ATS-08-473
EA-08-1018

Form 3160-3
(August 2007)

OCD-ARTESIA

JUL 21 2008

OCD-ARTESIA

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No. NMNM-89879

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. Mesquite 3 Federal # 4

2. Name of Operator NADEL AND GUSSMAN HEYCO, LLC 258462

9. API Well No. 30-015-36439

3a. Address P.O. BOX 1936 ROSWELL N.M 88202

3b. Phone No. *(include area code)* (575) 623-6601

10. Field and Pool, or Exploratory Shugart; Bone Spring North

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

At surface 330' FSL & 330' FWL

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area SEC 3, T18S, R31E

14. Distance in miles and direction from nearest town or post office* 10 MILES SOUTH EAST OF LOCO HILLS N.M.

12. County or Parish EDDY

13 State N.

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg. unit line, if any) 330"

16. No. of acres in lease 320.23

17. Spacing Unit dedicated to this well 40 Acre

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1050'

19. Proposed Depth ~~9100'~~ 9075' per drilling plan

20 BLM/BIA Bond No. on file ~~B004230~~ NMB000520 5-16-08 am

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3730.6'

22. Approximate date work will start* 07/15/2008

23. Estimated duration 40 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 [signature] Name *(Printed Typed)* Keith Cannon Date 05/15/2008

Title Drilling superintendent

Approved by *(Signature)* /s/ Don Peterson Name *(Printed/Typed)* /s/ Don Peterson Date JUL 16 2008

Title 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 TWO YEARS

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)

**CAPITAN CONTROLLED WATER BASIN**

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT**
**Roswell Resource Area**
**P.O. Drawer 1857**
**Roswell, New Mexico 88202-1857**

**Statement Accepting Responsibilities for Operations**

**Operator Name:** Nadel and Gussman Heyco, LLC
**Street or Box:** P.O. Box 1936
**City, State:** Roswell, New Mexico
**Zip Code:** 88202

**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.:**

**Lease Name: Mesquite 3 Federal #4**
**Legal description of land: Sec 3, T18S, R31E, 330' FSL & 330' FWL**
**Eddy County, New Mexico**

**Formation(s) (if applicable): Bone Spring 3rd Sand**

**Bond Coverage: Statewide Bond**

**BLM Bond File No.:** ~~B004230~~ NMB000520

**Authorized Signature:**

**Title: Drilling Superintendent**

**Date: 5/15/08**

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 |
|---|---|---|
| | 56405 | SHUGART; BONE SPRING NORTH |

| Property Code | Property Name | Well Number |
|---|---|---|
| ~~12965~~ 305045 | MESQUITE 3 FEDERAL | 4 |

| OGRID No | Operator Name | Elevation |
|---|---|---|
| 258462 | NADEL AND GUSSMAN HEYCO, LLC | 3728' |

Surface Location

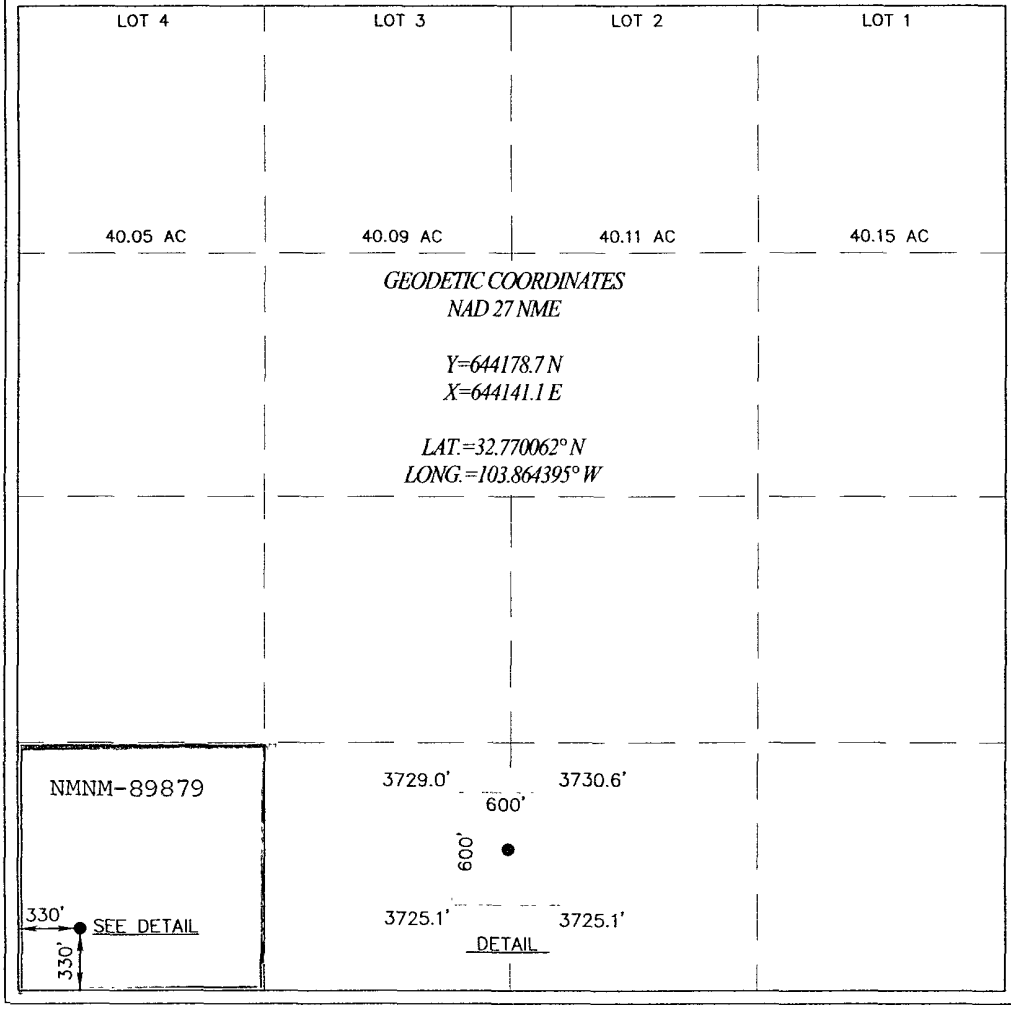
| UL or lot No | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 3 | 18–S | 31–E | | 330 | SOUTH | 330 | WEST | EDDY |

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

Signature 5-15-08 Date

Keith Cannon
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.

Date Surveyed APRIL 2 E-2008 DSS

Signature & Seal of Professional Surveyor

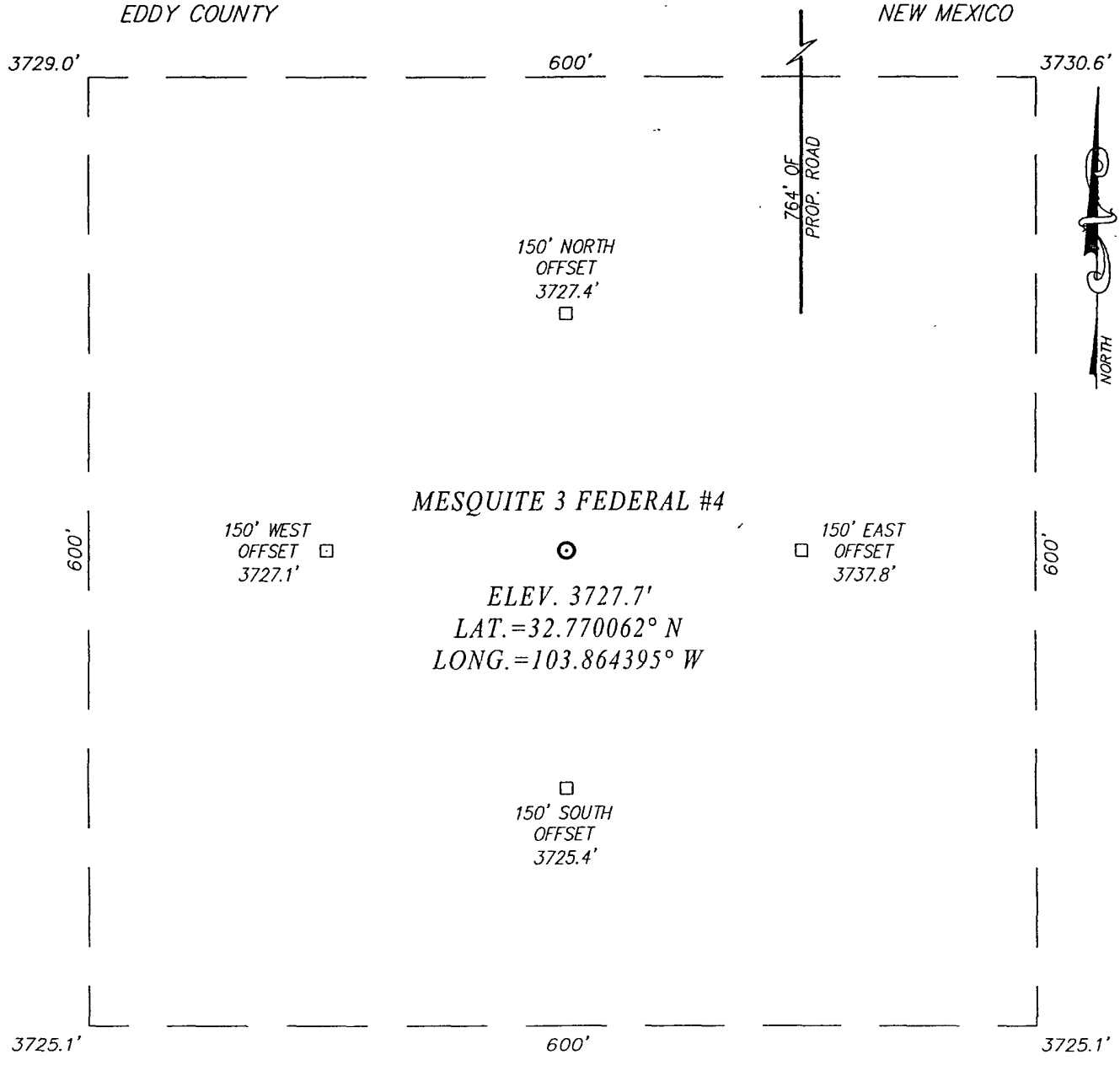
NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

08-11-0495

Certificate No Gary G Eidson 12641
Ronald J Eidson 3239

# SECTION 3, TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO




DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HIGHWAY 82 AND COUNTY ROAD #222 (SHUGART ROAD), GO SOUTH ON SHUGART ROAD APPROX. 3.2 MILES. TURN LEFT AND GO NORTHEAST THEN EAST APPROX. 1.2 MILES. TURN RIGHT AT PROPOSED ROAD SURVEY AND GO SOUTH APPROX. 764 FEET TO THIS LOCATION.

100 0 100 200 Feet

Scale: 1"=100'

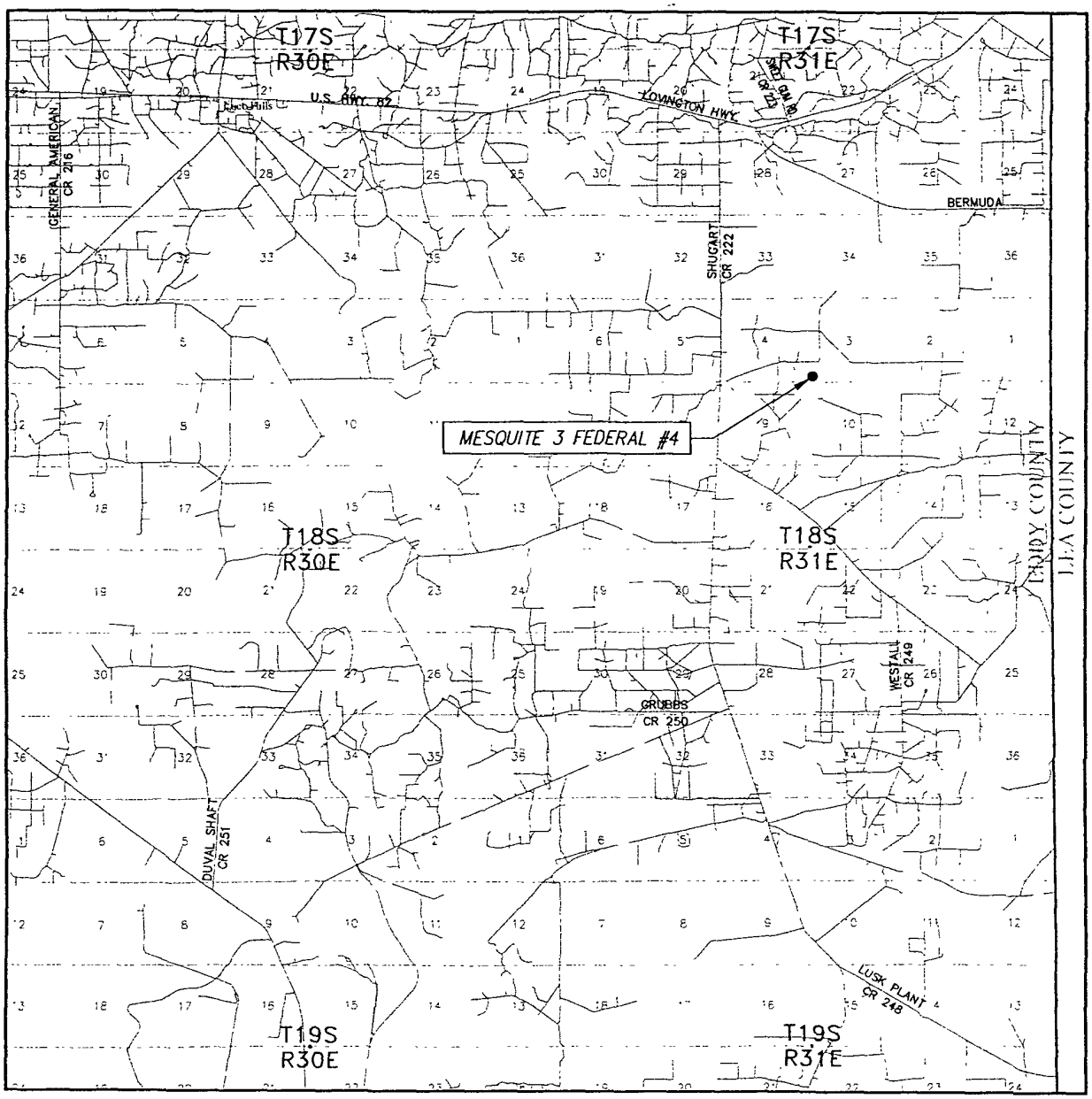

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117


## NADEL AND GUSSMAN HEYCO, LLC

MESQUITE 3 FEDERAL #4 WELL
LOCATED 330 FEET FROM THE SOUTH LINE
AND 330 FEET FROM THE WEST LINE OF SECTION 3,
TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

| | | | |
|---|---|---|---|
| Survey Date: 4/21/08 | Sheet 1 of 1 Sheets | | |
| W.O. Number: 08.11.0495 | Dr By: DSS | Rev 1: | |
| Date: 4/25/08 | | 08110495 | Scale: 1"=100' |

# VICINITY MAP




SCALE: 1" = 2 MILES

SEC. 3 TWP. 18-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FSL & 330' FWL

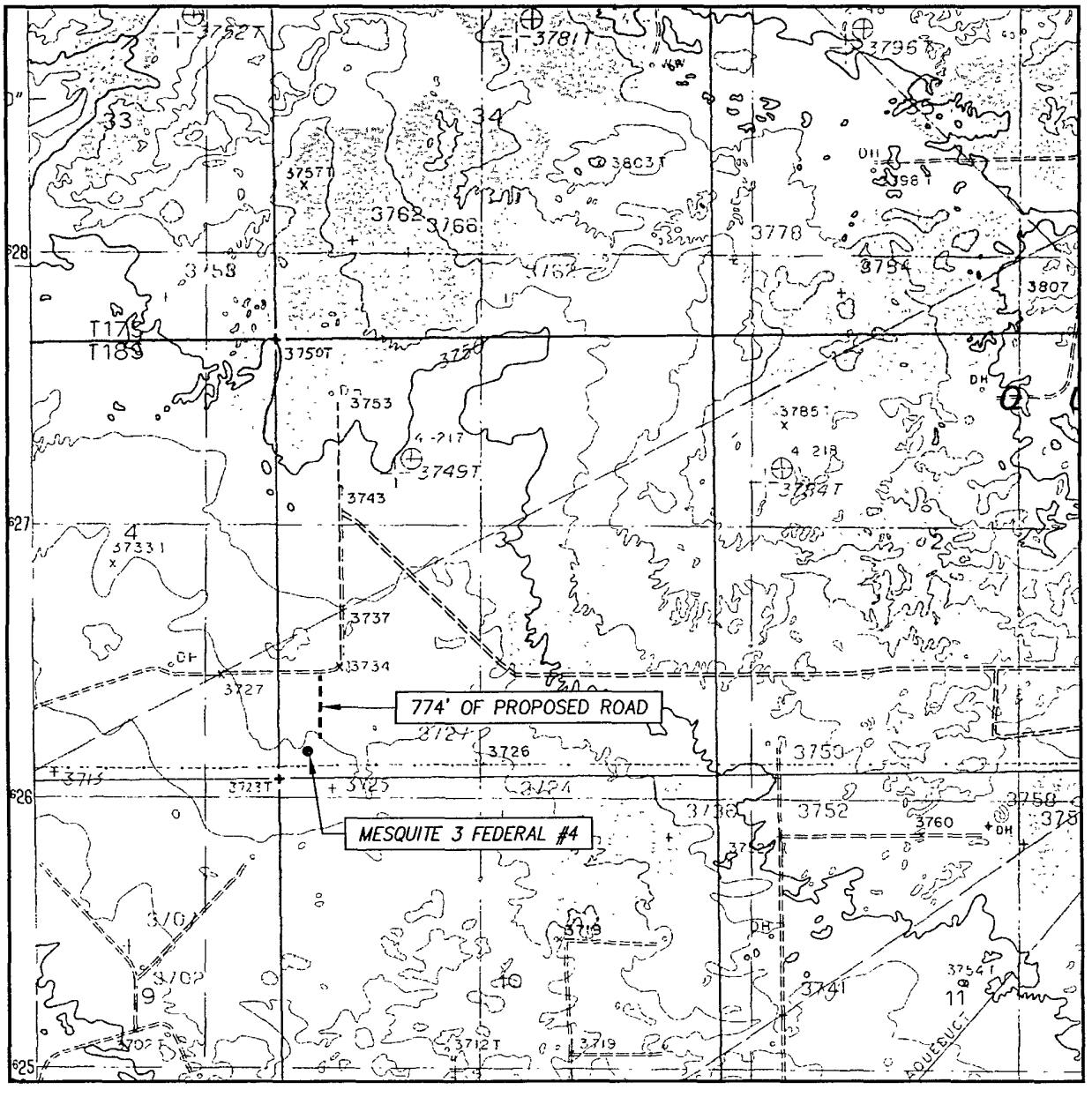
ELEVATION 3728'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

LEASE MESQUITE 3 FEDERAL


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

# LOCATION VERIFICATION MAP




SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALJAMAR, N.M. – 10'

SEC. 3 TWP. 18–S RGE. 31–E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FSL & 330' FWL

ELEVATION 3728'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

LEASE MESQUITE 3 FEDERAL

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

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

**Application**
**Nadel and Gussman Heyco, LLC**
**Mesquite 3 Federal #4**
**Sec 3, T18S, R31E**
**330' FSL & 330' FWL**
**Eddy County, New Mexico**

**In conjunction with Form 3160-3, Application For Permit To Drill Or Deepen subject well, Nadel and Gussman Heyco, LLC submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 10.**

1. **Geologic Name of Surface Formation:**
   **PERMIAN**

2. **Estimated Tops of Significant Geologic Markers:**

| Formation | Depth | |
|---|---|---|
| Rustler | 925' | Water |
| Salado | 1065' | |
| BX (BASE OF SALT) | 2230' | |
| Yates | 2425' | |
| Seven Rivers | 2820' | Oil |
| Bowers | 3275' | Oil |
| Queen | 3530' | Oil |
| Penrose | 3775' | Oil |
| Grayburg | 4045' | Oil |
| Loco Hills | 4145' | Oil |
| Metex | 4260' | Oil |
| Premier | 4390' | Oil |
| San Andres | 4530' | Oil |
| Delaware-Cherry Canyon | 4850' | Oil |
| Brushy Canyon | 5150' | Oil |
| L. San Andres Equiv. | 5730' | Oil |
| Bone Spring Ls | 6250" | Oil |
| A-Zone Carb | 7370' | Oil |
| BSPG 1st Sand | 7610' | Oil |
| B-Zone | 7840' | Oil |
| BSPG 2nd Sand | 8275' | Oil |
| C-zone | 8605' | Oil |
| C- Zone Carb | 8775' | Oil |
| BSPG 3rd Sand | 8980' | Oil |
| PTD | 9100' | |

No other formations are expected to yield oil, gas, or fresh water in measurable volumes. See COA
The surface fresh water sands will be protected by setting 13 3/8" casing at ~~450'~~ and circulating Cement back to surface. Potash/ fresh water sands will be protected by setting 9 5/8" casing at 3000' and circulating cement back to surface. ~~Morrow~~ intervals will be isolation by setting 5 ½" Casing to total depth and circulating cement up into the 9 5/8" casing.

3. **Proposed Casing Program:** Bone Spring

| Hole size | Depth | OD Csg | Weight | Collar | Grade | New/Used |
|---|---|---|---|---|---|---|
| 17 ½" | 0' – ~~715'~~ 830 | 13 3/8" | 48# | ST&C | H-40 | NEW |
| 12 ¼" | 0' – ~~2700'~~ 2030 | 9 5/8" | 36# | ST&C | J-55 | NEW |
| 8 ¾" | 0' – 4600' | 5 ½" | 17# | LT&C | L-80 | NEW |
| 8 ¾" | 4600' – 7600' | 5 ½" | 17# | LT&C | J-55 | NEW |
| 8 ¾" | 7600' – 9075' | 5 ½" | 17# | LT&C | L-80 | NEW |

See COA

**Safety Factors: Burst 1.0 Collapse 1.125 Tension 1.8**

4. **Cement Program: ( Note yields; and DV tool depths if multiple stages )**

   a. **13 3/8" Surface Cement to surface with:**

Lead - 385 sx 35:65 Poz C, 3% CaCl, 0.125 pps Celloflake and 6% Bentonite, 12.7 ppg, 1.94 cu.ft./sk yield, TOC @ surface.
Tail – 200 sx C, 2% CaCl and 0.125 pps Celloflake, 14.8 ppg, 1.34 cu.ft./sk yield, TOC @ 550'.

b. 9 5/8" Intermediate Cement to surface with:
Lead - 360 sx 50:50 Poz C, 5% Salt, 0.125 pps Celloflake, 10% Bentonite and 0.2% AntiFoamer, 11.9 ppg, 2.46 cu.ft./sk yield, TOC @ surface.
Tail – 200 sx C and 1% CaCl, 14.8 ppg, 1.33 cu.ft./sk yield, TOC @ 2130'.

c. 5 1/2" Production First Stage:
Lead - 565 sx 35:65 Poz H, 5% Salt, 6% Bentonite, 0.2% Uniflac, 0.2% TIC Dispersant and 0.3% Retarder, 12.7 ppg, 1.99 cu.ft./sk yield, TOC @ 5475'.
Tail – 780 sx TXI Lightweight, 1.33% Salt, 0.2% AntiFoamer, 0.3%, Uniflac, 0.2% TIC Dispersant and 0.55% Retarder, 13.0 ppg, 1.41 cu.ft./sk yield, TOC @ 2500'.

The above volumes, additives and depths may be revised based on open hole logs, conditions encountered while drilling and on cement field blend tests. The top of cement for the production string is designed to reach approximately 200' above the 9 5/8" casing shoe.

5. Pressure Control Equipment:

The blowout preventor equipment (BOPE) shown in Exhibit #1 will consist of a (3m system) Double ram type (3000psi WP) preventor and a bag type (hydril) preventor (3000psi WP) and rotating head. Both unit will be hydraulically operated and the ram type preventor will be equipped with blind rams on top 4 ½" drill pipe rams on bottom. The drilling head will be installed on the 13 3/8" surface casing and ntilized continuously unit depth is reached. All BOP's and associated equipment will be tested to 1200psi with the rig pump before drilling Out the 13 3/8" casing shoe (70% of 54.4# J-55 casing). Prior to drilling out the 9 5/8" shoe, the The BOP's and Hydrill will be tested as per BLM Drilling Operations Order #2. Pipe rams will be Operated and checked each 24hr period and each time drill pipe is out of the hole. These functional Test will be documented on the daily driller log. A 2" kill line and 3" choke line will be incorporated In the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly Cock, floor safety valve, choke line and choke manifold having a 3000psi wp rating.

6. Drilling Fluid Program:

| Depth | Mud Wt. | Visc | Fluid Loss | Type System |
|---|---|---|---|---|
| 0' – 950' | 8.4 - 8.8 | 80 - 55 | NC | Fresh Water |
| 950' – 3000' | 9.8 - 10.0 | 28 - 30 | NC | Brine Water |
| 3000' – 7500' | 8.8 - 9.4 | 28 - 32 | NC | Cut Brine Water |
| 7500' – 9100' | 8.8 - 10.0 | 34 - 36 | 6-10 | Cut Brine Water |

The necessary mud products for weight addition and fluid loss control will be on Location at all times. Mud Program Sudject to change due to hole conditions.

7. Auxiliary Equipment:
   a. A Kelly Cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate Connections will be on the rig floor at all times.
   c. Hydrogen Sulfide detection equipment will be in operation after drilling Out the 9 5/8" casing shoe unit the 5 ½" casing is cemented. Breathing Equipment will be on location upon drilling the 9 5/8" shoe unit total Depth is reached.

8. Testing, Logging, & Coring Program:

   a. Mud logging unit from the base intermediate casing to depth 10' samples will be caught by loggers
   b. Possible rotary sidewall cores

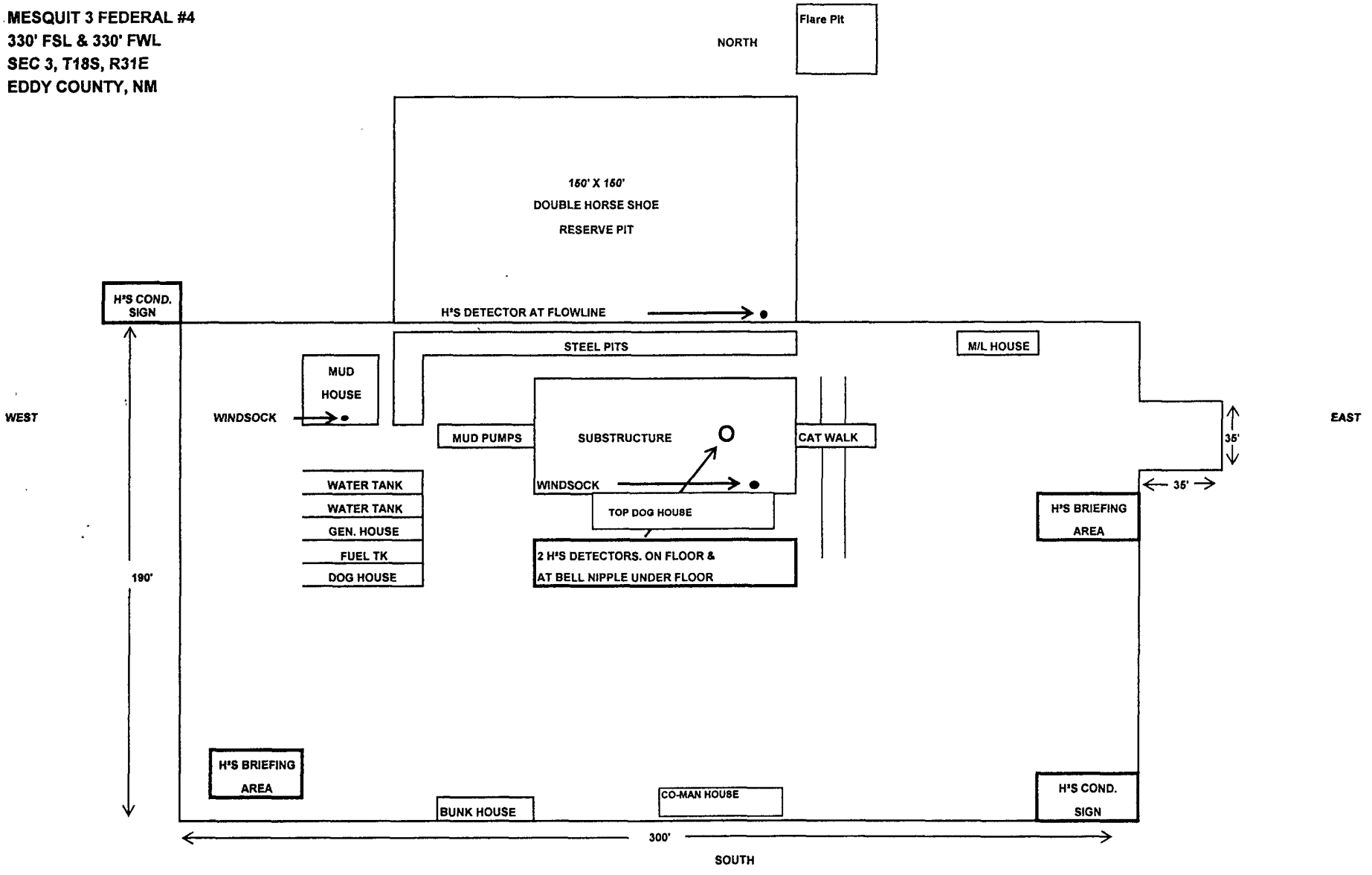
c. Drill stem test will be based on geological sample shows
Wolfcamp and Strawn.
e. Platform express ( GR / LDT – CNL – PE / DLL – MCFL / NGT)

9. Abnormal Conditions, Pressures, Temperature, or Potential Hazards:
No abnormal conditions are expected. There is no known presence of H2S in this area.
If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No 6. Lost circulation might occur in the Capitan Reef. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
Estimated BHP 4700 psi and estimated BHT 180. No H2S is anticipated to be encountered.

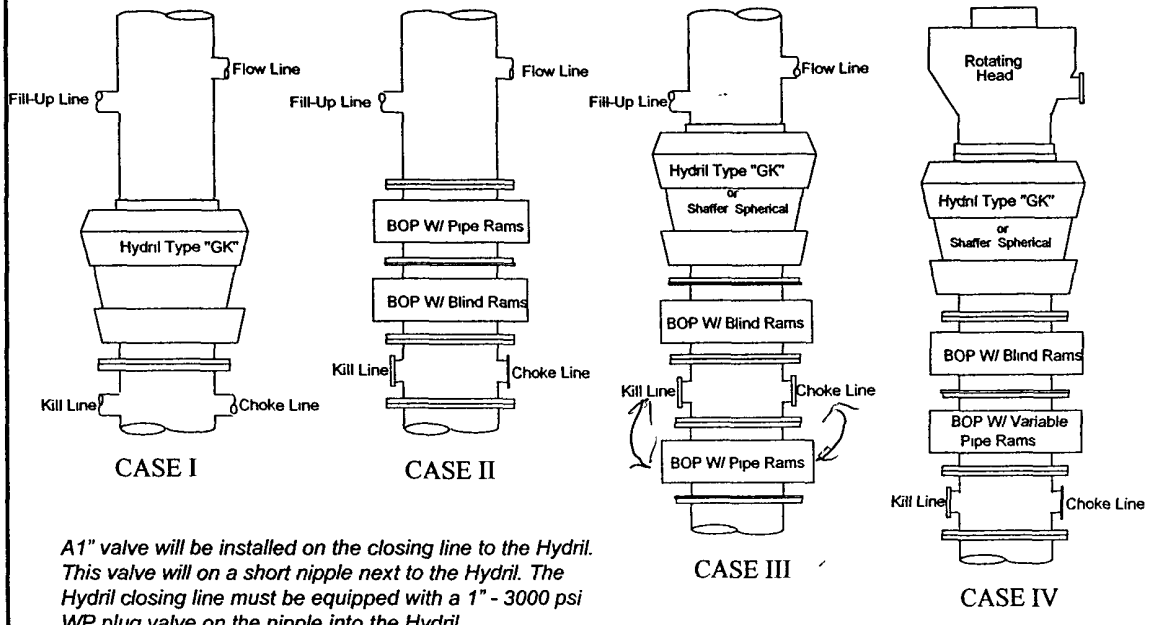
9. Anticipated Starting Date & Duration of Operation:
The anticipated starting date is set for as soon as possible after examination and approval of all drilling requirements.
Duration of this project will be approximately 50 days from start of
Construction of drilling pad until finish of completion operations

**EXHIBIT "D" LOCATION DIAGRAM**

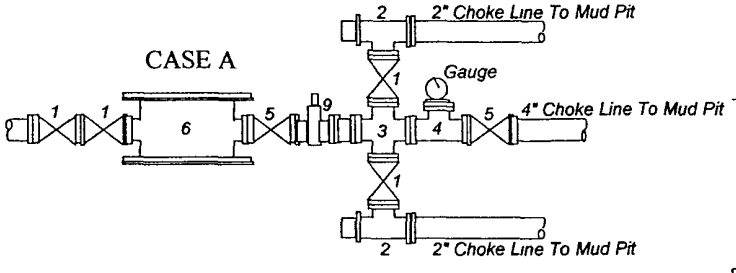
**MESQUIT 3 FEDERAL #4**
**330' FSL & 330' FWL**
**SEC 3, T18S, R31E**
**EDDY COUNTY, NM**



# Nadel and Gussman Heyco, LLC
## MINIMUM BLOWOUT PREVENTER REQUIREMENTS

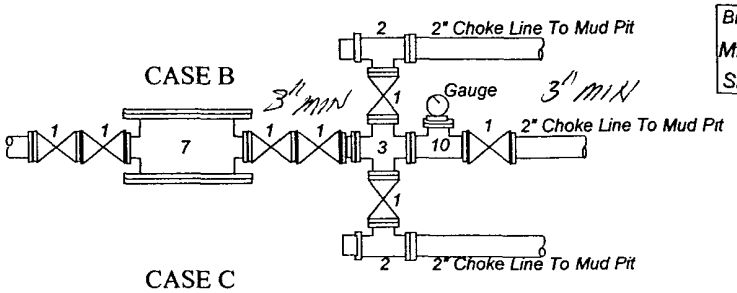



*A1" valve will be installed on the closing line to the Hydril. This valve will on a short nipple next to the Hydril. The Hydril closing line must be equipped with a 1" - 3000 psi WP plug valve on the nipple into the Hydril.*

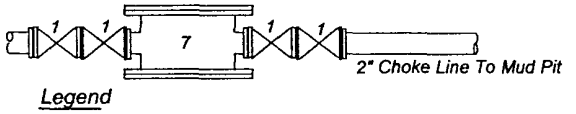



| BOP SIZE | BOP CASE | WORKING PRESSURE | CHOKE CASE |
|---|---|---|---|
| 13-5/8" | III | 3000 psi | B |
| | | | |

**Rotating head required*




Bradenhead :
Mfr: _____
Size: _____ Type: _____




*Legend*

1. *2" flanged all steel valve must be either Cameron "F", Halliburton Low Torque or Shaffer Flo-Seal.*
2. *2" flanged adjustable chokes, min. 1" full opening & equiped with hard trim.*
3. *4" x 2" flanged steel cross.*
4. *4" flanged steel tee.*
5. *4" flanged all steel valve (Type as in no. 1).*
6. *Drilling Spool with 2" x 4" flanged outlet.*
7. *Drilling Spool with 2" x 2" flanged outlet.*
8. *2" x 2" flanged steel cross.*
9. *4" pressure operated gate valve.*
10. *2" flanged steel tee.*

*Notes*

*Choke manifold may be located in any convenient position. Use all steel fittings throughout. Make 90° turns with bull plugged tees only. No field welding will be permitted on any of the components of the choke manifold and related equipment upstream of the chokes. The choke spool and all lines and fittings must be at least equivalent to the test pressure of the preventers required. Independent closing control unit with clearly marked controls to be located on derrick floor near driller's position.*

*(10-31-96) WTXBOPS PPT*

**NADEL AND GUSSMAN HEYCO, L.L.C.**
**P.O. BOX 1936**
**ROSWELL N.M. 88202**
**(575) 623-6601 (Office)**
**(575) 624-5321 (Fax)**

**Re: Mesquite 3 Federal #4**
**330' FSL & 330' FWL**
**Unit Letter M, Sec. 3, T18S, R31E**
**Eddy, NM**
**Rule 118 H2S Exposure**

Dear Mr. Amos,

Nadel and Gussman Heyco have evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to drilling out the intermediate casing and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,

Keith Cannon
Drilling Superintendent
5/15/08

**Hydrogen Sulfide Drilling Operations Plan**

1. Company and Contract personnel admitted on location should be trained by a qualified $H_2S$ safety instructor to the following:
   A. Characteristics of $H_2S$.
   B. Physical Effects and Hazards.
   C. Proper Use of Safety Equipment and Life Support Systems.
   D. Principle and Operation of $H_2S$ Detectors, Warning System and Briefing.
   E. Evacuation Procedure, Routes and First Aid.
   F. Proper Use of 30 minute Pressure Demand Air Pack.

2. $H_2S$ Detection and Alarm Systems
   A. $H_2S$ Detectors and Audio Alarm System to be Located at Bell Nipple, End of Blooie Line (mud pit) and on Derrick floor or doghouse.

3. Windsock and/or Wind Streamers
   A. Windsock at Mud Pit Area Should be High Enough to be Visible.
   B. Windsock at Briefing Area Should be High Enough to be Visible.
   C. There Should be a Windsock at Entrance to Location.

4. Condition Flags and Signs
   A. Warning Sign on Access Road to Location.
   B. Flags to be Displayed on Sign at Entrance to Location.
      1. Green Flag, Normal Safe Condition.
      2. Yellow Flag, Indicates Potential Pressure and Danger.
      3. Red Flag, Danger $H_2S$ Present in Dangerous Concentration Only Emergency Personnel Admitted to Location.

5. Well Control Equipment
   A. See Attached Diagram.

6. Communication
   A. While Working Under Masks Chalkboards Will be Used for Communication.
   B. Hand Signals will be Used Where Chalk Board is Inappropriate.
   C. Two Way Radio or Cell Phone will be Used to Communicate off Location in Case of Available at Most Drilling Foreman's Trailer or Living Quarters.

7. Drillstem Testing
   A. Exhausts will be Watered.
   B. Flare Line will be Equipped with an Electric Igniter or a propane pilot light in case gas reaches the surface.
   C. If Location is near any Dwelling a Closed DST will be Performed.

8. Drilling Contractor Supervisor will be Required to be Familiar with the Effects $H_2S$ has on tubular goods and other mechanical equipment.

9. If $H_2S$ Encountered, Mud system will be Altered if Necessary to Maintain Control of Formation. A Mud Gas Separator will be Brought into Service Along with $H_2S$ Scavengers if Necessary.

## CONTACTING AUTHORITIES

Nadel and Gussman HEYCO personnel must liason with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as; type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

| LOCATION | ENTITY | PHONE NUMBER: |
|---|---|---|
| Artesia | Sheriff's Office | (575) 746-9888 |
| Artesia | State Police | (575) 748-9718 |
| Carlsbad | Bureau of land Management | (575) 887-6544 |
| | Ambulance | 911 |
| Loco Hills | Fire Department | (505) 677-2349 |
| Artesia | Fire Department | (505) 746-2701 |
| Carlsbad | Local Emergency Planning Committee | (505) 887-3798 |
| Roswell | Nadel and Gussman HEYCO, LLC | Off. (505) 623-6601 |
| Midland Tx | Terry West, Drilling Engineer. | Cell (432) 682-1472 |
| Artesia | Keith Cannon, Drlg Superintendent | Cell (575) 626-1936 |
| Artesia | Clay Stevens, Safety Man | Cell (575) 626-1965 |
| OTHER CONTACTS | | |
| Artesia | Schlumberger Technology | (575) 748-1392 |
| Artesia | South Environmental | (575) 420-1942 |
| Hobbs | Horizon Mud | (575) 393-8641 |
| Lovington | Assurance Fire Safety | (575) 396-7004 |
| Odessa, TX | Wild Well Control, Inc. | (432) 550-6202 |
| Odessa, TX | Cudd Pressure Control, Inc. | (432) 563-3356 |
| Lubbock, TX | Flight for Life | (806) 743-9911 |
| Albuquerque, NM | Med Flight Air Ambulance | (505) 842-4433 |

**Surface Use Plan**
Nadel and Gussman Heyco. LLc
Mesquite 3 Federal #4
Section 3, T18S, R31E
330' FSL & 330' FWL
Eddy County, New Mexico

1. **Existing Roads:**
Exhibit A is a portion of a New Mexico map showing the location of the proposed location. The location is approximately 10 miles South East of Loco Hills, NM. Leave Loco Hills on US 82 & travel East 5 miles & turn South on Co Rd.222 Go 3.2 mile & turn left on Caliche road. Go 1.2 miles Turn right and go 0.2 miles to location.

2. **Planned Access Roads:**
0.2 Miles new road will be built to access this location come in from the North.

3. **Location of Existing Wells:**
See EXHIBIT B From the surveying company / vicinity map

4. **Location of Tank Batteries, Electric Lines, Etc:**
In the event a producing well is drilled, a tank battery will be built on the location.

5. **Location and Type of Water Supply:**
Water will be obtained from commercial sources.

6. **Source of Construction Material:**
We will use materials from reserve pit or a state, BLM approved pits to build the location.

7. **Methods of Handling Waste Disposal:**
Waste will be handled in an approved manner. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

8. **Ancillary Facilities:**
N/A

9. **Wellsite Layout:**
a. EXHIBIT D shows the relative location and dimensions of the well pad, reserve pits, and major rig components.

b. The land is relatively flat with sandy soil

c. The pad and pit area have been staked.

10. **Plan for Restoration of the Surface:**
a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. Pits will be deep buried and the location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.

b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible. All pits will be filled and leveled within 90 days after abandonment.

11. **Other Information:**

a. The mineral and surface owner is the Federal Government, Land and Grazing leasing had been contacted.

b. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

c. There are no ponds, lakes, or rivers in this area.

d. An Archaeological Survey has been made and a copy has been sent to the Carlsbad BLM office. There is no evidence of any significant archaeological, historical, or cultural sites in the area. Further, there are no occupied dwellings or windmills in the area.

e. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids.

Keith Cannon, Drilling Superintendent
Nadel and Gussman Heyco, LLC
P.O. Box 1936
Roswell, NM
505-623-6601

May 15, 2008

**Operator's Certification:**
I 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; that the work associated with operations proposed herein will be performed by Nadel and Gussman Heyco, LLC and its 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 18 U.S.C. 1001 for the filing of a false statement.

Keith Cannon, Drilling Superintendent
Nadel and Gussman Heyco, LLC
P.O. Box 1936
Roswell, NM
505-623-6601

May 15, 2008

# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | Nadel & Gussman Heyco LLC |
| LEASE NO.: | NM-89879 |
| WELL NAME & NO.: | 4-Mesquite 3 Federal |
| SURFACE HOLE FOOTAGE: | 330' FSL & 330' FWL |
| BOTTOM HOLE FOOTAGE | ' F L & ' F L |
| LOCATION: | Section 3, T. 18 S., R 31 E., NMPM |
| COUNTY: | Eddy County, New Mexico |

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

**Mitigation Measures:** The mitigation measures include the Pecos District Conditions of Approval, the standard stipulations for the Lesser Prairie Chicken, the standard stipulation for permanent resource roads.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

**Mesquite 3 Federal # 4:** Reserve pits North V-Door East

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

## C. RESERVE PITS

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

**The reserve pit shall be constructed 150' X 150' on the North side of the well pad V-Door East**

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

## D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## F. ON LEASE ACCESS ROADS

**Road Width**
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

**Surfacing**
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

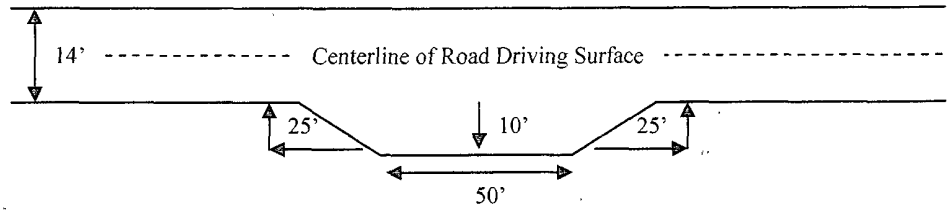
**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

**Standard Turnout – Plan View**

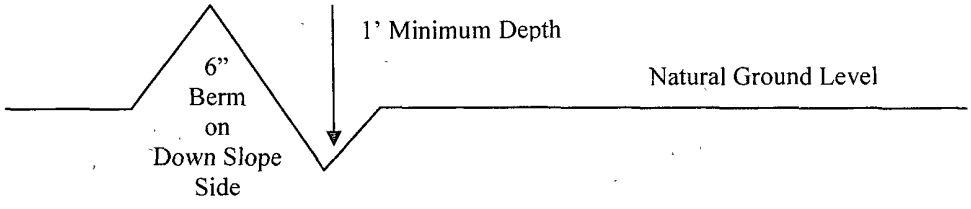



**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**




All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

**Culvert Installations**
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

**Cattleguards**
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

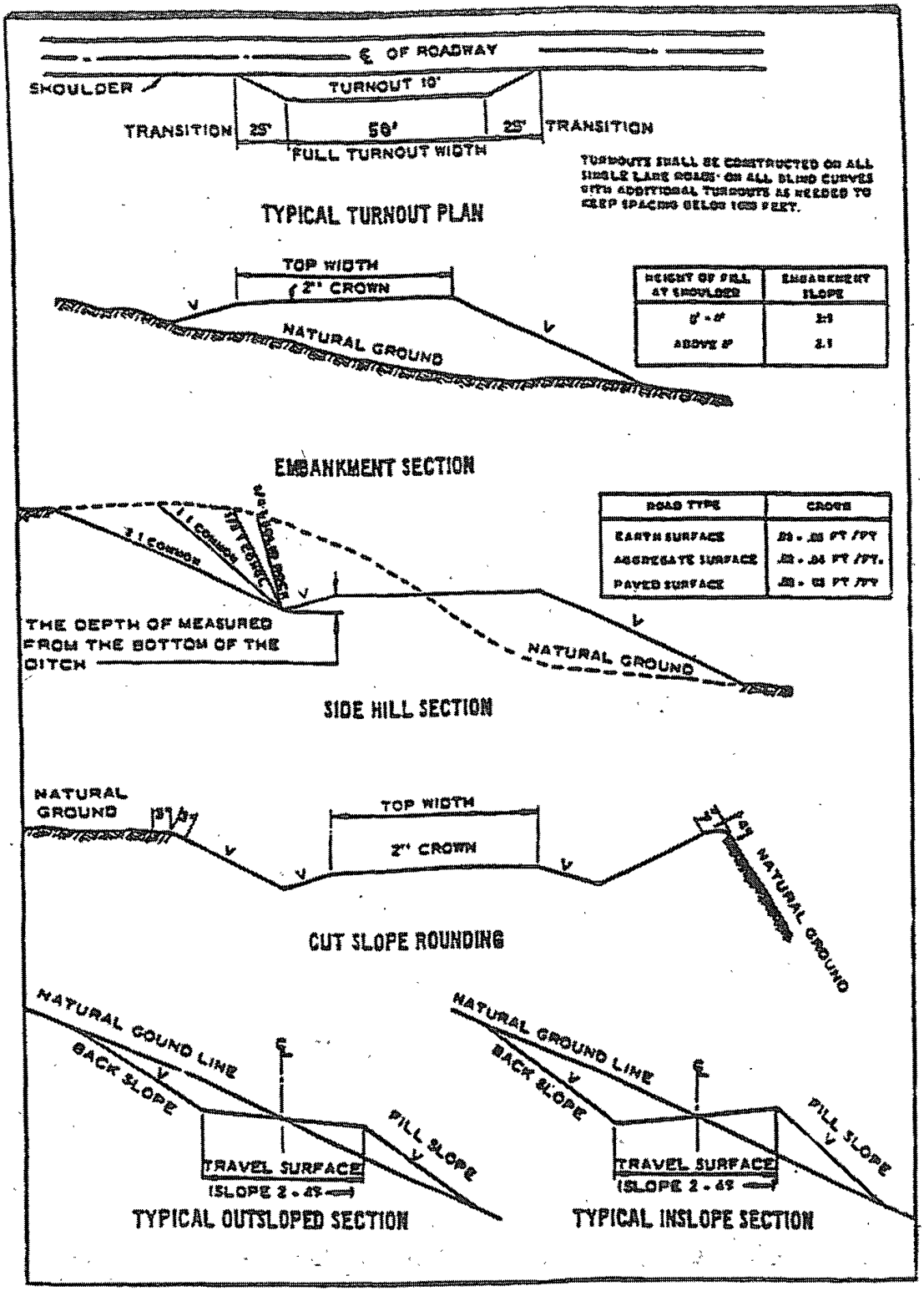
A gate shall be constructed and fastened securely to H-braces.

**Fence Requirement**
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

# Figure 1 – Cross Sections and Plans For Typical Road Sections



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Queen** formation. **If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Possible lost circulation in the Grayburg and San Andres formations.**
**Possible water flows in the Salado group and the Premier member of the Grayburg formation.**

1. The **13-3/8** inch surface casing shall be set **at approximately 830 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a-d above.
    **This casing is to be set in the Tansill formation at approximately 2030' in order to separate the salt from the hydrocarbon bearing formations and because it is a more competent formation than the Yates.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required due to change in setting depth for intermediate casing.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

## C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. The tests shall be done by an independent service company.

    b. The results of the test shall be reported to the appropriate BLM office.

    c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

    d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

    e. A variance to test the surface casing and BOP/BOPE **(entire system)** to the reduced pressure of **1000** psi with the rig pumps is approved.

## D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**WWI 071508**

# VIII. PRODUCTION (POST DRILLING)

## A. WELL STRUCTURES & FACILITIES

**Placement of Production Facilities**
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

**Containment Structures**
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

**Painting Requirement**
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

## B. PIPELINES

## C. ELECTRIC LINES

# IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

## A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

## B. RESERVE PIT CLOSURE

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The see mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

| Species | lb/acre |
|---|---|
| Sand dropseed (Sporobolus cryptandrus) | 1.0 |
| Sand love grass (Eragrostis trichodes) | 1.0 |
| Plains bristlegrass (Setaria macrostachya) | 2.0 |

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

(Insert Seed Mixture Here)

## X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.