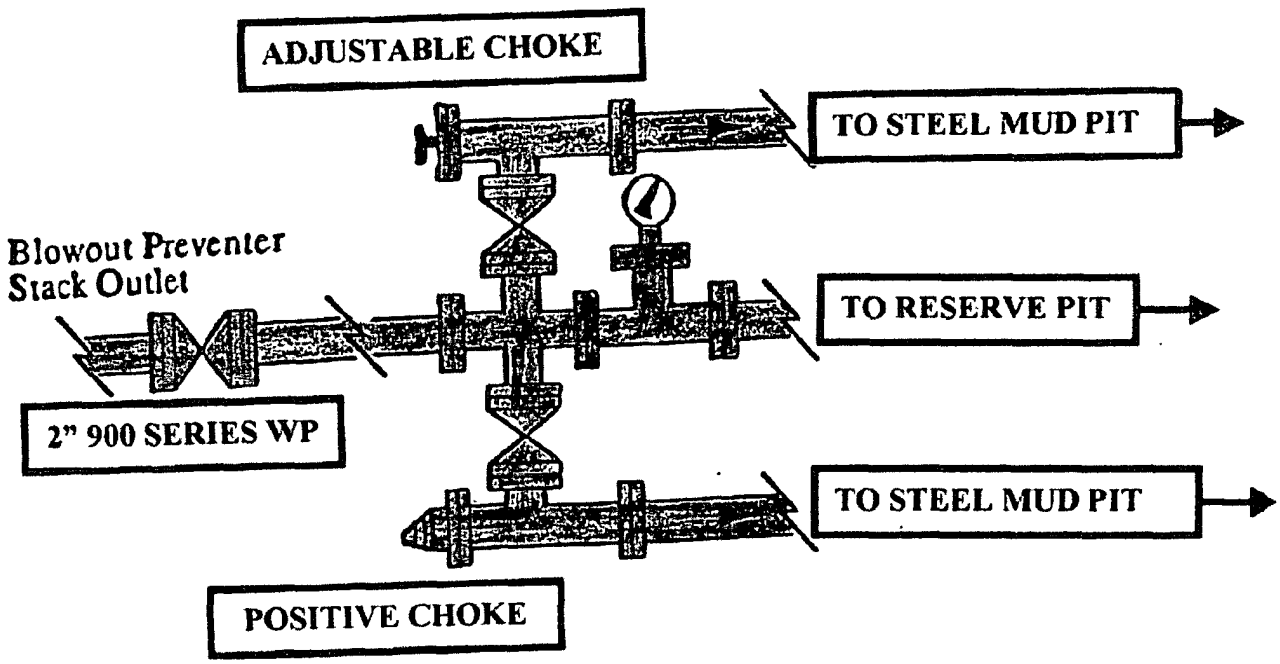
Anticipated spud date will be upon approval of the APD by the BLM and rig availability. Drilling of the well is expected to take +/- 14 days. Completions operations as an Entrada producer will take +/- 5 days, and will commence as soon as possible following release of the drilling rig.

Questions concerning down hole operations should be directed to the Albuquerque, NM BLM office at 505-761-8700.

## Exhibit B—Proposed 2,000# WP Choke Manifold

**Eagle Springs 9 Federal #1—Drilling program**

| | |
|---|---|
| Operator: | High Plains Operating Company, LLC |
| API #: | 30-043- (to be determined) |
| Well total depth: | 5,530′ measured depth |
| Federal Lease #: | NM|NM 99705 |



## Exhibit A—Proposed 2,000# WP BOP Stack

**Eagle Springs 9 Federal #1—Drilling program**

| | |
|---|---|
| Operator: | High Plains Operating Company, LLC |
| API #: | 30-043- (to be determined) |
| Well total depth: | 5,530′ measured depth |
| Federal Lease #: | NM\|NM 99705 |