N.M. Oil Cons. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

Month - Year
OCD - ARTESIA, NM

Form 3160-3
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **NM 036718**	
6. If Indian, Allotee or Tribe Name	
7 If Unit or CA Agreement, Name and No.	
1a. Type of work: ☑ DRILL ☐ REENTER	
1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. **Rhinestone Federal 29 Com #1** 36503
2. Name of Operator **Rubicon Oil & Gas, LLC** 194266	9. API Well No. 30-005-63936
3a. Address **508 W. Wall St, STE 500**	3b. Phone No. *(include area code)* **(432) 687-5100**
	10. Field and Pool, or Exploratory **Diamond Mound (Morrow)**
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface **1200 FSL & 1200 FWL** At proposed prod. zone	11. Sec., T. R. M. or Blk. and Survey or Area **Section 29, T-15-S, R-28-E**
14. Distance in miles and direction from nearest town or post office* **13 Miles SE of Hagerman**	12. County or Parish **Chaves** / 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 **320 acres**	17. Spacing Unit dedicated to this well **320**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth **9300'**	20. BLM/BIA Bond No. on file **BLM # 2922 Statewide # B32644643**
21. Elevations (Show whether DF, KDB, RT, GL, etc.) **GL 3591'**	22. Approximate date work will start* **04/15/2007**	23. Estimated duration **30 days**

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 Kay Maddox	Name *(Printed/Typed)* **Kay Maddox (432) 638-8475**	Date **03/02/2007**
Title **Regulatory Agent**		

Approved by *(Signature)* /S/ DAVID R. GLASS	Name *(Printed/Typed)*	Date MAY 08 2007
Title For Assistant Field Manager, Lands And Minerals	Office ROSWELL FIELD OFFICE	APPROVED FOR 1 YEARS

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)

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

State of New Mexico

Energy, Minerals and Natural Resources Department

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

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210

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

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

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
	76079 ~~20~~ 29	Diamond Mound (Morrow)

Property Code	Property Name	Well Number
	RHINESTONE FEDERAL ~~20~~ 29 COM	1

OGRID No.	Operator Name	Elevation
194266	RUBICON OIL AND GAS, LLC	3591'

Surface Location

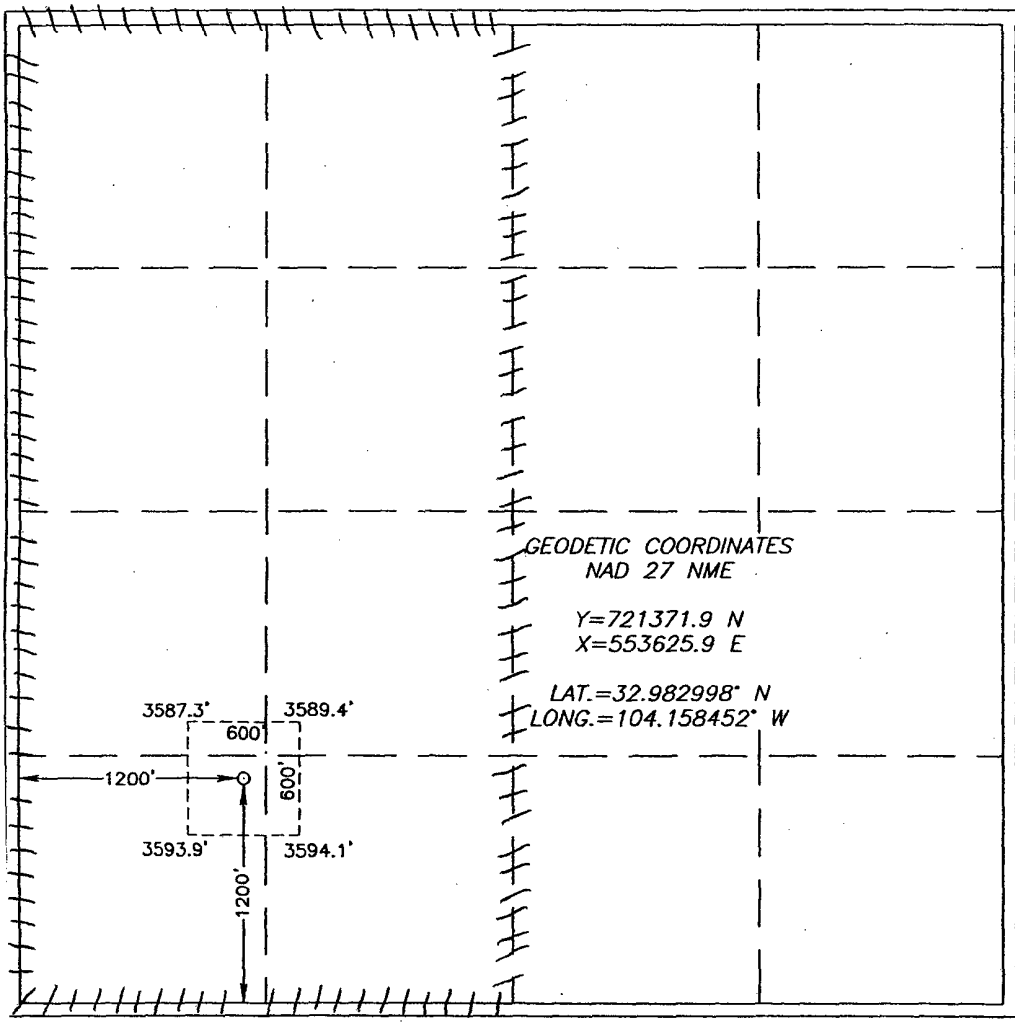
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	15-S	28-E		1200	SOUTH	1200	WEST	CHAVES

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.
320			

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.

Signature — Date: 3/2/07

HAL LEE AGENT
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.

OCTOBER 6, 2006
Date Surveyed — LA

Signature & Seal of Professional Surveyor

GARY L. EDSON — NEW MEXICO — 12641 — REGISTERED PROFESSIONAL SURVEYOR

10/20/06

06.11.1607

Certificate No. GARY EDSON 12641

Nine Point Drilling Plan

(Supplement to BLM 3160-3)

Rubicon Oil & Gas, LLC

Rhinestone Federal 29 Com. 1

Section 29, T-15-S, R-28-E 1200' FSL & 1200' FWL

Field: Diamond Mound Morrow

Chaves Co., NM

1. Name and estimated tops of geologic horizons:

   Surface formation is the Quarternary Alluvium.

   Queen ~1100, , San Andres ~1900 Abo. ~5300', Strawn ~8400', Atoka ~8850', Morrow ~9000', Miss ~ 9150, TD 9,300.

2. Protection of possible useable water will be achieved by setting 13-3/8" surface casing @ 400'+/- and cementing it to surface. Isolation of any evaporate/ anahydrite section will be achieved by setting 8-5/8" casing @ 2000' +/- into the San Andres, and cementing back to surface.

3. The well control equipment to be employed during the drilling of this well is illustrated on attached EXHIBIT A. This equipment includes a 13-5/8"- 2 ram BOP, annular BOP and choke manifold of comparable pressure rating. Equipment will be rated for 3000 PSI (except Annular which is rated for 2000 psi) and will be tested to 3000 psi (except Annular which will be tested to 70% of rated working pressure – 1400 psi) prior to drilling out of the 8-5/8" intermediate casing. Prior to drilling out of the 13-3/8" surface casing the same equipment and casing shall be tested to 1211 PSI or 70% of the burst rating of the casing utilizing the rig pumps. A hydraulic closing unit will be a part of this equipment and will be function tested daily.

4. The casing strings will consist of the following:

   Conductor 20" set @ 40'

   Surface: 13-3/8" OD, 48 #/ft, H40, STC, new pipe @ 400'+/- in 17-1/2" hole.

   Intermediate: 8-5/8" OD, 32 #/ft, J55, STC, new pipe @ 2000+/- in 12-1/4" hole.

   Production: 5-1/2" OD, 17.0#/ft, L-80, LTC, new pipe @ 9,300'+/- in 7-7/8" hole

5. Cementing programs for the above casing strings are:

   Conductor @ 40' cemented to surface utilizing redi-mix cement

Surface @ 400': **Lead Slurry**: 180 sks Class C Lite w/ .25 pps Flocele, 5 pps Gilsonite , yld ~ 1.85 cu ft/ sk, mixed @ 12.7 ppg

Tail Slurry: 200 sks Class C w/ 2% CaCl-, yld 1.34 cuft/sk, mixed @ 14.8 ppg.

The above volume represents 100% excess over calculated hole volume, and will be adjusted to actual setting depth of casing. The slurries will be preceded by a fresh water spacer, and displaced with fresh water.

Intermediate 1 @ 2000':

Lead Slurry: 525 sks Class C Interfill w/ additives, yld ~ 2.54 cu ft/sk

Tail Slurry: 200 sks Class C w/ 2% CaCl, yld ~ 1.34 cu ft/sk

The above volume represents 100% excess over calculated hole volume - actual volumes will be adjusted to a fluid caliper run at TD of this hole section with 10% excess added. The cement slurries will be preceded by 20 bbls cement wash for mud removal and displaced with fresh water.

Production 1: 9300 to~6000'

Lead Slurry: 200 sks Class H Lite with vendor recommended additives

Tail Slurry: 200 sks Class Super H with vendor recommended additives.

Actual cement volume, type and additives will be determined from hole conditions encountered and prospective zones determined from e-logs. Actual volumes pumped will be determined from an open hole caliper recorded over this interval.

6. It is anticipated that this well will be drilled to TD utilizing the fluids shown below:

0-400': Gel/Lime "spud mud" 8.6-9.0 PPG. Utilize native solids to maintain sufficient viscosity to clean hole. Mix paper as required to control seepage loss.

400-2000': 8.4 – 8.6 PPG. Circulate thru reserve pit for gravitational solids solids removal. Add paper as required to control seepage loss while maintaining pH at 10.0 – 10.5 using Lime.

2000-5200': 8.4 – 8.6 PPG. Circulate thru reserve pit for gravitational solids solids removal. Add paper as required to control seepage loss while maintaining pH at 10.0 – 10.5 using Lime.

5200-8800': Cut Brine 9.0 – 9.1 PPG. Utilize sweeps for hole cleaning and LCM as needed for seepage.

8800-TD: Cut brine/starch 9.2 – 9.6 ppg. Utilize starch to maintain fluid loss 6 to 10cc range and sufficient mud weights to stabilize shales and minimize any hydrocarbon influx. Utilize sweeps for hole cleaning and LCM as needed for seepage.

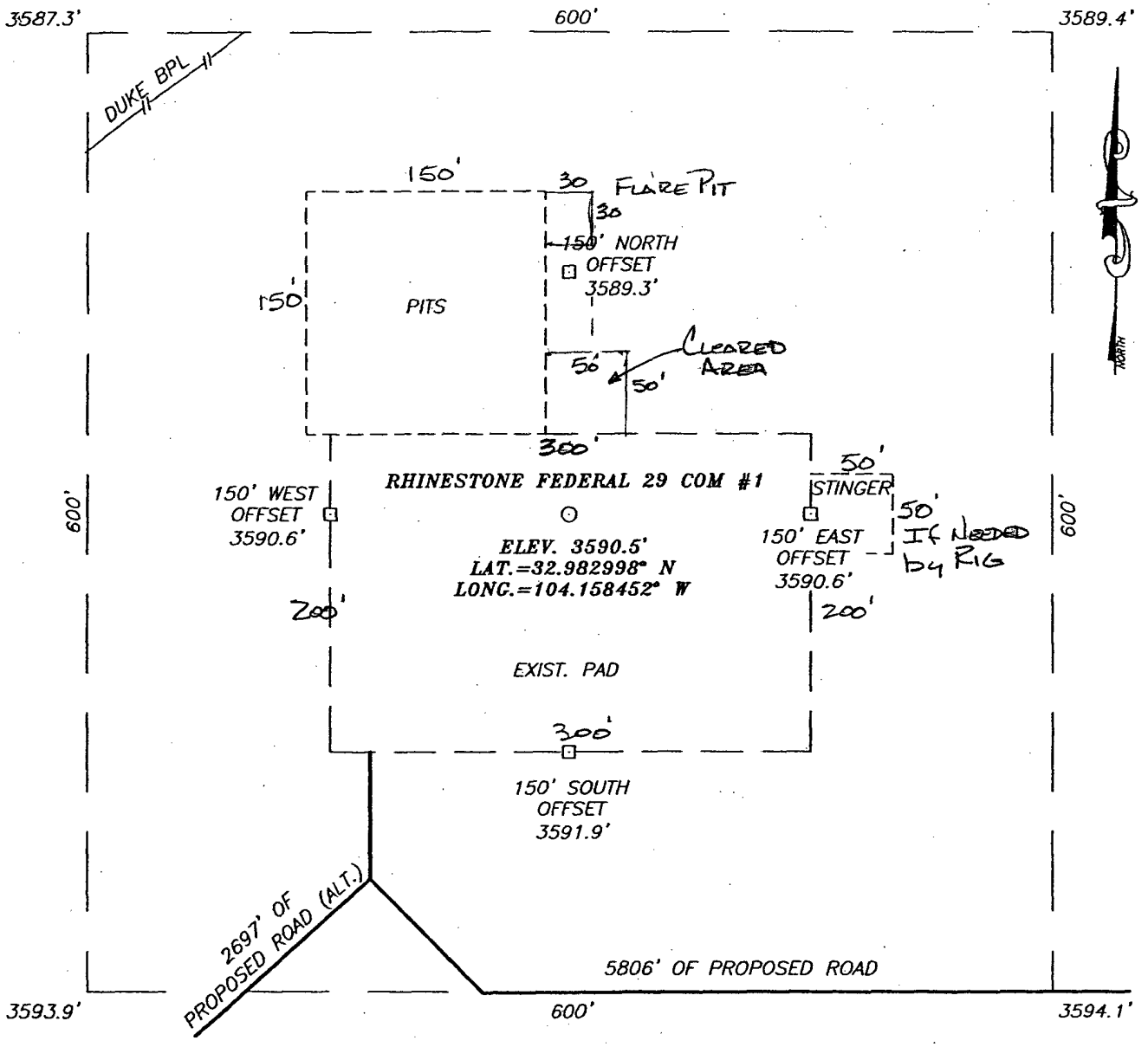
7. Auxiliary equipment will include an upper kelly cock valve, safety valve to fit drill pipe and pressure gauges.

8. No drill stem testing or coring is planned for this wellbore. Mudlogging will commence at 6000' under the current plan. A Schlumberger Platform Express Triple Combo electric log suite or equivalent will be run at TD.

9. The estimated BHP at TD is not expected to exceed 4100 psi, and a BHT of 145 F is anticipated. There is no H2S present in the hydrocarbons being produced in this area. Should such unexpected circumstances be encountered the operator and drilling contractor are prepared to take necessary steps to ensure safety of all personnel, and environment. Lost circulation could occur but is not expected to be a serious problem in this area, and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

10. It is estimated that this well will be drilled and cased in 30 days. Drilling will commence as soon approval is received and services can be contracted.

SECTION 29, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.,
CHAVES COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #217 (HAGERMAN CUTOFF) AND ST. HWY. #31 GO WEST ON ST. HWY. #31 APPROX. 13.5 MILES. TURN LEFT @ HARRIET ROAD AND GO SOUTH APPROX. 3.3 MILES. VEER LEFT AND GO EAST APPROX. 3.0 MILES. VEER RIGHT AND GO SOUTHEAST APPROX. 1.0 MILES. VEER LEFT AND GO SOUTHEAST APPROX. 0.6 MILES. VEER RIGHT AND GO SOUTHEAST APPROX. 0.2 MILES. VEER RIGHT AND GO SOUTHEAST APPROX. 0.2 MILES. VEER RIGHT AND GO SOUTH APPROX. 0.2 MILES. VEER LEFT AND GO SOUTHEAST APPROX. 1.3 MILES. VEER RIGHT AND GO SOUTH APPROX. 1.3 MILES TO A PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY WEST APPROX. 5600 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

RUBICON OIL AND GAS, LLC

RHINESTONE FEDERAL 29 COM #1 WELL
LOCATED 1200 FEET FROM THE SOUTH LINE
AND 1200 FEET FROM THE WEST LINE OF SECTION 29,
TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.,
CHAVES COUNTY, NEW MEXICO.

Survey Date: 10/6/06	Sheet 1 of 1 Sheets		
W.O. Number: 06.11.1607	Dr By: LA		Rev 1:N/A
Date: 10/19/06	Disk: CD#5	06111607	Scale: 1"=100'

Thirteen Point Plan for Surface Use

(Additional data for form 3160-3)

Rubicon Oil & Gas, LLC

Rhinestone Federal 29 Com. #1

Section 29, T-15-S, R-28-E

12000 FSL & 1200 FWL, Unit Ltr M

Field: Diamond Mound Morrow

Chaves County, NM

1. EXISTING ROADS - A "VICINITY MAP" and a "LOCATION VERIFCATION MAP" by John West Surveying are attached which show the location of existing roads and the area topography.

   The road log to the location is as follows:

   a) From intersection of State Hwy 31 and Co. Rd 217, proceed west for 13.5 miles on State Hwy 31.

   b) Turn South on Harriet Road ~3.3 miles, veer left or East ~3.0 miles, veer right or Southeast ~1.0 mile, veer left or Southeast ~ .6 mile, veer right or Southeast ~.4 mile, veer right or South ~.2 mile, veer left or Southeast ~1.3 miles, veer right or South ~1.3 miles to proposed road survey. Follow proposed road survey West ~ 5800' to this location.

2. PLANNED ACCESS ROAD —Upgrade of existing roads as needed to facilitate operations and build approximately 5800' of new E-W access road to location as depicted on John West survey.

3. LOCATION OF EXISTING WELLS - EXHIBIT B shows the location of other wells within a mile radius of the proposed location.

4. LOCATION OF PROPOSED FACILITIES – This production well will be tied into new facilities built on location.

5. LOCATION AND TYPE OF WATER SUPPLY - All water (fresh or otherwise) needed for the drilling and completion of this well will be purchased from a commercial source and trucked to the location via the existing and proposed access road. No water source wells will be drilled, and no surface water will be utilized.

6. SOURCE OF CONSTRUCTION MATERIALS - Construction material (caliche) required for the preparation of the drill site and road will be obtained from an existing BLM approved pit. It is not anticipated that a significant amount of material will be required as the terrain is relatively flat. Transportation will be over the existing roads.

7. METHODS FOR HANDLING WASTE DISPOSAL -

   • Drill cuttings will be disposed into drilling pits after fluids have evaporated.

   • The drilling pits will be lined with a plastic liner, and buried as per regulatory requirements. The pits will be located on the drill site.

• Receptacles for solid wastes (paper, plastic, etc) will be provided and equipped to prevent scattering by wind, animals, etc. This waste will be hauled to an approved landfill site.

• Any other waste generated by the drilling, completion, testing of this well will be removed from the site within 30 days of the completion of drilling or testing operations.

• A Porta-John will be provided for the crews. This will be properly maintained during the drilling operations and removed upon completion of the well.

8. ANCILLARY FACILITIES - The drilling, completion, and/or testing of this well will require no ancillary facilities.

9. WELLSITE LAYOUT - Attached, as EXHIBITS C & D are plats showing the anticipated orientation of the drilling rig and the pad.

10. PLANS FOR SURFACE RESTORATION - Reclamation of the surface location will be in accordance with the requirements set forth by the BLM. As stated earlier all waste generated by this operation will be disposed of in an approved manner, and the site restored as closely as possible to its pre-operation appearance. Due to the topography of the area no problems are anticipated in achieving this status and no erosion or other detrimental effects are expected as a result of this operation.

11. OTHER INFORMATION - The surface ownership of the drill site and the access routes are under the control/ownership of:

Bureau of Land Management

P. O. Box 1778

Carlsbad, New Mexico 88221-1778

505-234-5972

The BLM representative for this area is Barry Hunt who can be reached at the above number, or 505-361-4078.

The site was archaeologically surveyed in November, 2006. Danny Boone, the registered archeological surveyor, should forward a copy of that report to the BLM.

12. OPERATORS REPRESENTATIVE – Rubicon Oil & Gas, LLC is covered by Statewide Bond No. B 326 446 43, BLM Bond # 2922, Oil & Gas State of NM Blanket Plugging Bond 326 446 41. Rubicon is represented by:

Brett Smith

Rubicon Oil & Gas, LLC

(432) 687-5100

Agent / Operations Manager:

Hal Lee

Cell (432) 664-9040

Office (432) 684-8006

13. OPERATORS CERTIFICATION

I hereby certify that I, Hal Lee -Operations Manager, or persons under my supervision have inspected the proposed drill site and access route and that I am familiar with the conditions that currently exist; that the statements made in the APD package are to the best of my knowledge true and correct; and that the work associated with operations herein will be performed by Rubicon Oil & Gas, LLC and it's contractors and subcontractors in conformity with the terms and conditions of this APD package. I also certify responsibility for the operations conducted on that portion of the leased lands associated with this application with bond coverage being provided under a BLM nationwide bond.

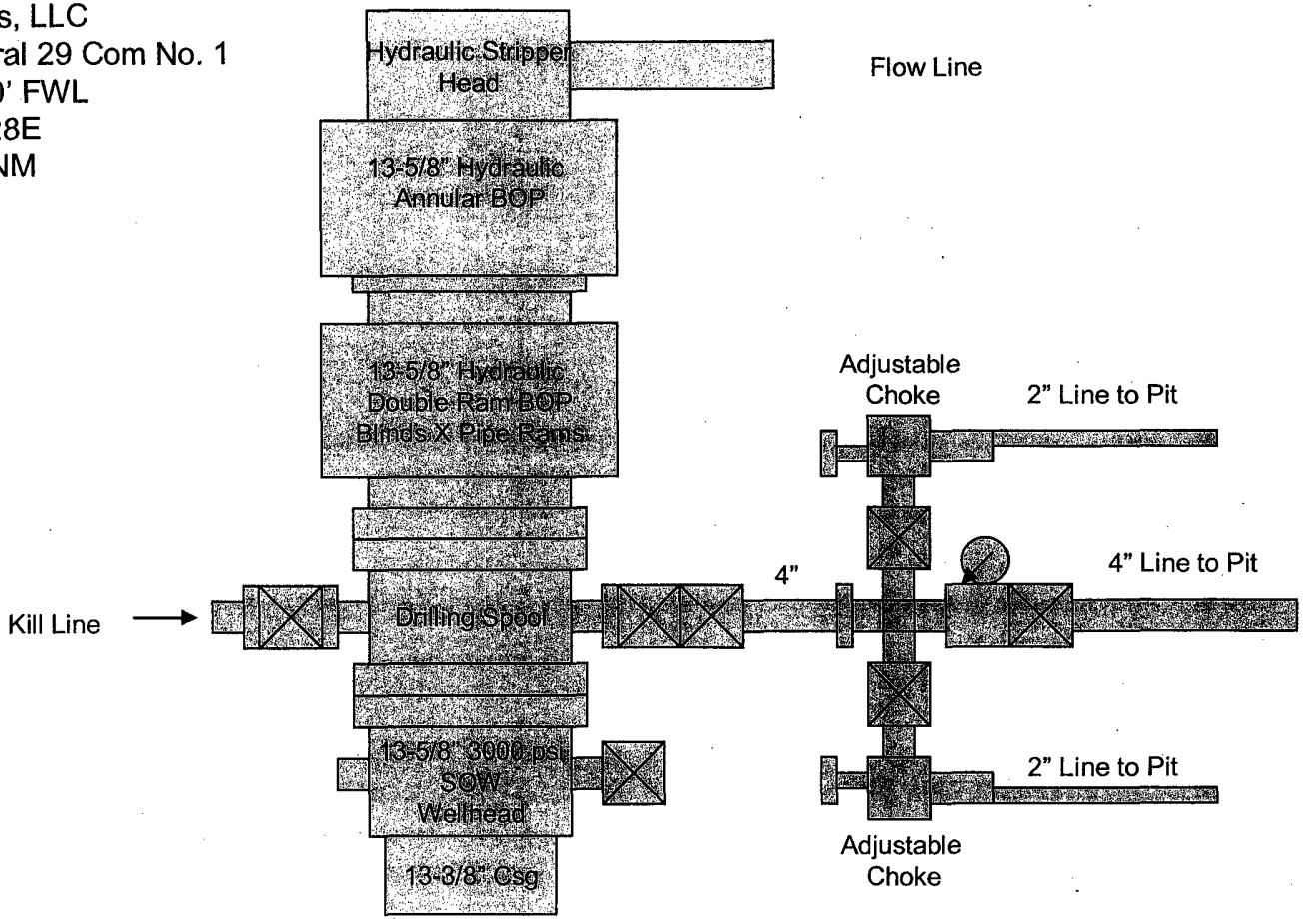
This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Name and title: Hal Lee, Acting Agent and Operations Manager for Rubicon Oil & Gas, LLC

Signature: _____

Date: 2/26/2007

Rubicon Oil & Gas, LLC
Rhinestone Federal 29 Com No. 1
1200' FSL & 1200' FWL
Sec 29, T15S, R28E
Chaves County, NM



3000 psi Working Pressure
BOPE Configuration
And Choke Manifold

Exhibit "___"

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 X
Type of action: Registration of a pit or below-grade tank X Closure of a pit or below-grade tank ☐

Operator: **Rubicon Oil and Gas LLC** Telephone: **432-687-5100** e-mail address: **hlee@adventurexpl.com**
Address: **508 West Wall, Suite 500, Midland, Texas 79701**
Facility or well name: **Rhinestone Federal 29 Com #1** API #: 30-005-63936 U/L or Qtr/Qtr Unit **M** Sec **29** T **15 S** R **28 E**
County: **Eddy** Latitude **32° 58'58.79" N** Longitude **104° 9' 30.43" W** NAD: 1927 X 1983 ☐
Surface Owner: Federal ☐ State ☒ Private ☐ Indian ☐

Pit
Type: Drilling X Production ☐ Disposal ☐
Workover ☐ Emergency ☐
Lined X Unlined ☐
Liner type: Synthetic X Thickness **12** mil Clay ☐
Pit Volume **25,000** bbl

Below-grade tank
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.) 65'	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) **10** (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** (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** (0 points)
	Ranking Score (Total Points)	**10**

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 X 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:

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 X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Date: 2/26/2007
Printed Name/Title HALLEE AGENT/OPSMGR Signature HALLEE

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 Jim W. Gum District II Supervisor Signature _____ Date: 5/11/07

III. WELL SUBSURFACE REQUIREMENTS:

A. GENERAL DRILLING REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second Street, Roswell, NM 88201, (505) 627-0272 for wells in Chaves County in sufficient time for a representative to witness:
A. Well spud B. Cementing casing: **13-3/8** inch **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.

5. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

B. CASING:

1. The **13-3/8** inch surface casing shall be set at **approximately 390 feet, just above the top of the Yates formation,** 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.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is **be circulated to the surface**.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is **to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval**.

C. 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 **13-3/8** 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.

3. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be **3000** psi.

4. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- 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.

D. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- Recording pit level indicator to indicate volume gains and losses.
- Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- Flow-sensor on the flow-line to warn of abnormal mud returns from the well.