Form 3160-3
(July 1989)
(formerly 9-331C)

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

CONTACT REGULATORY OFFICE FOR NUMBER OF COPIES REQUIRED
(Other instructions on reverse side)

30-015-26345

BLM Roswell District
Modified Form No.
NM060-3160-2

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90 APR 5 10 39 AM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
APR 20 '90
O. C. D.
ARTESIA, OFFICE

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Greenhill Petroleum Corporation

3a. Area Code & Phone No.: 713 955-1146

3. ADDRESS OF OPERATOR: 12777 Jones Road, Suite 375, Houston, TX 77070

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface: 1310' FSL & 2310' FEL
At proposed prod. zone: Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 7 miles South of Loco Hills

5. LEASE DESIGNATION AND SERIAL NO.: NM 033775

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: ---

7. UNIT AGREEMENT NAME: North Benson Queen

8. FARM OR LEASE NAME: North Benson Queen Unit

9. WELL NO.: 46

10. FIELD AND POOL, OR WILDCAT: N. Benson Queen Assoc

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 28, T18S-R30E

12. COUNTY OR PARISH: Eddy Co. | 13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 1310'

16. NO. OF ACRES IN LEASE: 800

17. NO. OF ACRES ASSIGNED TO THIS WELL: 40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.:

19. PROPOSED DEPTH: 3700'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3455' GR

22. APPROX. DATE WORK WILL START*: as soon as possible

23. PROPOSED CASING AND CEMENTING PROGRAM

HOLE SIZE	CASING SIZE	WEIGHT/FOOT	GRADE	THREAD TYPE	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	8 5/8	24#	K55	STC	±600'	See below CIRCULATE
7 7/8	5 1/2	14#	K55 or J55	STC	3600'	See below CIRCULATE

8 5/8" Surface Lead: 200 sx Howco Light Cmt Premium Plus + 1/4 PPS Flocele + 2% $CaCl_2$ @ 12.4 ppg
Tail: 100 sx Premium Plus + 2% $CaCl_2$ @ 14.8 ppg

5 1/2" Production
Spacer - 10 bbls 2% KCL water
750 gal Superflush 201
5 bbls 2% KCL water

Lead - 275 sx Howco Light Premium Plus + 15 PPS Salt + 1/4 PPS Flocele @ 12.4 ppg.

Tail - 275 sx 50/50 Poz mix Premium Plus + 2% Total Gel + 3 PPS Salt + .5% Halad-332 + 10 PPS Microbond @ 14.4 ppg.

Part ID-1
4-27-90
New Loc & API

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Richard J. Lengnick TITLE Landman DATE 3/30/90

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY Orig. Signed by Richard L. Manus TITLE AREA MANAGER CARLSBAD RESOURCE AREA DATE 4-19-90

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

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APR 5 10 40 AM '90

CARL... ...OE
AREA ... ...RS

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
GREENHILL PETROLEUM CORP.	NORTH BENSON QUEEN UNIT	46

Unit Letter	Section	Township	Range	County
O	28	18 South	30 East NMPM	Eddy

Actual Footage Location of Well:
1310 feet from the South line and 2310 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3455.0	Queen	N. Benson Q-G	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

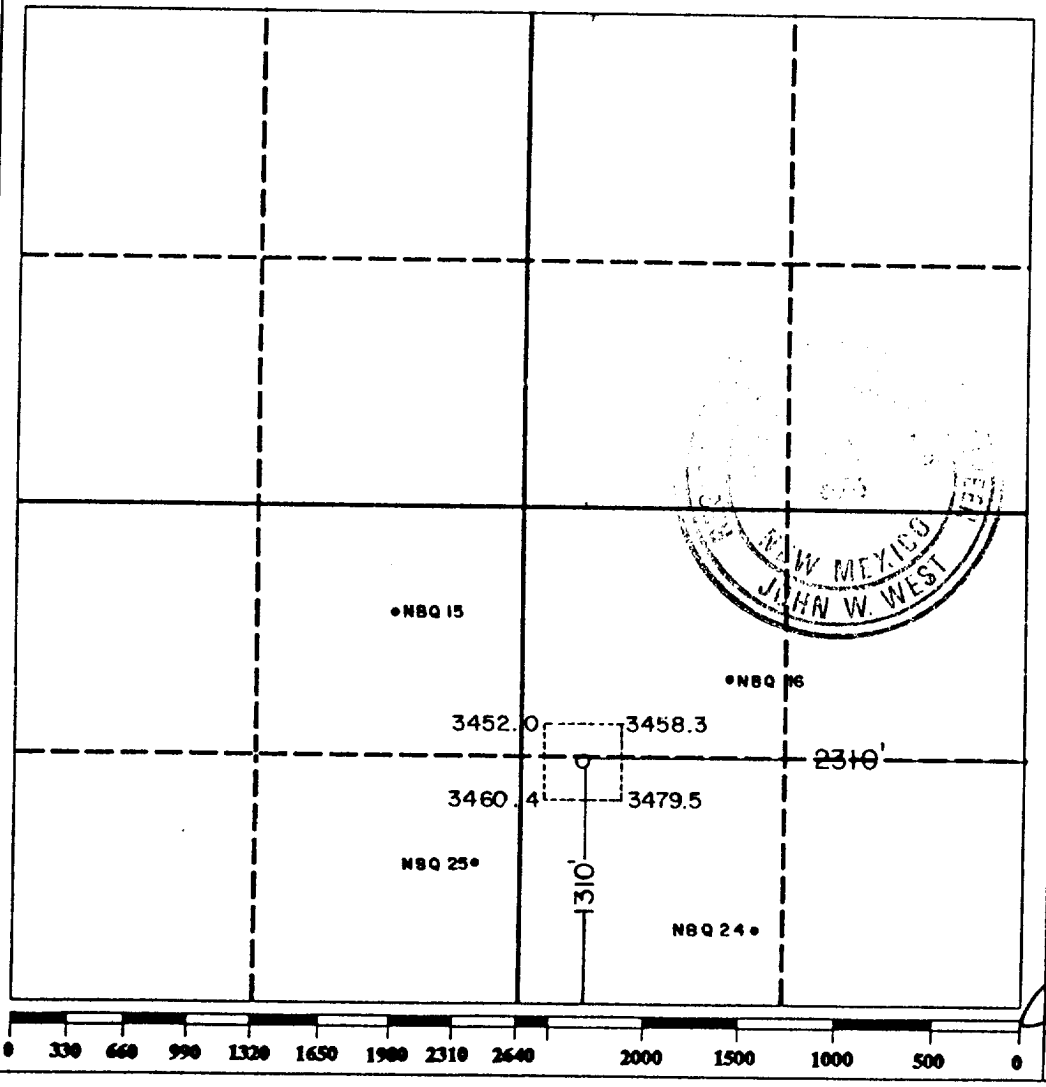
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if neccessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: Michael J. Newport

Printed Name: Michael J. Newport

Position: Landman

Company: Greenhill Petroleum Corp.

Date: 3/30/90

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 supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: February 7, 1990

Signature & Seal of Professional Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

128830

GREENHILL PETROLEUM CORPORATION
WELL PROGRAM

Well Name: North Benson Queen Unit # 46
AFE No.: _____

Location: 1310' FSL & 2310' FEL, Section 28,T18S, R30E, Eddy Co., New Mexico
Directions: _____

GEOLOGICAL PROGNOSIS

Elevation: Ground Level @ 3455'

Formations	Depth (Est.)	Subsea (Est.)
Possible F.Water	0- 355'	Freshwater
Top Anhydrite	355'	+3120'
Top Salt	560'	+2915'
Base Salt	1380'	+2095'
Top Yates	1565'	+1910'
Top Queen	2745'	Poss.Prod.+ 730'
Top Penrose	2970'	Poss.Prod.+ 505'

Formations	Depth (Est.)	Subsea (Est.)
Top Grayburg	3340'	+ 135'
Core Points		
240' Total	2745-2805' (60')	
	2970-3060' (90')	
	3250-3340' (90')	

Logs: At TD: GR-DLL-MSFL-SONIC-CAL, GR-CAL-DSN II-SDL from TD to surface casing.

Remarks: Rotary SWC: As required

Casing Program

Intervals	Length	Casing	Burst PSI (DF)	Coll PSI (DF)	Ten LBS (DF)	Torque Ft-Lbs Optimum
0 - ±600'	600'	8 5/8", 24 #, K55, STC	2950 (1.48)	1370 (4.62)	263M (18+)	(2000psi Wellhead)
Set in the cap rock at the top of the salt at ± 560'.						
0 - 3600'	3600'	5 1/2", 14.0# K55, STC, SMLS	4270 (1.42)	3120 (1.56)	189M (3.39)	(3000psi Wellhead)

Wellheads: Larkin 8 5/8" Fig 92, 2000 psi WP, Threaded. Larkin 5 1/2" Fig 612, 3000psi with a top flange, Threaded.

Remarks: BOP Tests: Test BOPs and surface equiptment to 2000psi on nipple up and when any seals are broken. Test 8 5/8" and 5 1/2" to 1000psi for 30 minutes. Repair if more than 10% of the pressure is loss in 30 minutes.

Cement Program

Hole Size	Depth	CSG Size	Cement	Yield CF/SX	Excess (%)	TOC	WOC HRS.
12 1/4"	600'	8 5/8"	Lead: 275 SX HOWCO C+ 1/4 PPS FLOCELE + 2% $CaCl_2$ @ 12.4ppg	1.83	100	Surf	8
			Tail: 100 SX HOWCO C + 2% $CaCl_2$ @ 14.8ppg		100	400'	
Lost circulation is possible, have 1" and cement available for top out cement job.							
7 7/8"	3600'	5 1/2"	750 gal Superflush 201				
			Lead: 275sx Halliburton Light Premium Plus + 15PPS Salt + 1/4 PPS Flocele (12.4 ppg)	2.32	100	Surf	12
			Tail: 275 sx 50/50 Poxmix Premium Plus + 2% Gel + 3PPS Salt + .5% HALAD-322 + 10 PPS Microbond (14.4ppg)	1.39	50	2200'	12

Surf CSG: Run a centralizer on joints 1,2, and every fourth joint to surface. Run GS, 1 jt, IF and csg. Thread lock bottom 2 joints. Use a screw on starting head.

Prod CSG: Remove varnish from bottom 800' (sandblast). Run FS, 2 jts, FC, csg. Threadlock the bottom 2 joints. Centralize 2 per joint to 2500'. Hydro-Bonders may be run depending on formation washout. Displace with water after dropping plug.

Application For Permit To Drill

Greenhill Petroleum Corporation

North Benson Queen Unit Well # 46
46- 1310' FSL & 2310' FEL, Sec 28, T18S, R30E

Eddy County, New Mexico

Greenhill Petroleum submits the following attachments in addition to the Form 3160-3, Application for Permit to Drill, in accordance with Onshore Oil and Gas Order Nos. 1 and 2.

1. The well location plat depicting the location of well number 46.

2. The unprepared ground elevation is: 3455.0' for # 46.

3. A rotary drilling rig will be used for drilling these wells. The contractor has not been determined at this time.

4. The drilling program containing the following information.

   Estimated tops of geologic markers
   Estimated depths of fresh water and producing horizons
   Proposed coring program
   Proposed electric logging program
   Proposed casing program and wellheads
   Proposed mud program
   Proposed cementing program
   Emergency Notification call list

5. The estimated duration of each well is 25 days; drilling 11 days, completion 10 days, rig moves 4 days.

6. Operational requirements.

7. BOP requirements and equipment.

8. BOP sketch.

9. A H_2S Contingency Plan. H_2S equipment will be installed before drilling H_2S or suspected H_2S formations.

I hereby 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; and that the work associated with operations proposed herein will be performed by Greenhill Petroleum Corporation 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.

Date 3/7/90

H. P. Bezner
Drilling Manager

GREENHILL PETROLEUM CORPORATION

BOP SCHEMATIC FOR NORTH BENSON QUEEN
WELLS # 46 AND #47

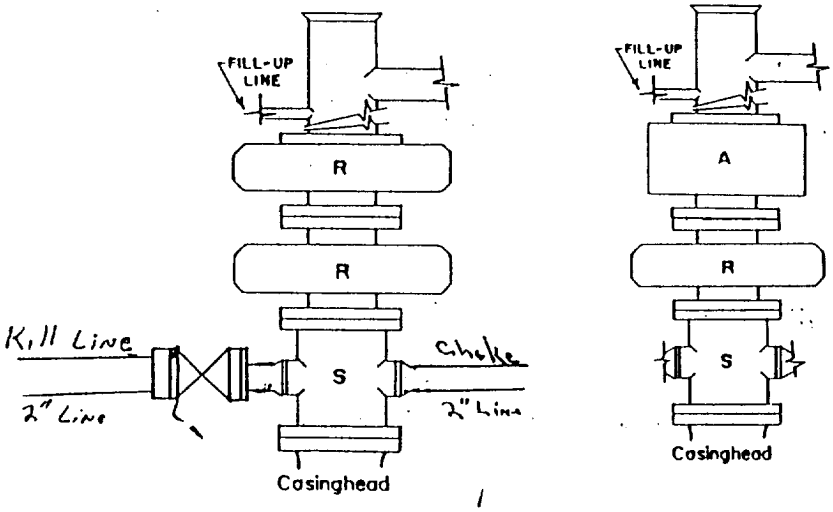


FIGURE K1-1. Recommended GPC Class 2 BOP stack, 2000 pwl WP. Either SRd (left) or SA (right) arrangement is acceptable and drilling spool is optional.

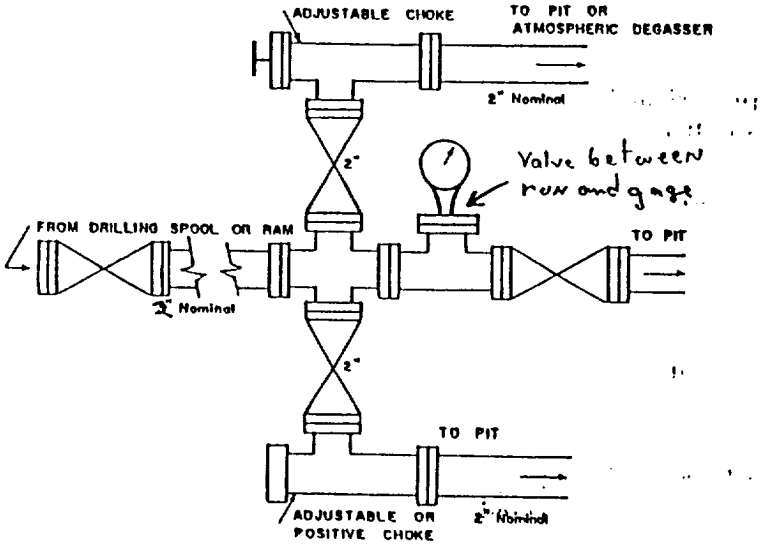


FIGURE K4-1. GPC recommended choke manifold for 2000 and 3000 psi WP service.

Mud Program

Interval	WT (LB/GAL)	VIS (SEC)	PH	WL (CC)	Type Mud & Additives
0 - 600'	8.4 - 8.6	30 - 35		NC	Fresh wtr, lime, gel, paper
600 - 2700'	9.3+	40 ±		NC	Start brine additions on drill out. Use brine.
2700 - 3600'	9.5 - 10.0	40		6- 8 cc	Yellow starch and salt gel to protect the formation and cores.

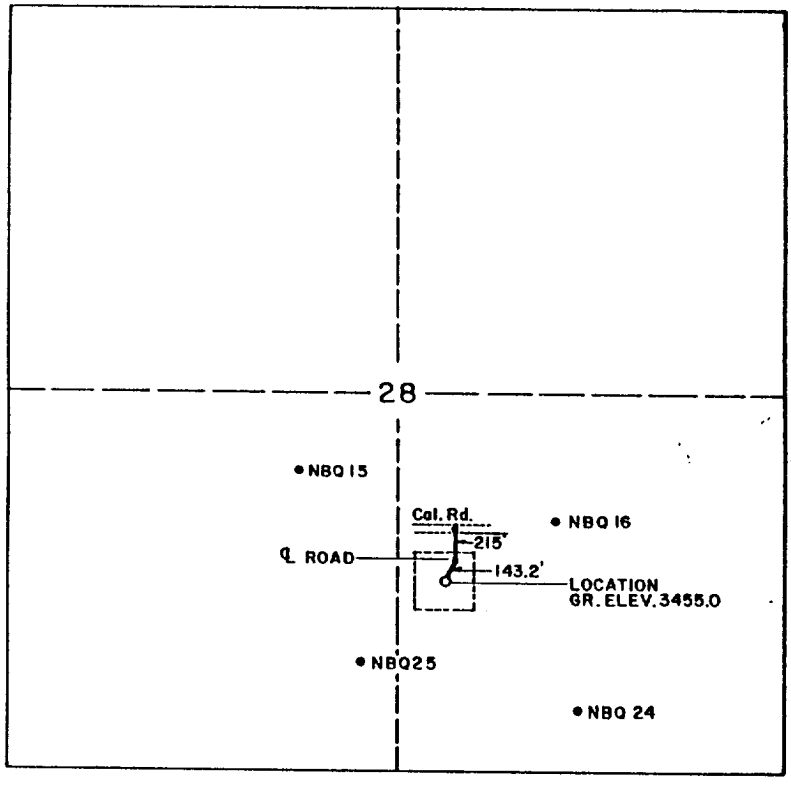
Remarks: Lost circulation is possible during the drilling of the 12 1/4" hole. Have paper and LCM available. Dry drill only if circulation cannot be regained.

NOTIFICATION

NAME	TITLE	HOME PHONE
Hugh Bezner	Drilling Manager	(713) 980-0808
Cy Schaadt	Sr. Drilling Engineer	(713) 974-1733
Phil Geaslan	Drilling Engineer	(713) 353-1875
Charles Little	Production Superintendent	(713) 251-5156
Larry Cochran	Petroleum Engineer	(713) 460-3650
Norby Renaud	Production Engineer	(713) 320-0940
David Tilley	Production Engineer	
Ken Pfau	Production Geological Engr.	(713) 334-2072
Harry Faulkner	Petrophysical Engineer	(713) 556-6466

134889

SECTION 28, TOWNSHIP 18 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO. 676 JOHN W. WEST NEW MEXICO

JOHN W. WEST, N.M. P.E. & L.S. No. 676
TEXAS R.P.S. No. 1138
RONALD J. EIDSON, N.M. L.S. No. 3239
TEXAS R.P.S. No. 1883

GREENHILL PETROLEUM CORP.

A Proposed Road To North Benson Queen Unit 46, crossing section 28, township 18 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS HOBBS, NEW MEXICO

Scale: 1"= 1000'		Drawn By: Presley
Date: 2/10/90	Ck.	Sheet 1 of 1 Sheets

GREENHILL PETROLEUM CORPORATION

OPERATIONAL REQUIREMENTS for

NORTH BENSON QUEEN UNIT # 46

The following are either GPC requirements for safe operations or requirements for operations on State and Federal leases.

1. Signs: The sign will show the operator's name, lease or unit name, well number, and location of the well by footage and the lease serial number.

2. Pits: The pits will be lined to prevent leakage to the soil.

3. Pits: GPC will deep bury the mud and pit contents.

4. Cement: Minimum WOC time is 8 hours for all strings. A minimum of 500 psi compressive strength at the shoe is required before drilling out. The critical zone criteria outlined in the NM Rule 107 will be observed. WOC time must be recorded on the IADC report.

5. Casing test pressure: The surface and production casing will be tested to 1000psi before drilling the float collar. Pressure will be held for 30 minutes, if pressure decline more than 10% corrective measures must be taken before drilling out. Pressure and time will be reported on the IADC Report.

6. All state and local drilling permits will be obtained prior to spud.

7. Maximum casing pressure will be posted for each casing string.

8. A member of the drill crew will be on the rig floor at all times.

9. General Requirements for Oil and Gas Operations on Federal Leases, attached, contains additional requirements for the North Benson Queen Unit.

Greenhill Petroleum Corporation

North Benson Queen # 46

BOP Requirements

1. All BOP equipment will meet the minimum requirements for 2M equipment as specified in Order No. 2, FR Vol 53, No. 223, November 18, 1988.

2. BOPs: The BOPs (2M system) will consist of 1 ram and 1 annular preventer or 2 rams, configured SRR, RSR or SRA depending on the contractor's substructure. The rams and annular preventers will be 2000 psi working pressure. Choke lines, kill lines and associated equipment will be 2" minimum.

3. BOP tests: Ram BOPs must be tested to rated working pressure or 70% of the internal yield of the casing, which ever is less. For the 8 5/8" string the minimum internal yield is 2950psi, 70% is 2065psi. The wellhead and BOPs are 2000psi WP. The required test pressure is 2000psi for rams and 1000psi for the annular. Preventers will be retested if any pressure seal is broken. Rams and associated equipment will be for 30 minutes, annular test will be for 10 minutes. Record all tests on the IADC report.

4. BOPs: Rams will be function tested once each trip, but no less than once each day (24 hrs). The annular preventer shall be actuated on the drill pipe at least once each week.

5. BOPs: Casing rams are required prior to running production casing.

6. BOP Other: Hand wheels will be installed if the rig does not have automatic locking devices (valves installed in the closing lines as close as possible to the preventer(s)). The accumulator and associated power sources will conform to the minimum requirements outlined in Order No. 2.

7. Drill String BOP: An inside BOP and full opening stabbing valve (Upper Kelly cock valve) will be on the floor at all times. This valve will be tested while testing the BOPs.

8. PVT monitoring: The drilling crew will visually monitor the pit level and flow line volume while operating.

9. Fillup line: A fillup line will be installed in the bell nipple above the preventers.

10. Trip tank: A trip tank will be used for all trips. The driller will record the fillup required every 5 stands of drill pipe or every stand of collars. Mud level will be maintained at 100' below the rotary or less while tripping.

11. BOP Drills: Drills will be performed each week with each crew. All drills will be recorded on the IADC report.

Surface Use and Operation Plan
Greenhill Petroleum Corporation
North Benson Queen Unit Well No. 46
#46-1310 FSL & 2310 FEL, Sec 28, T18S-R30E
Eddy County, New Mexico
(Development Well)

This plan is submitted with Form 9-331C, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effects associated with the operation.

1. EXISTING ROADS

A. Exhibit A is a Cad map of the North Benson Queen Unit Area on a scale of approximately 1 inch to 500 feet showing the location of the proposed wellsite, roads in the vicinity, road to the location, existing flowlines, injection wells, etc. The road into the location is colored in red and begins on the map with the asterisk next to Section 33.

Exhibit B is a lease map prepared by Midland Map Company showing the location of the proposed wellsite roads in the vicinity. The proposed location is situated approximately 11 miles Southeast of Artesia, New Mexico, via the access route shown in red.

DIRECTIONS

From Artesia go approximately 11 miles in a southeast direction on Highway 360 to the intersection of County roads 360 and 251, go NE on 251 2.6 miles to the North Benson Queen tank Battery, turn left onto the caliche road, go .2 miles to the location (NBQ46) on the left.

2. PLANNED ACCESS ROAD

A. The proposed new access will be approximately 215 feet in length from point of origin to the edge of the drilling pad. The road will lie in a north to south

direction.

B. The new road will be approximately 12 feet in width.

C. The new road will be covered with caliche. No turnouts will be necessary.

D. The center line of the new road has been staked and flagged and the route of the road is clearly visible.

3. LOCATION OF EXISTING WELLS

A. The well locations in the vicinity of the proposed well are shown in Exhibit A. There are several wells within a one mile radius because this is a producing field.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

A. In the event that the well is productive, a two inch steel flowline will be connected to existing facilities.

5. LOCATION AND TYPE OF WATER SUPPLY

A. Water for drilling will come from a line laid from the fresh water injection plant in the SE/4 of Section 28.

6. SOURCES OF CONSTRUCTION MATERIALS

A. Any caliche required will come from the deep bury pit on the proposed location.

7. METHODS OF HANDLING WASTE DISPOSAL

A. Drill cuttings will be disposed of in the reserve pits.

B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.

C. Water produced during operations will be collected in tanks until hauled to an approved disposal system or a separate disposal application will be submitted to the USGS for appropriate approval.

D. Oil produced during operations will be stored in tanks until sold.

E. Current laws and regulations pertaining to the disposal of human wastes will be complied with.

F. Trash, waste paper, garbage and junk will be buried in a separate trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind.

G. All trash and debris will be buried or removed from the wellsite within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES

A. None required

9. WELLSITE LAYOUT

A. Exhibit C shows the dimensions of the well pad and reserve pits, and the location of major rig components.

B. The reserve pits will be plastic lined.

10. PLANS FOR RESTORATION OF THE SURFACE

A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk, to leave the wellsite in as good a condition as possible. All pits will be filled and leveled within 90 days after abandonment.

11. TOPOGRAPHY

A. The wellsite and access route are located in sand hills near Loco Hills.

B. The top soil at the wellsite is sandy.

C. The vegetation cover at the wellsite is moderately sparse, with prairie grasses, some yucca, and miscellaneous weeds.

D. No wildlife was observed but it is likely that rabbits, lizards, insects, and rodents traverse the area. The area is used for cattle grazing.

E. There are no ponds, lakes, streams, or rivers within several miles of the wellsite.

F. There are no residences in the area.

G. The wellsite is located on federal surface.

H. There is no evidence of any archaeological, historical, or cultural sites in the vicinity of the location.

12. OPERATOR'S REPRESENTATIVES

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

Charley Little
Operations Manager
12777 Jones Road
Suite 375
Houston, TX 77070

Hugh P. Bezner
Drilling Manager
11767 Katy Freeway
Suite 540
Houston, TX 77079

13. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Greenhill Petroleum Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

H. P. Bezner

MJN:SKG