COPY RM

ATS-09-323

OCD-ARTESIA
MAY 26 2009

Form 3160-3
(August 2007)

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

EA-09-542

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

| | |
|---|---|
| 5. Lease Serial No. NMNM-106718 | |
| 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. South Taylor 13 Federal # 5 |
| 2 Name of Operator Nadel and Gussman HEYCO, LLC | 9 API Well No. 30-015-37092 |
| 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 E Shugart Delaware 56419 |
| 4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1650' FSL & 1600' FEL At proposed prod zone Same **CAPITAN CONTROLLED WATER BASIN** | 11. Sec, T R M or Blk and Survey or Area Sec 13, 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 NM |
| 15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg. unit line, if any) 1600' / 16. No of acres in lease 600.060 / 17. Spacing Unit dedicated to this well 40 | |
| 18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 940' / 19 Proposed Depth 5500' / 20. BLM/BIA Bond No on file NMB000520 | |
| 21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3732' / 22. Approximate date work will start* 06/28/2009 / 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 | Name (Printed/Typed) Keith Cannon | Date 03/20/2009 |
| Title Drilling Superintendent | | |
| Approved by (Signature) /s/ Don Peterson | Name (Printed/Typed) | Date MAY 19 2009 |
| 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)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Witness Surface Casing

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.

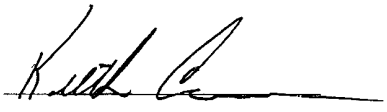
Lease No.: NMNM - 106718

Lease Name: South Taylor 13 Federal #5
Legal description of land: Sec 13, T18S, R31E, Eddy County, New Mexico

Formation(s) (if applicable): Brushy Canyon, Delaware, Metex, Loco Hills, Penrose, Queen

Bond Coverage: Statewide Bond

BLM Bond File No.: NM B 000520

Authorized Signature: 

Title: Drilling Superintendent

Date: 3/20/2009

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
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015-37092 | 56419 | ✓ E. Shugart Delaware |

| Property Code | Property Name | Well Number |
|---|---|---|
| ~~012980~~ 305059 | SOUTH TAYLOR 13 FEDERAL | 5 |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 258462 | NADEL AND GUSSMAN HEYCO, LLC | 3732' |

### Surface Location

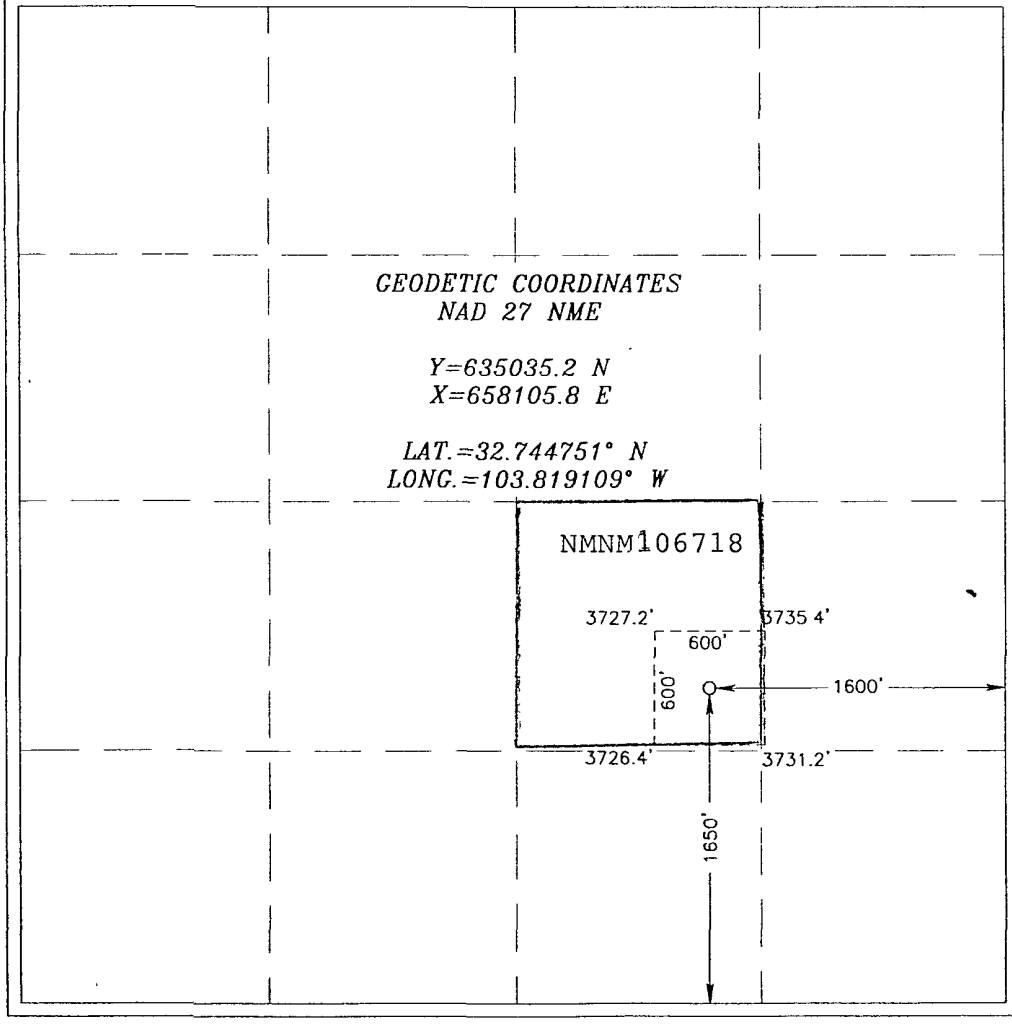
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| J | 13 | 18-S | 31-E | | 1650 | SOUTH | 1600 | EAST | EDDY |

### 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 |
|---|---|---|---|---|---|---|---|---|---|
| J | 13 | 18S | 31E | | 1650 | South | 1600 | East | EDDY |

| 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.*

Keith Cannon 3/20/09
Signature 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.*

MARCH 2, 2009
Date Surveyed: DSS

Signature & Seal of Professional Surveyor

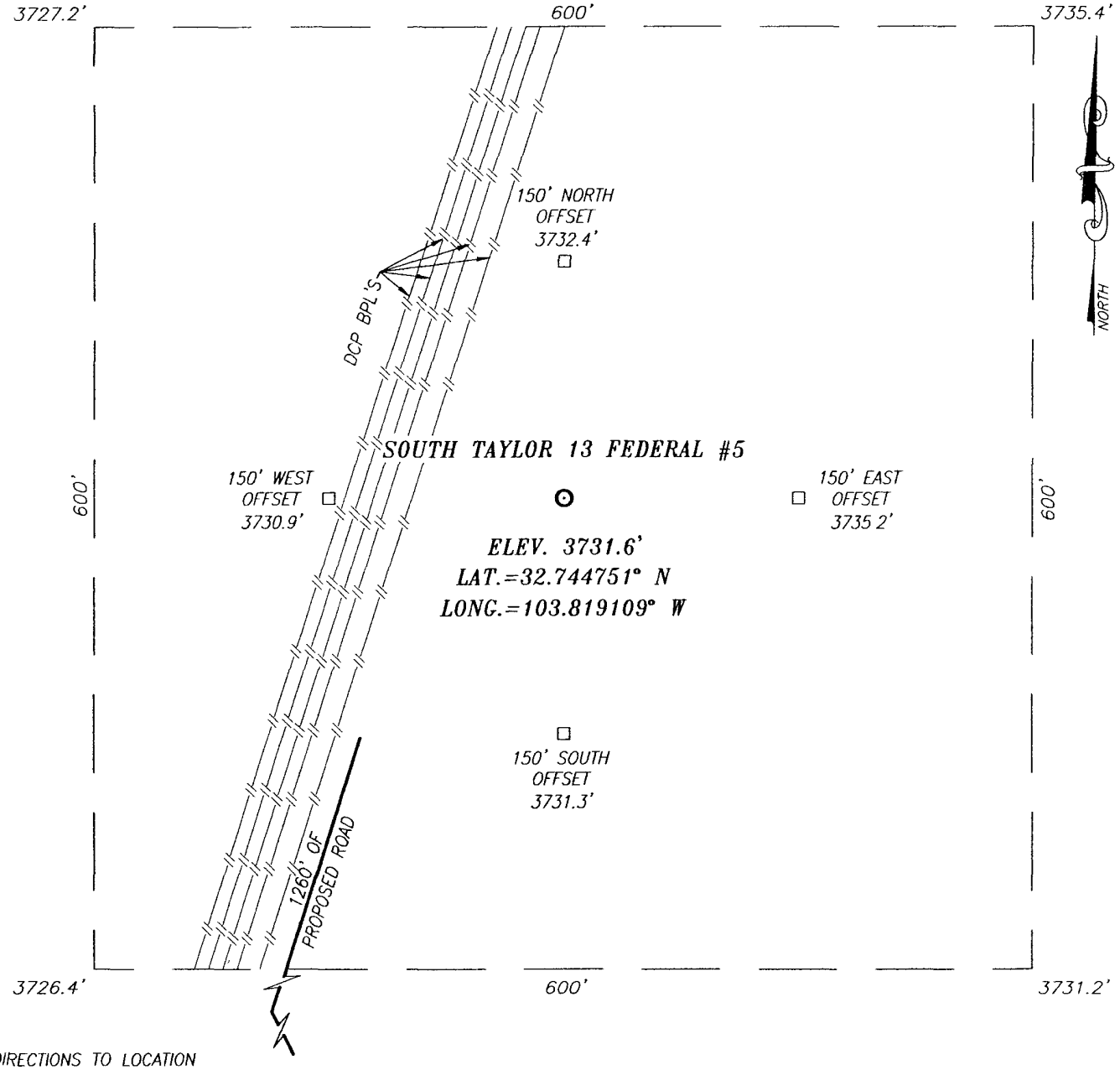
Ronald J. Eidson 3/09/09

09.11.0189

Certificate No. Gary G. Eidson 12641
Ronald J. Eidson 3239

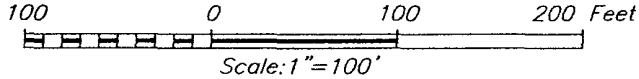
# SECTION 13, TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO




DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. 529 AND CO. RD. #L126 (MALJAMAR RD.), GO SOUTH ON MALJAMAR RD. APPROX. 4.2 MILES. TURN RIGHT AND GO WEST APPROX. 0.1 MILE. VEER RIGHT AND GO NORTHWEST APPROX. 0.2 MILES. VEER LEFT AND GO WEST APPROX. 0.6 MILES. VEER LEFT AND GO SOUTHWEST APPROX. 0.3 MILES. VEER RIGHT AND GO WEST APPROX. 0.2 MILES. TURN RIGHT AND GO NORTH APPROX. 0.2 MILES. VEER LEFT AND GO NORTHWEST APPROX. 0.2 MILES TO EXIST. ST. MARY EDSU #1 WELL. FROM THE NORTHWEST CORNER OF THE WELL PAD, FOLLOW PROPOSED ROAD SURVEY NORTHWEST APPROX. 388 FEET, THEN NORTHEAST APPROX. 812 FEET TO THIS LOCATION.




Scale: 1"=100'

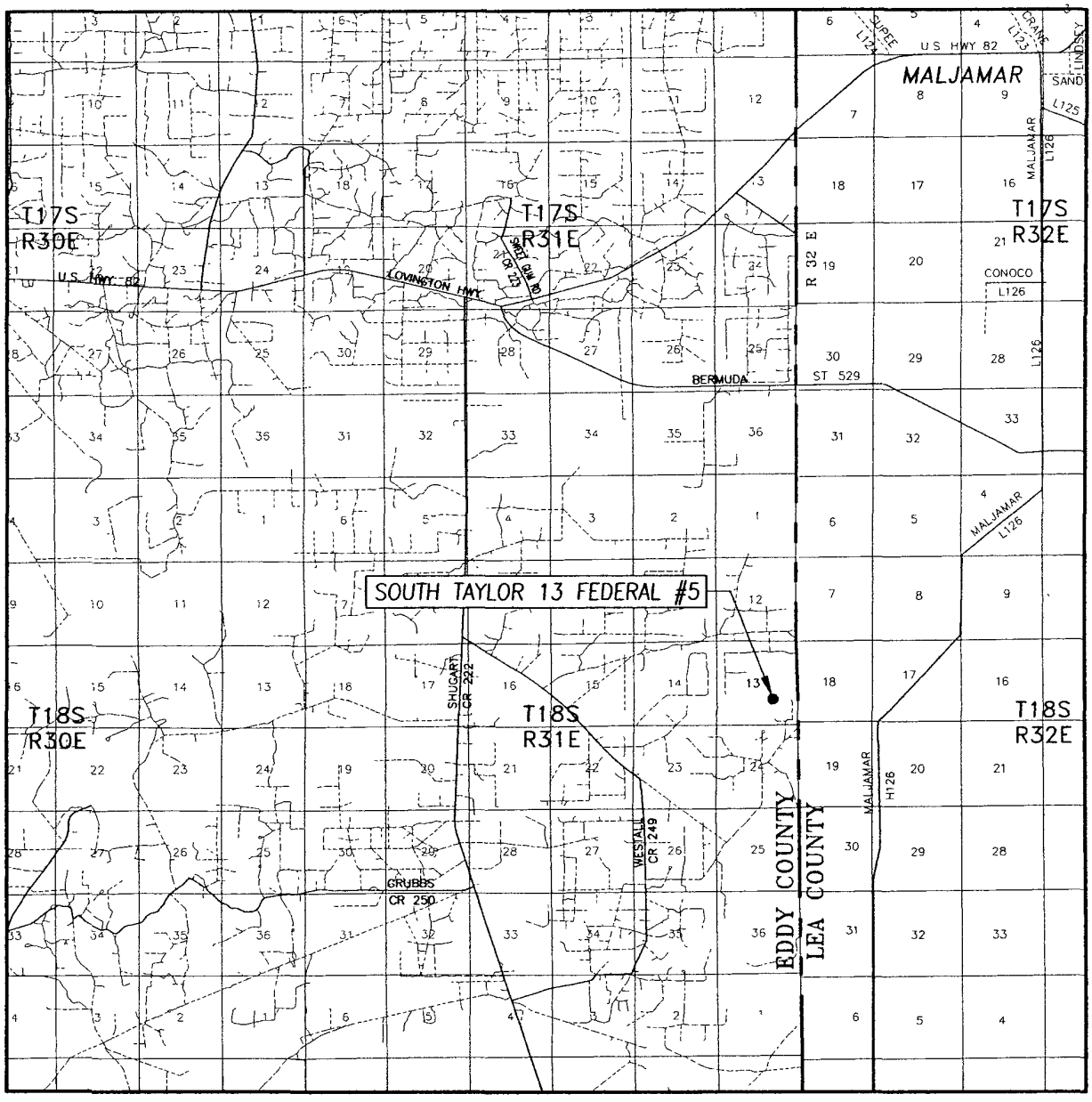

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117


## NADEL AND GUSSMAN HEYCO, LLC

SOUTH TAYLOR 13 FEDERAL #5 WELL
LOCATED 1650 FEET FROM THE SOUTH LINE
AND 1600 FEET FROM THE EAST LINE OF SECTION 13,
TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

| | | | |
|---|---|---|---|
| Survey Date: 3/2/09 | Sheet 1 of 1 Sheets | | |
| W.O. Number: 09.11.0189 | Dr By: DSS | Rev 1: | |
| Date: 3/6/09 | | 09110189 | Scale: 1"=100' |

# VICINITY MAP




SCALE: 1" = 2 MILES

SEC. 13 TWP. 18-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1650' FSL & 1600' FEL

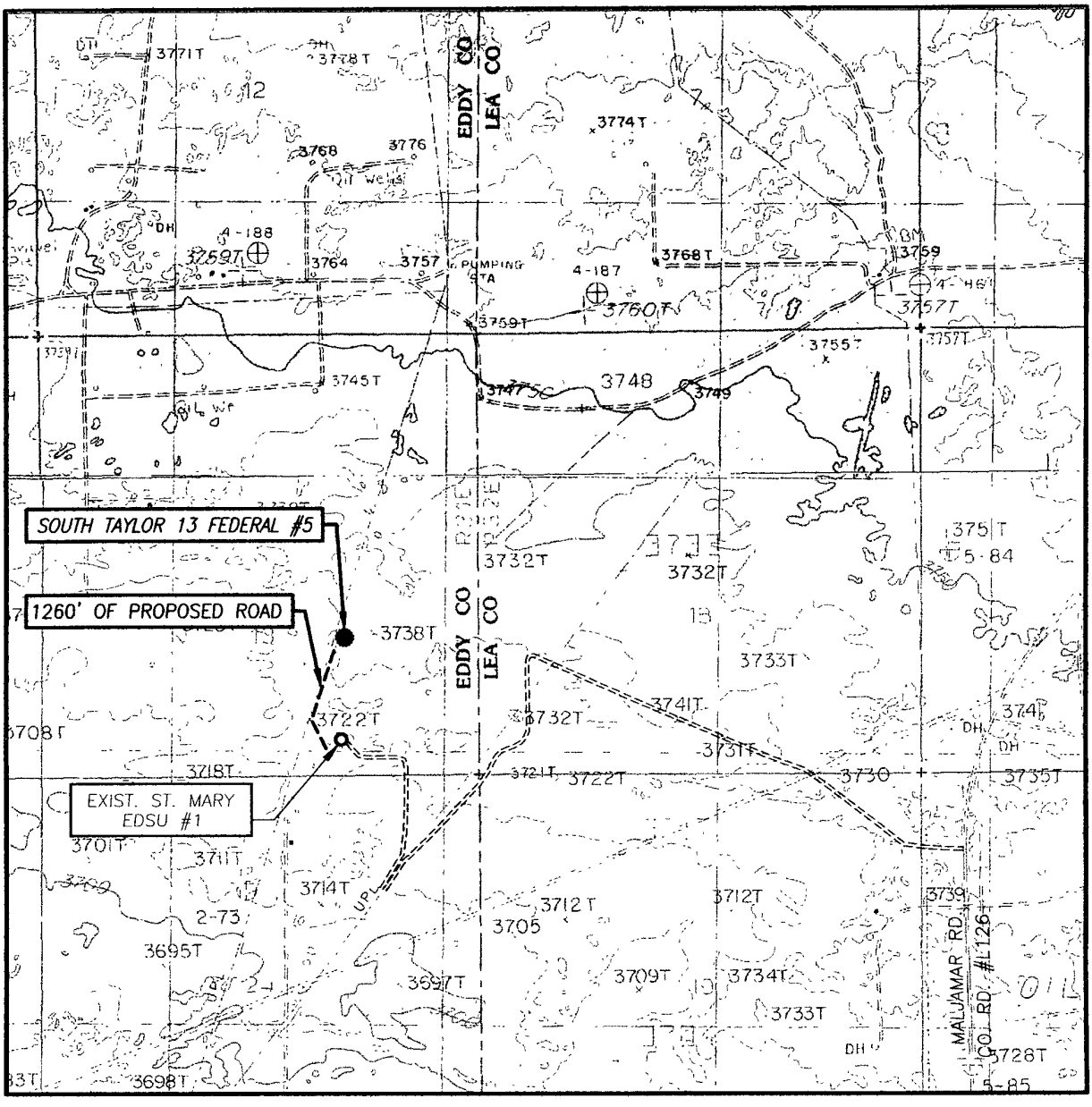
ELEVATION 3732'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

LEASE SOUTH TAYLOR 13 FEDERAL


PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

# LOCATION VERIFICATION MAP




SCALE: 1" = 2000'

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

SEC. 13 TWP. 18-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1650' FSL & 1600' FEL

ELEVATION 3732'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

LEASE SOUTH TAYLOR 13 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
GREENWOOD LAKE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

Application
Nadel and Gussman Heyco, LLC
**South Taylor 13 Federal #5**
Sec 13, T18S, R31E
1650' FSL & 1600' FEL
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 | 870' | Water |
| Salado | 1,020' | |
| BX (BASE OF SALT) | 2,185' | |
| Yates | 2,380' | |
| Seven Rivers | 2,850' | Oil |
| Bowers | 3,280' | Oil |
| Queen | 3,520' | Oil |
| Penrose | 3,755' | Oil |
| Grayburg | 4,090' | Oil |
| Loco Hills | 4,255' | Oil |
| Metex | 4,375' | Oil |
| Premier Sand | 4,465' | Oil |
| Upper San Andres | 4,600' | Oil |
| Cherry Canyon Tongue | 4,720' | Oil |
| Brushy Canyon | 5,020' | Oil |
| PTD | 5,500' | |

No other formations are expected to yield oil, gas, or fresh water in measurable volumes.
The surface fresh water sands will be protected by setting 9 5/8" casing at 895' and circulating Cement back to surface. All other 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:

| Hole size | Depth | | OD Csg | Weight | Collar | Grade | New/Used |
|---|---|---|---|---|---|---|---|
| 12 ¼" | ~~0' – 895'~~ | See COA | 9 5/8" | 36# | ST&C | J-55 | NEW |
| 7 ⅞" | 0' – 5500' | | 5 ½" | 15.5# | LT&C | L-80 | NEW |

Safety Factors: Burst 1.21 Collapse 1.125 Tension 1.8
All casing is new and API approved

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

   a. 9 5/8" Surface — Cement to surface with:
   Lead - 166 sx C, 2% CaCl, 4% Bentonite, and 0.2% Antifoamer. 12.9 ppg, 1.97 cu.ft./sk yield, TOC @ surface. w/ 100% excess.

   Tail – 200 sx C, 2% CaCl, 14.8 ppg, 1.34 cu.ft./sk yield, TOC @ 523' w/ 100% excess.

   b. 5 1/2" ~~Intermediate~~ Production — Cement to 695' with:
   Lead - 211 sx 50:50 Poz C, 5% Salt, 10% Bentonite and 0.2% AntiFoamer, 11.9 ppg, 2.46 cu.ft./sk yield, TOC @ 695' w/ 30% excess.

   Tail – 433 sx C, 1% CaCl, 14.8 ppg, 1.33 cu.ft./sk yield, TOC @ 3000'. w/ 30% excess.

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) 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 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' – 895' | 8.4 – 8.8 | 80 – 55 | NC | Fresh Water |
| 895' – 5500' | 8.8 – 10.0 | 28 - 30 | NC | Brine / Cut Brine |

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)

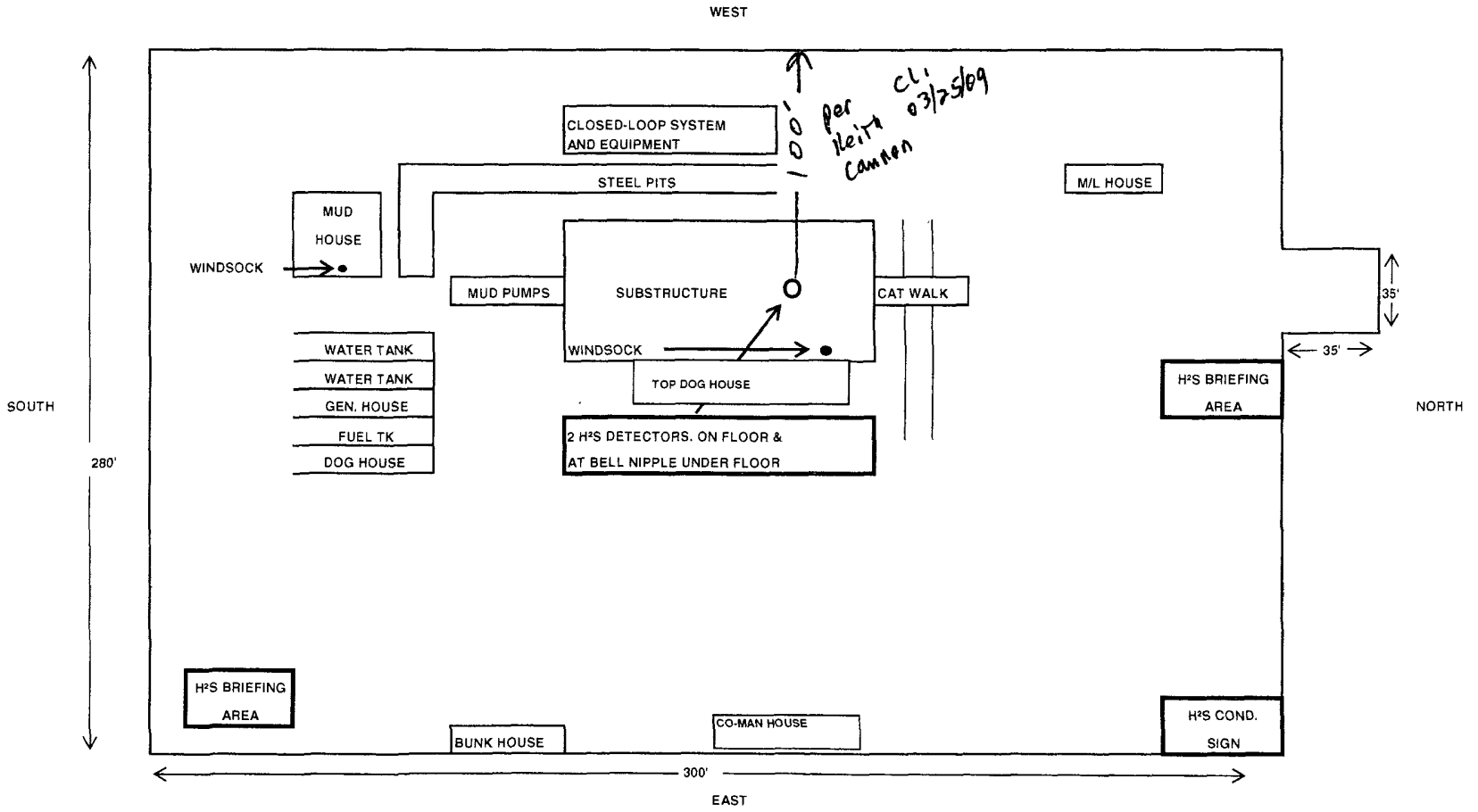
Not going to Wolfcamp or Strawn

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.

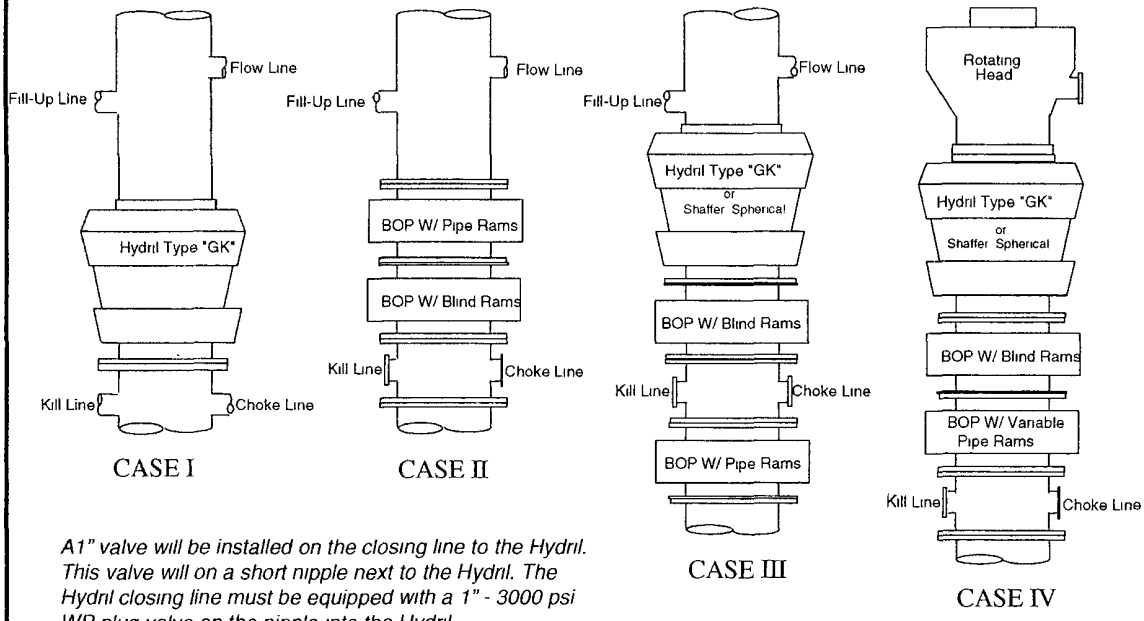
9. Anticipated Starting Date & Duration of Operation:
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 15 days. If production casing is run then an additional 15 days will be needed to complete well And construct surface facilities and/or lay flow line in order to place well on production.

EXHIBIT "D" LOCATION DIAGRAM

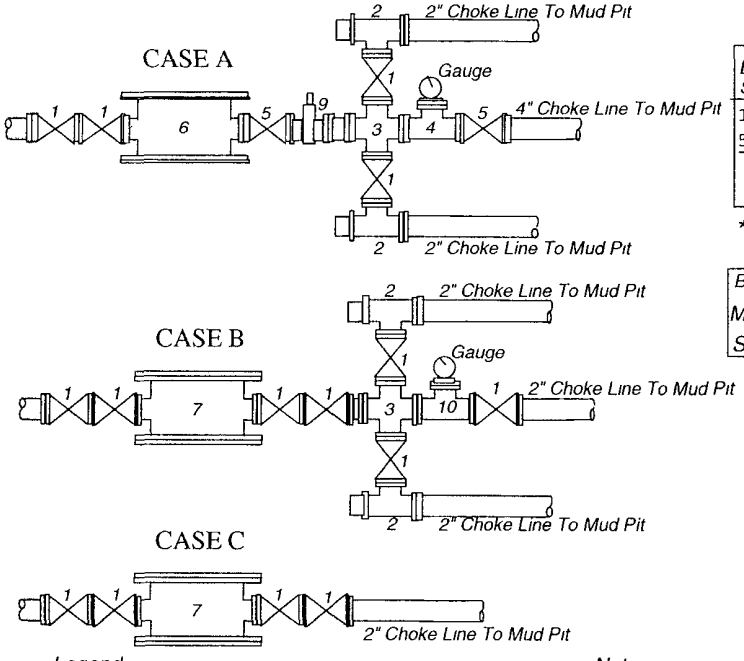
South Taylor 13 Federal #5
1650' FSL & 1600' FEL
SEC 13, T18S, R31E
EDDY COUNTY, NM



# 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)**

4/26/07

Mr. Bryan Arrant
District 2 Geologist
New Mexico Oil and Gas Division
1301 West Grand Avenue
Artesia, NM 88210

**Re: South Taylor 13 Federal #5**
**1650' FSL & 1600' FEL**
**Unit Letter J Sec. 13, T18S, R31E**
**Eddy, NM**
**Rule 118 H2S Exposure**

Dear Mr. Ingram

Nadel and Gussman Heyco, LLC 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

# Hydrogen Sulfide Drilling Operations Plan
# South Taylor 13 Federal #5
# Sec 13, T18S, R31E
# 1650' FSL & 1600' FEL
# Eddy Co. N.M.

1. Company and contract personnel admitted on location should be trained by a qualified $H_2S$ safety instructor to the recognize and handle following:
    A. Characteristics of $H_2S$ gas
    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 knowledge
    E. Evacuation procedure, routes and first aid support
    F. Proper use of 30 minutes Pressure-on-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 (high enough to be visible)
    B. Windsock at briefing area (high enough to be visible)
    C. Windsock at location entrance

4. Condition Flags and Signs
    A. $H_2S$ warning signs on lease access road into location
    B. Flags displayed on sign at location entrance
        1. Green flag indicates "Normal Safe Conditions"
        2. Yellow Flag indicates "Potential Pressure and Danger"
        3. Red Flag indicates "Danger - $H_2S$ Present in High Concentrations" *admit only emergency personnel*

5. Well Control Equipment
    A. See Exhibit #5.

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 radios or cell phones used to communicate off location or minimally in Drilling Foreman's trailer or living quarters

7. Drillstem Testing
    A. Exhausts watered
    B. Flare line equipped with electric Igniter/propane pilot light in case gas reaches surface
    C. If location near dwelling closed DST will be performed

8. Drilling Supervisor required to be familiar with effects of $H_2S$ on tubular goods/mechanical equipment

9. If $H_2S$ encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with $H_2S$ scavengers, if necessary.

PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

**NADEL AND GUSSMAN HEYCO, LLC** (575) 623-6601

**Company Personnel**

| | | |
|---|---|---|
| Terry West | Drilling Enrineer | 432-682-4429 |
| | | 432-238-2874 |
| Keith Cannon | Drilling Supt. | 575-623-6601 |
| | | 575-626-1936 |

| | |
|---|---|
| ARTESIA N.M. | |
| Ambulance | 911 |
| State Police | 575-746-5000 |
| City Police | 575-746-5000 |
| Sheriff's Office | 575-746-9888 |
| Fire Department | 575-746-5050 or 575-746-5051 |
| N.M.O.C.D | 575-748-1283 |

| | |
|---|---|
| CARLSBAD N.M. | |
| Ambulance | 911 |
| State Police | 575-885-3137 |
| City Police | 575-885-2111 |
| Sheriff's Office | 575-887-7551 |
| Fire Department | 575-885-3125 or 575-885-2111 |
| Carlsbad BLM | 575-887-6544 |

| | |
|---|---|
| HOBBS N.M. | |
| Ambulance | 911 |
| State Police | 575-392-5588 |
| City Police | 575-397-9265 |
| Sheriff's Office | 575-396-3611 |
| Fire Department | 575-397-9308 |
| N.M.O.C.D | 575-393-6161 |
| Hobbs BLM | 575-393-3612 |

| | |
|---|---|
| Flight for Life (Lubbock Tx) | 806-743-9911 |
| Aerocare (Lubbock Tx) | 806-747-8923 |
| Med flight air Ambulance (Albuq NM) | 505-842-4433 |
| SB air Med Services (Albuq NM) | 505-842-4949 |

| | | |
|---|---|---|
| Boots & Coots IWC | | 800-256-9688 or 281-931-8884 |
| Cudd Pressure Control | | 915-699-0139 or 915-563-3356 |
| BJ Services | (Artesia NM) | 575-746-3569 |
| | (Hobbs NM) | 575-392-5556 |

| | |
|---|---|
| New Mexico Emergency Response Commission (Santa Fe) | 505-476-9600 |
| 24 Hour | 505-827-9126 |
| New Mexico State Emergency Operations Center | 505-476-9635 |

**Surface Use Plan**
Nadel and Gussman Heyco. LLc
South Taylor 13 Federal #5
Section 13, T18S, R31E
1660' FSL & 1600' FEL
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 15 miles south east of Loco Hills, NM. Leave Loco Hills on US 82 & travel East 5 miles & turn South east on State Hwy 529. Go 7 miles & turn right on Co road 126 (Maljamar Rd). Go 4.2 miles, Turn right onto caliche road. Go 1.0 miles turn left. Go 0.5 mile turn right. Go 0.2 mile turn left. Go 0.2 miles turn rigth. And Go 0.2 mile to location.

2. **Planned Access Roads:**
1260' of new road will be built to access this location come in from the South.

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

4. **Location of Tank Batteries, Electric Lines, Etc:**
a. In the event the well is found productive, the South Taylor 13 Federal 5 tank battery would be utilized and the necessary production equipment
Will be installed at the well site.

5. **Location and Type of Water Supply:**
This location will be drilled using a combination of water mud systems (out line in the drilling program). Water will be obtained from commercial water stations in the area
and hauled in by transport truck using the existing and proposed roads shown in the C-102.

6. **Source of Construction Material:**
All caliche utilized for the drilling pad and proposed access road will be odtained from an existing BLM / State approved pit
Or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.

7. **Methods of Handling Waste Disposal:**
a. All trash, junk, and other waste material will be contained in trash cages or trash bin to prevent scattering. When the job is completed, all contents will be removed and
disposed of in an approved sanitary landfill. The wellsite will be cleaned of all waste within 30 days of final completion of the well.
b. A porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all
operations are complete.
c. Disposal of fluids to be transported by trucks to a nearby approved disposal.

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 back filled 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
Faye Klein P.O Box 1503 Hobbs N.M
(575) 441-5597

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.

12. **Operator's Representative:**

The Nadel and Gussman HEYCO, LLC Company representatives reponsible for ensuring compliance of the surface
Use plan are listed below.

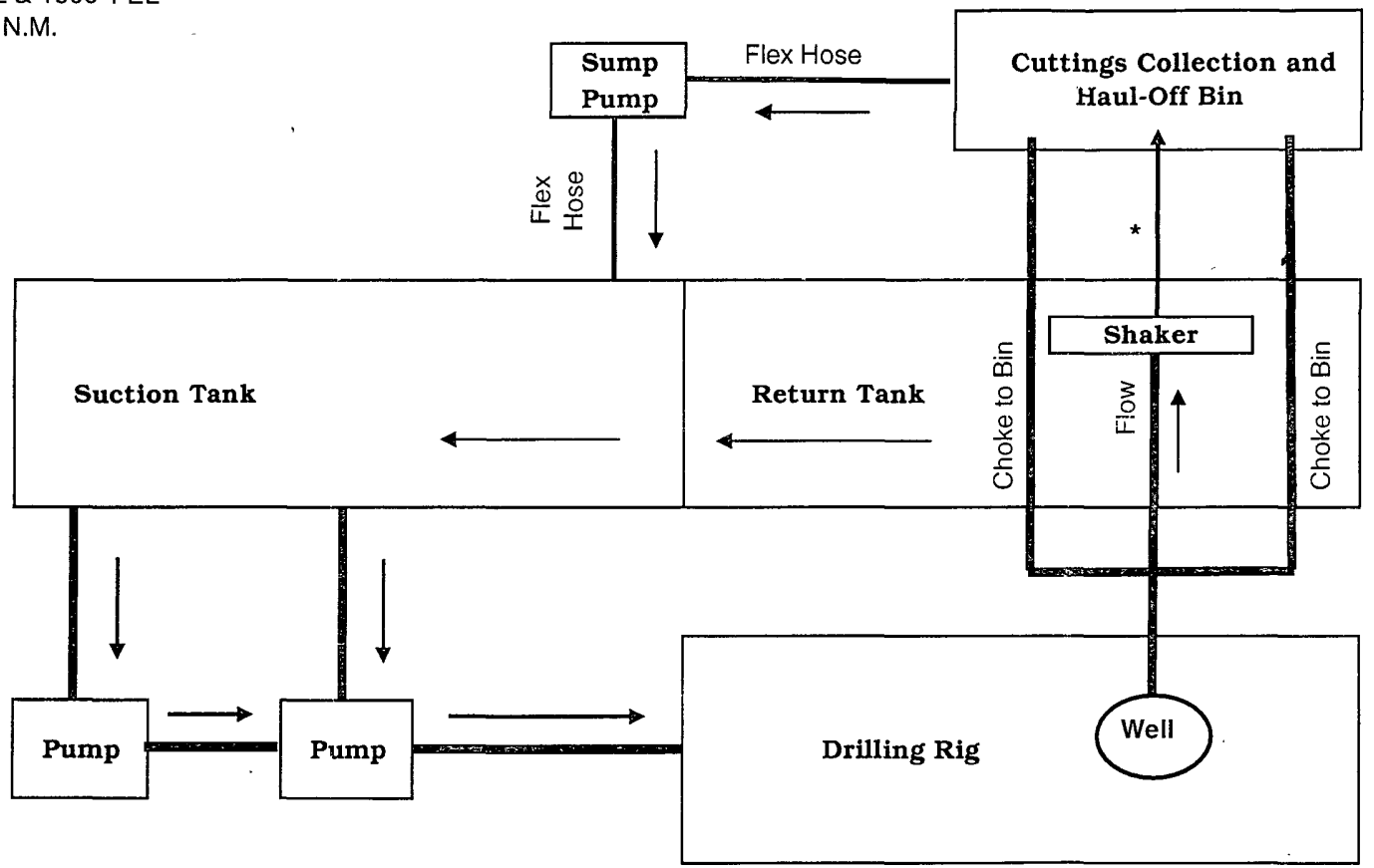
Keith Cannon, Drilling Superintendent
Nadel and Gussman Heyco, LLC
P.O. Box 1936
Roswell, NM 88202
505-623-6601

Terry West, Drilling Engineer
Nadel and Gussman Permian
601 N. Marienfild Suite 508
Midland, Tx 79701
(432) 682-4429

March 20, 2009

# Choke Manifold Schematic for Closed Loop System

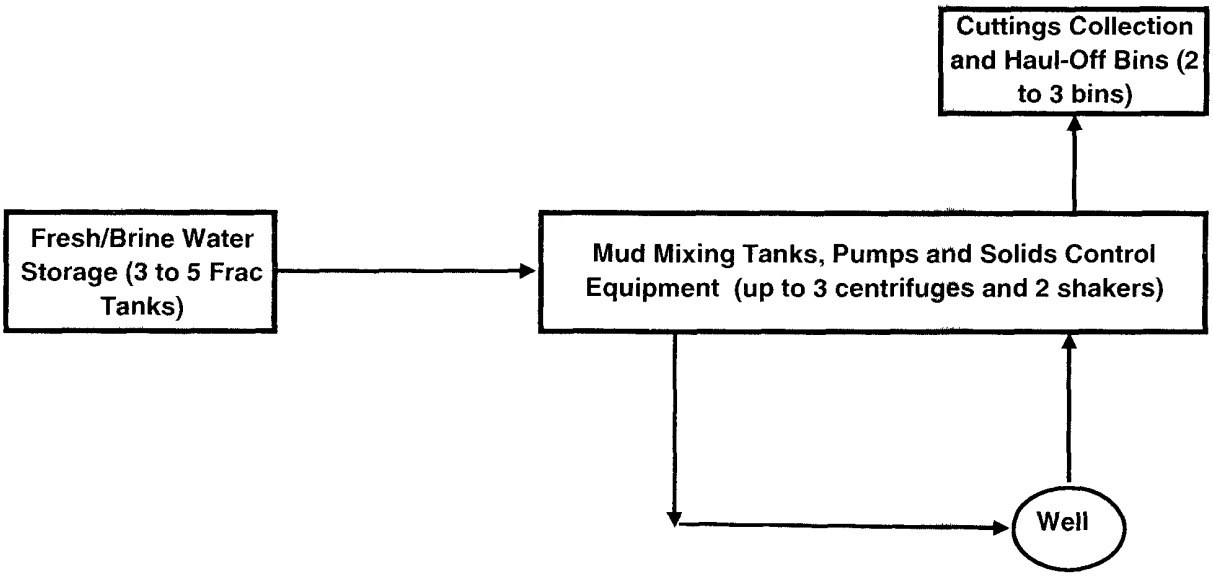
South Taylor 13 Federal #5
Sec 13, T18S, R31E
1650' FSL & 1600' FEL
Eddy Co. N.M.




* No pipe manifold from shaker to haul-off bin.

# CLOSED-LOOP SYSTEM

## Design Plan:




## Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

## Closure Plan:

During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility as noted on the C-144 form. At the end of the well, all closed loop equipment will be removed from the location.

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

Form C-144
July 21, 2008

**For temporary pits, closed-loop systems, and below-grade tanks**, submit to the appropriate NMOCD District Office.
**For permanent pits and exceptions** submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

# Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☒ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

***Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request***

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances

1.
Operator: Nadel and Gussman HEYCO, LLC OGRID # 258462
Address: P.O. Box 1936 Roswell N.M. 88202-1936
Facility or well name: South Taylor 13 Federal #5
API Number: 30-015-37092 OCD Permit Number: 0209346
U/L or Qtr/Qtr NW /4 SE /4 Section 13 Township 18S Range 31E County: Eddy
Center of Proposed Design: Latitude N32.744751° Longitude W 103.819109° NAD: ☒1927 ☐ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____bbl Dimensions: L_____ x W_____ x D_____

3.
☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☒ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☒ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19 15.17.11 NMAC
Volume: _____bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

**Fencing:** Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

7.

**Netting:** Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

8.

**Signs:** Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.3.103 NMAC

9.

**Administrative Approvals and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

***Please check a box if one or more of the following is requested, if not leave blank:***

☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

***Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance.*** **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

| | |
|---|---|
| Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☐ No |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☐ No |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| Within a 100-year floodplain.<br>- FEMA map | ☐ Yes ☐ No |

11.
**Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC
***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15 17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number. _____

12.
**Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC
***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15.17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC
***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including $H_2S$, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14
**Proposed Closure:** 19.15.17.13 NMAC
***Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.***

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method:
- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
**Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.
**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)
***Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.***

Disposal Facility Name: CRI Disposal Facility Permit Number: NM-01-0019

Disposal Facility Name: GM Disposal Facility Permit Number: nm-01-0006

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?
☐ Yes (If yes, please provide the information below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*
☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.
**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC
***Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.***

| | |
|---|---|
| Ground water is less than 50 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Ground water is between 50 and 100 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☐ No |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☐ No |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| Within a 100-year floodplain.<br>- FEMA map | ☐ Yes ☐ No |

18.
**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Keith Cannon Title: Drilling Superintendent

Signature: _____ Date: 3/20/2009

e-mail address kcannon@heycoenergy.com Telephone: (575) 623-6601

20.
**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

**OCD Representative Signature:** Jacqui Reeves **Approval Date:** 5/26/2009

**Title:** Geologist **OCD Permit Number:** 0209346

21.
**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

***Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.***

☐ **Closure Completion Date:** _____

22.
**Closure Method:**

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

***Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.***

Disposal Facility Name: CRI Disposal Facility Permit Number: NM-01-0006

Disposal Facility Name: GANDY MARLEY INC Disposal Facility Permit Number: NM-01-0019

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
**Closure Report Attachment Checklist:** ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)
☐ Proof of Deed Notice (required for on-site closure)
☐ Plot Plan (for on-site closures and temporary pits)
☐ Confirmation Sampling Analytical Results (if applicable)
☐ Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983

25.
**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

## OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 20 day of March 2009.

Name: Keith Cannon
Position: Drilling Superintendent
Address: P.O. Box 1936, Roswell, NM 88202
Telephone: 575-623-6601
Email: kcannon@heycoenergy.com

Signed: _____

# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | Nadel & Gussman HEYCO LLC |
| LEASE NO.: | NM106718 |
| WELL NAME & NO.: | 5 South Taylor 13 Fed |
| SURFACE HOLE FOOTAGE: | 1650' FSL & 1600' FEL |
| BOTTOM HOLE FOOTAGE | ' F L & ' F L |
| LOCATION: | Section 13, 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)

**South Taylor 13 Federal # 5:** Closed Loop System- V- Door North to Northeast

1. 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.

2. Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

3. The South Taylor 13 Federal # 5 well location needs to be built to a maximum of 95 feet to the west with the V- Door being north to northeast. This is needed to prevent building the pad over 5 buried pipelines which are running northeast to southwest.

# 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 (575) 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. Closed Loop System

**South Taylor 13 Federal # 5:** Closed Loop System- V- Door North to Northeast

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## 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 (575) 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.

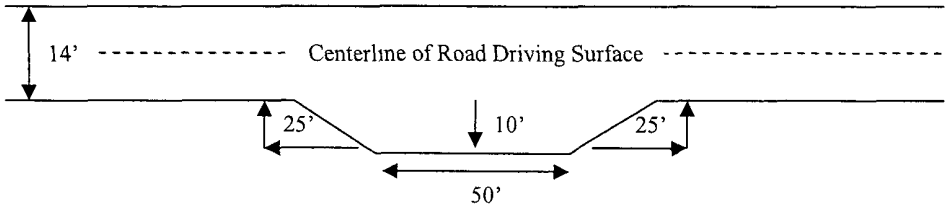
**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**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**

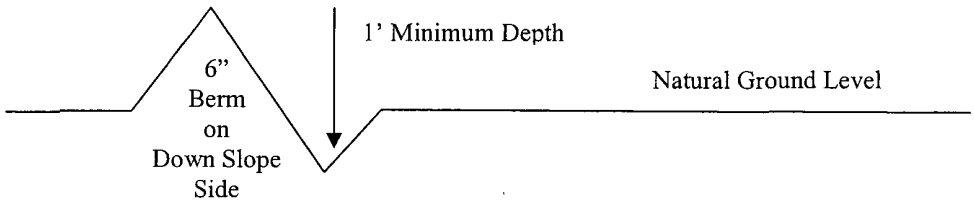



**Drainage**

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:

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

**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.

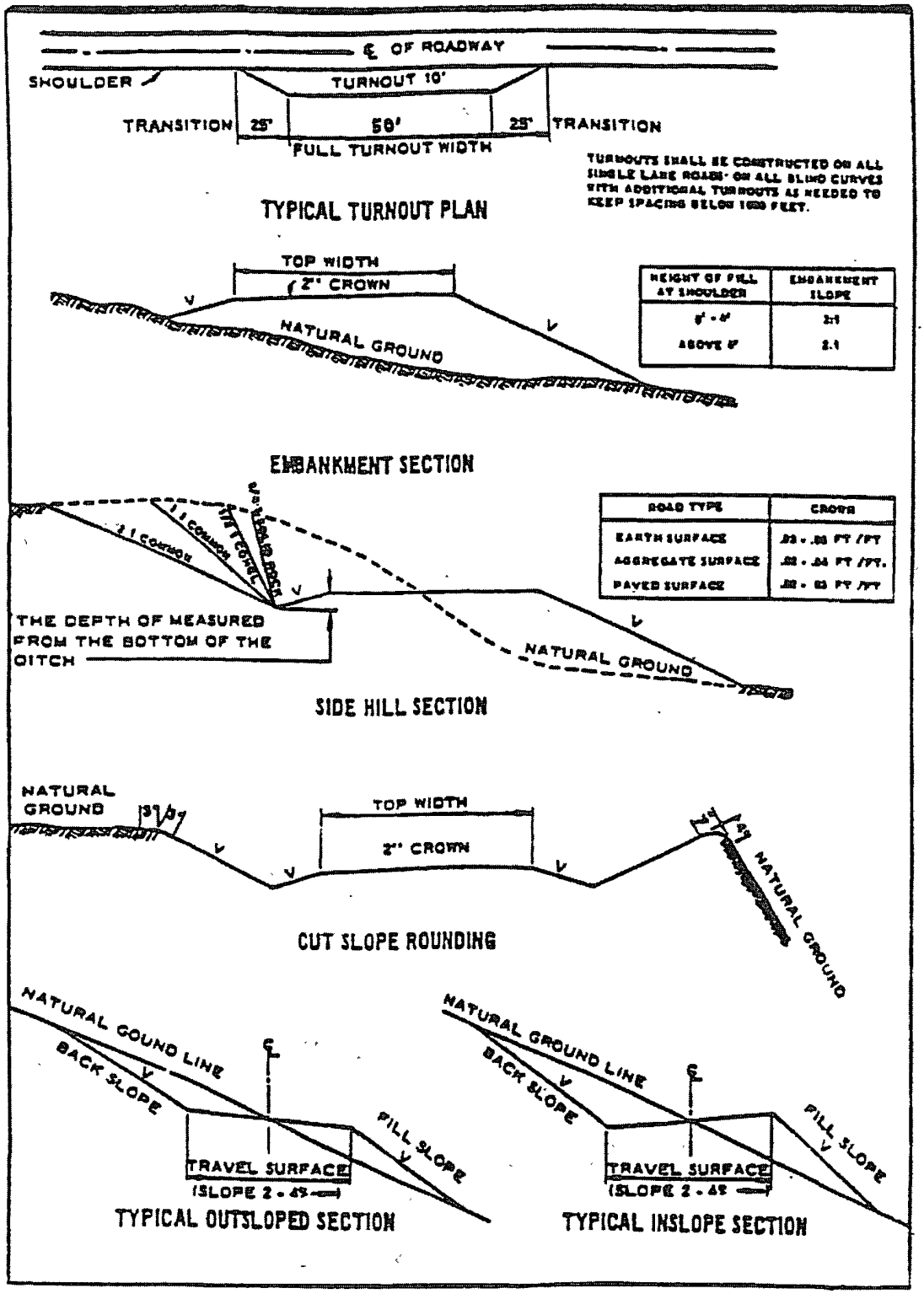
A gate shall be constructed and fastened securely to H-braces.

**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**. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. 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.**

**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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

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

**Possible water and brine flows in the Salado and the Grayburg Formations. Possible lost circulation in the Grayburg and San Andres Formations.**

1. The **9-5/8** inch surface casing shall be set at approximately **915** 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 is to include the lead cement slurry.**

    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 **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.

3. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

3. 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.

## D. DRILL STEM TEST

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

**RGH 043009**

# 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.

The 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.

BLM Serial #:
Company Reference:
Well Name and Number:

Seed Mixture for LPC Sand/Shinnery 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 seed 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 |
|---|---|
| Plains Bristlegrass | 5lbs/A |
| Sand Bluestem | 5lbs/A |
| Little Bluestem | 3lbs/A |
| Big Bluestem | 6lbs/A |
| Plains Coreopsis | 2lbs/A |
| Sand Dropseed | 1lbs/A |
| **Four-winged Saltbush | 5lbs/A |

* This can be used around well pads and other areas where caliche cannot be removed.

*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.