rm 3160-3 (April 2004) 0455

# UNITED STATES M. Oil Cons. DIV-Dist. 2 DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGES WITH WAR WAS AND WAR WAS A

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

APP	LICATION FOR PER	MIT TO DRILL!	RRESIDER	IM 882	10   5.	Lease Serial 1 NMNM5321	No. 9 12828
a. Type of Work	X DRILL	REENTER					otee or Tribe Name
b. Type of Well X Oi	l Well Gas Well	Other	] Single Zone	Multiple Zor	ne 7.	Unit or CA A	greement Name and No.
Name of Operator					8.	Lease Name a	and Well No.
Nearburg Producing ( a. Address	Company		12h Phone M	o. (include area co	(de)		ck 11 Fed #8
	land TV 7070E				API Well No.	015 - 3399	
Location of Well (Report le	rdance with any State	eauirements)*	17000-0233	10			
3300 N A St., Bldg Location of Well (Report to At surface 1956 FSL	IKE APPROVA 11-22S-24E	L' BY STAT	RECEIVED	)  10.	Indian B	ol, or Exploratory asin; Upper Penn, M., or Blk. and Survey or A	
At proposed prod. zone	1980 FSL and	660 FEL, Sec		MAR 0 9 2005	i	Sec 11,	22S, 24E
Distance in miles and direction	on from nearest town or po	st office*	Q'	CU-MATE!	12.	County or Pa	rish 13. State
<u> </u>	10_mile	s West of Carl	sbad		<u>  Ec</u>	ldy	NM NM
<ol> <li>Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit li</li> </ol>	660 ne, if any)		16.No. of Acres i	n lease	17. Spacin	ng Unit dedica	ated to this well
B. Distance from proposed loc			19. Proposed Dep	oth	20.BLM	/BIA Bond N	lo. on file
to nearest well, drilling, cor			1				
applied for, on this lease, ft.			8600'			NM1307	
.Elevations (Show whether D	OF, KDB, RT, GL, etc.		22. Approximate date work will start* 23. Estimated duration			ed duration	
4006'			3/1/05			30 days	
		24.	. Attachments				
he following, completed in acc	cordance with the requirem	ents of Onshore Oil ar	nd Gas Order No.	1, shall be attached	d to this for	rm:	
Well plat certified by a regi     A Drilling Plan     A Surface Use Plan (if the SUPO shall be filed with the support of	·	•	5. Operate 6. Such o	0 above). or certification.		•	n existing bond on file (see
5. Signuature	1	N	ame (Printed/Typed	<i>d</i> )			Date
/ U Maam		s	Sarah Jordan				1/20/05
Production Analys	it					<del></del>	
approved by (Signature)		N	ame (Printed/Typed				Date
/s/ Ton:	y J. Herrell		/s/	Tony J. H	errell		MAR 0 7 200
FIELD P	MANAGER	Oi	ffice CARL	SBAD F	IELD	OFFIC	E
application approval does not onduct operations thereon.		applicant holds legal	or equitable title				would entitle the applicant  1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowlingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

Conditions of approval, if any, are attached.

Carlebad Controlled Water Basin

APPROVAL SUBJECT TO General requirements and SPECIAL STIPULATIONS ATTACHED

### STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

**Nearburg Producing Company** 3300 North "A" Street, Building 2, Suite 120 Midland, Texas 77905

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No:

NMNM53219

Legal Description of Land:

SHL: Unit I, 1956 FSL and 936 FEL, Sec 11-22S-24E

BHL: Unit I, 1980 FSL and 660 FEL, Sec 11-22S, 24E

Eddy County, New Mexico

Formation(s) (if applicable): Upper Penn, Associated

Bond Coverage:

\$25,000 statewide bond of Nearburg Producing Company

BLM Bond File No:

NM1307

**Drilling Manager** 

#### DISTRICT I 1626 N. PRENCH DR., HOBBS, NM 68240

### State of New Mexico

Energy, Minerals and Natural Resources Department

DISTRICT II
1801 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505 Form C-102
Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

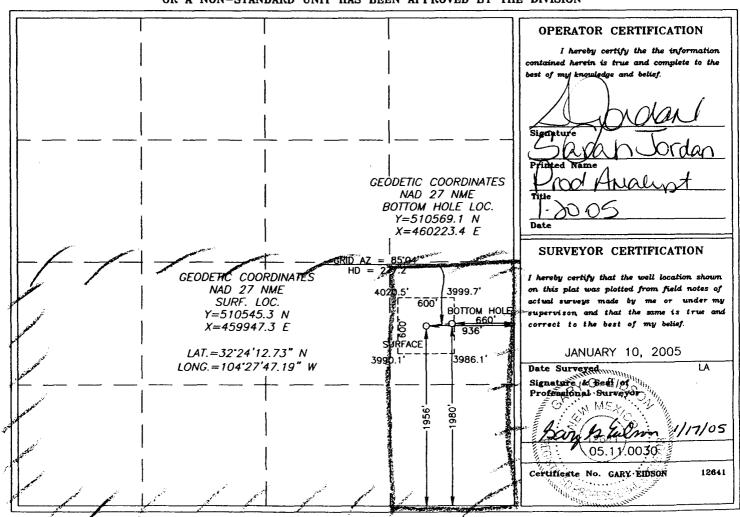
DISTRICT IV WELL LOCATION AND ACREAGE DEDICATION PLAT ☐ AMENDED REPORT 1280 S. ST. FRANCIS DR., SANTA FE, NM 87505 API Number Pool Code Well Mumber **Property Code** Property Name 8 McKITTRICK 11 FEDERAL Operator Name Elevation NEARBURG PRODUCING COMPANY 4006 Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	11	22-S	24-E		1956	SOUTH	936	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
1	11	22-S	24-E		1980	SOUTH	660	EAST	EDDY
Dedicated Acre	s Joint o	r Infill Co	nsolidation (	Code Or	der No.				

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



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 Resource.

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

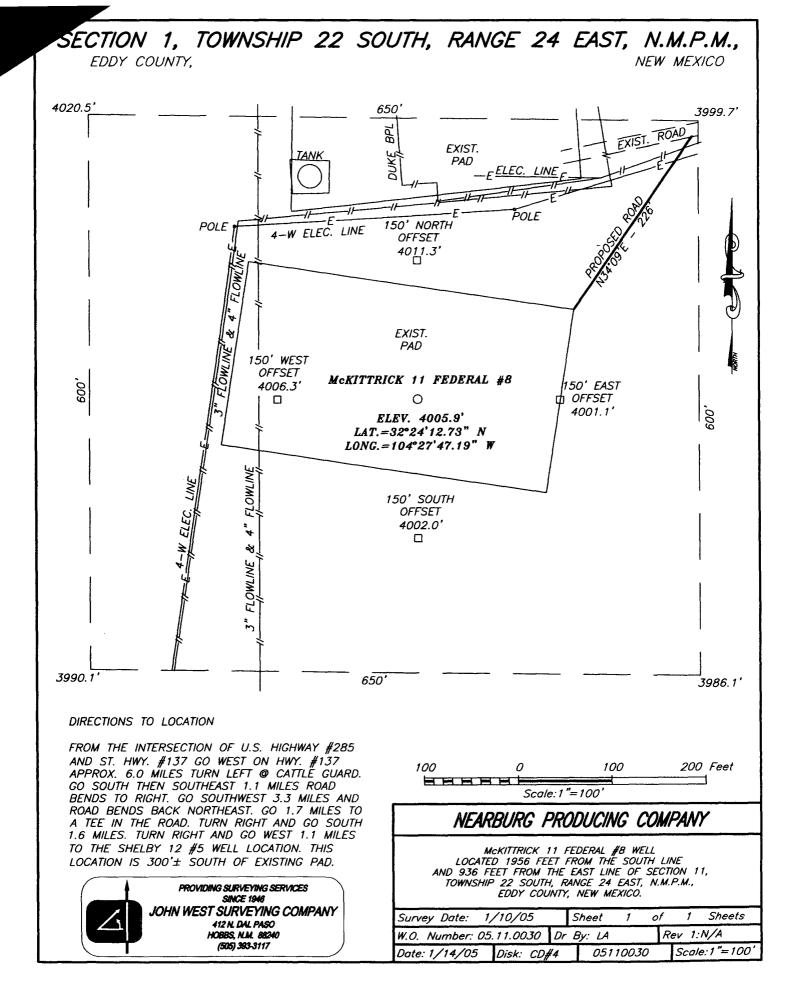
For drilling and production facilities, submit to

Form C-144 March 12, 2004

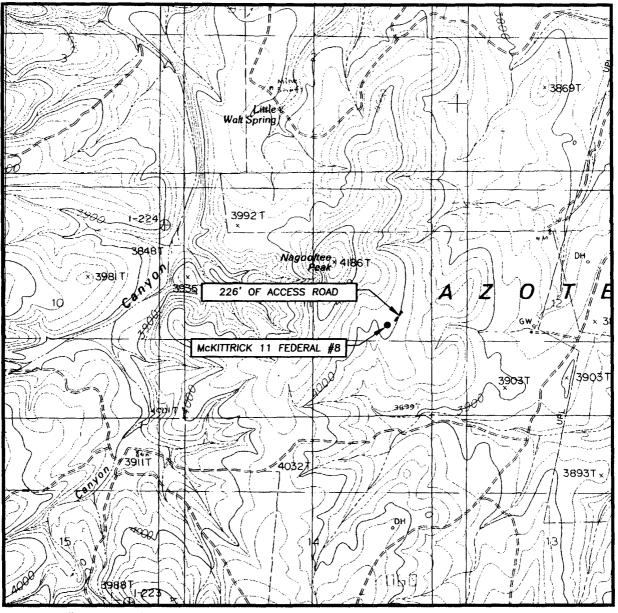
### appropriate NMOCD District Office. For downstream facilities, submit to Santa Fe office.

### Pit or Below-Grade Tank Registration or Closure Is pit or below-grade tank covered by a "general plan"? Yes \( \subseteq No \) \( \subseteq \)

Type of action: Registration of a pit or	below-grade tank X Closure of a pit or below-grade	tank
Operator: Nearburg Producing Company Telephone: 68 Address: 3300 N A St., Bldg 2, Ste 120, Midland, TX	36-8235 e-mail address: sjordan@nearbur	'g.com
Facility or well name: MCKittrick 11 Fed #8 API #: 30-0/5		S p 24F
County: Eddy Latitude Longitude	NAD: 192/[A] 1983_1 Surface Owne	r Federal [A] State Private I Indian
Pit	Polow grade tonk	
Type: Drilling X Production Disposal	Below-grade tank   Volume:bbl   Type of fluid:	
Workover Emergency	Construction material:	
Lined [X] Unlimited	Double-walled, with leak detection? Yes If not	
Liner type: Synthetic [X]Thickness12mil Clay [Volume]		MAR 0 9 2005
bbl	·	O'DO MATERIA
	Less than 50 feet	(20 points)
Depth to ground water (vertical distance from bottom of pit to seasonal high	50 feet or more, but less than 100 feet	(10 points)
water elevation of ground water.)	100 feet or more	( 0 points) X
Wellhead protection area. (Less than 200 feet from a private domestic	Yes	(20 points)
water source, or less than 1000 feet from all other water sources.)	No	
water sources, or ress than 1000 rect from an other water sources.		
Distance to surface water: (horizontal distance to all wetlands, playas,	Less than 200 feet	(20 points)
irrigation canals, ditches, and perennial and ephemeral watercourses.)	200 feet or more, but less than 1000 feet	(10 points)
	1000 feet or more	( 0 points) X
	Ranking Score (Total Points)	0
If this is a pit closure: (1) attach a diagram of the facility showing the pit's re onsite offsite If offsite, name of facility (date. (4) Groundwater encountered: No Yes If yes, show depth belo diagram of sample locations and excavations.	3) Attach a general description of remedial action taken	n including remediation start date and end
I hereby certify that the information above is true and complete to the best of n been/will be constructed or closed according to NMOCD guidelines [X], a Date: 1/20/05  Printed Name/Title: Sarah Jordan, Production Analyst  Your certification and NMOCD approval of this application/closure does not reotherwise endanger public health or the environment. Nor does it relieve the o regulations.	general permit , or an (attached) alternative OC	D-approved plan .
Approval: MAR 9 2005  Printed Name/Title:	Signature:	1



### LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

U.S.G.S. TOPOGRAPHIC MAP

AZOTEA PEAK, N.M.

CONTOUR INTERVAL: AZOTEA PEAK, N.M. – 20'

SEC. 11 TWP. 22-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

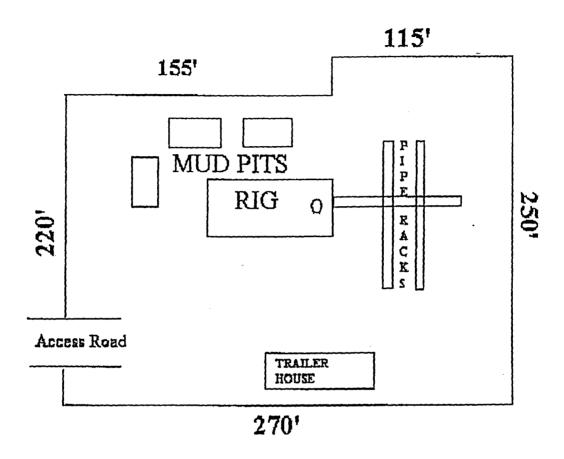
DESCRIPTION 1956' FSL & 936' FEL

ELEVATION 4006'

OPERATOR NEARBURG PRODUCING COMPANY
LEASE MCKITTRICK 11 FEDERAL



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



### ATTACHMENT TO FORM 3160-3 MCKITTRICK 11 FEDERAL #8

SHL: 1956 FSL AND 936 FEL BHL: 1980 FSL AND 660 FEL SECTION 11, T22S, R24E EDDY COUNTY, NEW MEXICO

### DRILLING PROGRAM

### 1. GEOLOGIC NAME OF SURFACE FORMATION

Quaternary

### 2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

Bone Spring

3660'

Wolfcamp Shale

7120'

### 3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL, OR GAS

Cisco/ Canyon

7885'

### 4. CASING AND CEMENTING PROGRAM

Casing Size	From To	<u>Weight</u>	<u>Grade</u>	<u>Joint</u>
9-5/8"	0'-1,500'	36#	J55	STC
7"	0' - 8,600'	23 & 26#	K55, N80	LTC & BTC

Equivalent or adequate grades and weights of casing may be substituted at time casing is run, depending on availability.

We plan to drill a 14-3/4" hole to equal 1550'. 9-5/8" casing will be cemented with 700 sxs Class "C" or volume necessary to bring cement back to surface.

8-3/4" hole will be drilled to 8,600' and 7" production casing will be cemented with approximately 1000 sxs of Class "H" cement circulated to surface.

# MCKITTRICK 11 FEDERAL #8 Page 2

### 5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL

The BOP stack will consist of a 3,000 psi working pressure, dual ram type preventer and annular.

A BOP sketch is attached.

### 6. TYPES AND CHARACTERTICS OF THE PROPOSED MUD SYSTEM

Spud and drill to 1500' with fresh water mud for surface string. The production section from 1,500' to 8,600' will be 8.3 ppg Fresh Water system with mud weight sufficient to control formation pressures.

### 7. AUXILLARY WELL CONTROL AND MONITORING EQUIPMENT

None required.

### 8. LOGGING, TESTING, AND CORING PROGRAM

DLL/CNL/LDT/CAL/GR logging is planned. Drill stem tests, cores and sidewall cores are possible.

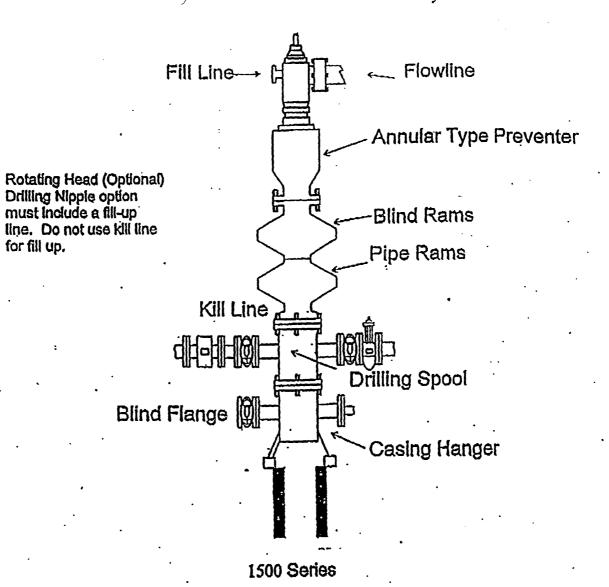
# 9. <u>ABNORMAL CONDITIONS</u>, <u>PRESSURES</u>, <u>TEMPERATURES & POTENTIAL HAZARDS</u>

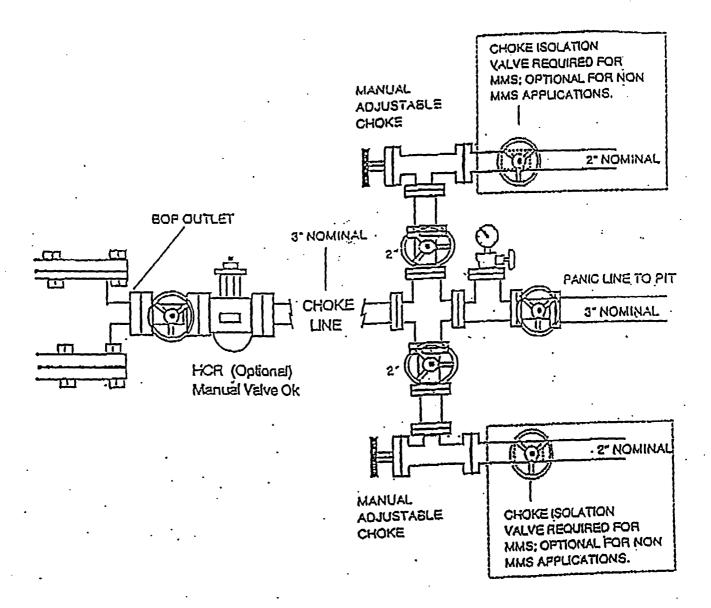
None anticipated.

BHP expected to be 1,100 psi.

### 10. ANTICAPATED STARTING DATE:

Is planned that operations will commence on March 1, 2005 with drilling and completion operation lasting about 30 days.





### SURFACE USE AND OPERATIONS PLAN FOR

### **DRILLING, COMPLETION, AND PRODUCING**

### NEARBURG PRODUCING COMPANY MCKITTRICK 11 FEDERAL #8 SECTION 11-T22S-R24E EDDY COUNTY, NEW MEXICO

### **LOCATED**

13 miles West of Carlsbad, NM

### OIL & GAS LEASE

NMNM53219

### RECORD LESSEE

**Nearburg Exploration Company** 

### **BOND COVERAGE**

\$25,000 statewide bond of Nearburg Producing Company

### **ACRES IN LEASE**

2236

### **GRAZING LEASE**

Rockhouse Ranch

### **POOL**

Indian Basin; Upper Penn, Associated

### **EXHIBITS**

- A. Area Road Map
- B. Drilling Rig Layout
- C. Vicinity Oil & Gas Map
- D. Topographic & Location Verification Map
- E. Well Location & Acreage Dedication Map

This well will be drilled to a depth of approximately 8,600'.

### **MCKITTRICK 11 FEDERAL #8**

### Page 2

### 1. EXISTING ROADS

- A. Exhibit A is a portion of a section map showing the location of the proposed well as staked.
- B. Exhibit C is a plat showing existing roads in the vicinity of the proposed well site.

### 2. ACCESS ROADS

### A. Length and Width

The access road will be built and is shown on Exhibit D.

### B. Surface Material

Existing.

### C. Maximum Grade

Less than five percent

### D. Turnouts

None necessary.

### E. Drainage Design

Existing.

### F. Culverts

None necessary.

### G. Gates and Cattle Guards

None needed.

### 3. LOCATION OF EXISTING WELLS

Existing wells in the immediate area are shown in Exhibit C.

### 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

Necessary production facilities for this well will be located on the well pad.

### 5. LOCATION AND TYPE OF WATER SUPPLY

It is not contemplated that a water well will be drilled. Water necessary for drilling will be purchased and hauled to the site over existing roads shown on Exhibit D.

### 6. METHODS OF HANDLING WASTE DISPOSAL

- A. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- B. Water produced during tests will be disposed of in the drilling pits.
- C. Oil produced during tests will be stored in test tanks.
- D. Trash will be contained in a trash trailer and removed from well site.
- E. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

### 7. ANCILLARY FACILITIES

None required.

### 8. WELL SITE LAYOUT

Exhibit B shows the relative location and dimensions of the well pad, mud pits, reserve pit, and trash pit, and the location of major rig components.

### 9. PLANS FOR RESTORATION OF THE SURFACE

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. The well site will be cleaned of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.
- B. After abandonment, all equipment, trash, and junk will be removed and the site will be clean.

### 10. OTHER INFORMATION

### A. Topography

The land surface at the well site is rolling native grass with a regional slope being to the east.

### B. Soil

Topsoil at the well site is sandy soil.

### **MCKITTRICK 11 FEDERAL #8**

### Page 4

### C. Flora and Fauna

The location is in an area sparsely covered with mesquite and range grasses.

### D. Ponds and Streams

There are no rivers, lakes, ponds, or streams in the area.

### E. Residences and Other Structures

There are no residences within a mile of the proposed well site.

### F. Archaeological, Historical, and Cultural Sites

None observed on this area.

### G. Land Use

Grazing

### H. Surface Ownership

BLM (USA)

#### 11. **OPERATOR'S REPRESENTATIVE**

H. R. Willis 3300 North "A" Street, Bldg 2, Suite 120 Midland, Texas 79705

Office: (432) 686-8235 Home: (432) 697-2484

#### **CERTIFICATION** 12.

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 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 Nearburg Producing Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date

**Drilling Manager** 

# HYDROGEN SULFIDE DRILLING OPERATIONS PLANS NEARBURG PRODUCING COMPANY McKITTRICK 11 FEDERAL #8

### 1. HYDROGEN SULFIDE TRAINING

- A. All regularly assigned personnel, contracted or employed by Nearburg Producing Company, will receive training from a qualified instructor in the following areas prior to commencing drilling potential hydrogen sulfide bearing formations in this well:
  - 1. The hazards and characteristics of hydrogen sulfide (H2S).
  - 2. The proper use and maintenance of personal protective equipment and life support systems.
  - 3. The proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
  - 4. The proper techniques for first aid and rescue procedures.
- B. In addition, supervisory personnel will be trained in the following areas:
  - 1. The effects of H2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
  - 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
  - 3. The contents and requirements of the H2S Drilling Operations Plan.
- C. There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

# HYDROGEN SULFIDE DRILLING OPERATIONS PLANS PAGE 2

### 2. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

### A. Well Control Equipment:

- 1. Flare line with continuous pilot.
- 2. Choke manifold with a minimum of one remote choke.
- 3. Blind rams and pipe rams to accommodate all sizes with properly sized closing unit.
- 4. Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head and flare gun with flares as needed.

### B. Protective Equipment for Essential Personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas, as indicated on well site diagram.

### C. H2S Detection and Monitoring Equipment:

- 1. Two portable H2S monitors positioned and location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- 2. One portable SO2 monitor positioned near flare line.

### D. Visual Warning systems:

- 1. Wind direction indicators as shown on well site diagram.
- 2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.

# HYDROGEN SULFIDE DRILLING OPERATIONS PLANS PAGE 3

### E. Mud Program

- 1. The Mud Program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weights, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.
- 2. A mud-gas separator will be utilized as needed.

### F. Metallurgy

All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and line and valves shall be suitable for H2S service.

### G. Communication

- 1. Cellular telephone communications in company vehicles and mud logging trailer.
- 2. Land line (telephone) communications at area office.

### H. Well Testing

Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing in an H2S environment will be conducted during the daylight hours.

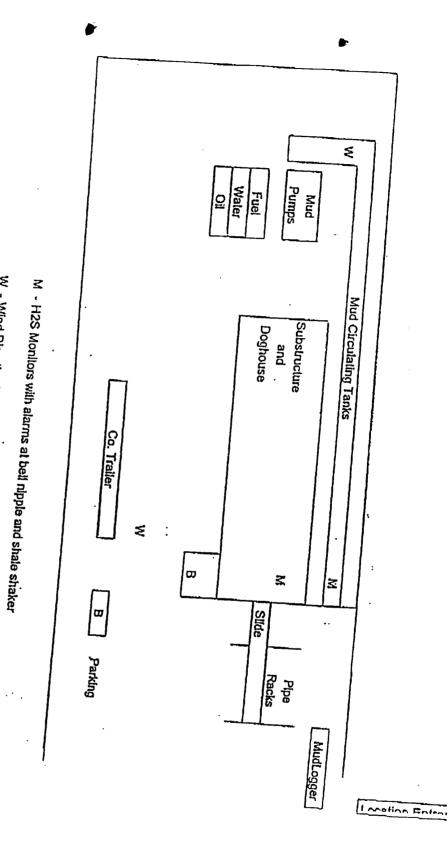
### WARNING

# YOU ARE ENTERING A H2S AREA AUTHORIZED PERSONNEL ONLY

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH NEARBURG SUPERINTENDENT AT MAIN OFFICE

### **NEARBURG PRODUCING COMPANY**

(432) 686-8235



W - Wind Direction Indicators

B - Sale Briefing areas with caution signs and protective breathing equipment.

Prevailing Wind Directions; Summer - South/Southwest Winler - NorthMorthwest

### PREPARED FOR:

# Mr. Butch Willis NEARBURG PRODUCING CORPORATION

Midland, Texas

RECEIVED

MAR 0 9 2005

McKittrick 11 Federal #8

Section 11 T-22-S R-24-E Eddy County, New Mexico

Prepared by: Randy Auburg January 20, 2005 January 20, 2005

Mr. Butch Willis Nearburg Producing Corporation 3300 N. A St. Suite 2120 Midland. Texas 79705-5402

Dear Mr. Willis,

Thank you for the opportunity to submit our drilling fluid recommendations for McKittrick 11 Federal # 8 in Eddy County, New Mexico. These recommendations are based on information from your office, offset well data, and our knowledge of the area.

Of particular concern in this area is the potential for lost circulation and differential sticking in the surface hole and the Upper Penn formation. H<sub>2</sub>S may be present in the Bone Springs and Upper Penn. Potential problems are discussed in the "Drilling Fluid Program" section of this proposal. We have extensive experience in this area and have included a letter from one of our customers for your review.

We estimate drilling time for this well to be 14 days at an estimated no service cost of \$4,000.00 to \$5,000.00 if severe lost circulation is not encountered. All support services for this well, including engineering, warehousing and trucking, is in Hobbs, New Mexico.

Sincerely,

Randy Auburg
Technical Services Manager
Permian Basin

### **DRILLING FLUID SYNOPSIS**

### **NEARBURG PRODUCING CORPORATION**

MCKITTRICK 11 FEDERAL # 8
Section 11
T-22-S
R-24-E
Eddy County, New Mexico

### **CASING**

9 5/8" at 1,500'

5 1/2" at 8,600'

DEPTH	MUD WEIGHT	VISCOSITY	FLUID LOSS	DRILL SOLIDS	COMMENTS
0-1,500'	8.4 to 8.5	28 to 29	No Control	<1%	Fresh Water, Fresh Gel Sweeps Lime, Paper
1,500'-8,600'	8.4 to 8.5	28 to 29	No Control	<1%	Fresh Water, Star NP-110, Paper, Lime Starch if needed

### **ESTIMATED FORMATION TOPS**

495' **SAN ANDRES GLORIETA** 2,018' **YESO** 2,110' **BONE SPRINGS** 4,600' **WOLFCAMP** 7,548' PENN (CISCO) 7,775' **CANYON** 7,895' TD 8,600'

### RECOMMENDED CASING PROGRAM

9 5/8" at 1,600'

5 1/2" at 8,600'

### RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE
0-1,500'	8.4-8.5	28-29	No Control

Spud with fresh water circulating through the working pits. Sweep the hole with Fresh Water Gel flocculated with Lime mixed at a 10 to 1 ratio. Use Paper for seepage control. There is a potential for lost returns in this interval. If lost returns are encountered and circulation cannot be regained after pumping several viscous LCM pills, you should consider dry drilling to casing point. While dry drilling, we recommend periodically pumping viscous LCM sweeps to prevent solid accumulation in annulus.

DEPTH	WEIGHT	VISCOSITY	FILTRATE
1,500'-8,800'	8.4-8.5	28-29	No Control

Drill out from under surface with fresh water circulating through the reserve pit. Use Star NP-110 for sweeps and to control solids. Use Lime for 9.0 to 10.0 pH. Paper should be used for seepage. The hole should be swept every 200', or as needed, with pre-hydrated Fresh Water Gel. This will minimize solids buildup in the annulus and reduce the possibility of lost circulation while drilling the Upper Penn and other under pressured formations. There is a potential for lost returns in this interval. If lost returns are encountered and circulation cannot be regained after pumping several viscous LCM pills, you should consider dry drilling to casing point. While dry drilling, we recommend periodically pumping viscous LCM sweeps, to prevent solid accumulation in annulus. There is a possibility of encountering  $H_2S$  from the Bone Springs as well as the Upper Penn. If  $H_2S$  is encountered, we recommend additions of an  $H_2S$  Scavenger for personnel safety and a Filming Amine to protect the drill pipe. We recommend utilizing a  $\pm 200$  bbl premix pit for sweeps and LCM pills.

Note: we recommend a blend of Fiber Plug, Nut Shell, Maxi-Seal (Chem-Seal), and Mica may be used as LCM in this interval.

If a drilling fluid is desired for evaluation of this interval, we recommend returning to the working pits and utilizing a Star NP-110/Starch type fluid. Use Starch to reduce the API fluid loss below 15cc. Maintain pH at 9.0 to 10.0 with Lime. If additional viscosity is desired we recommend using Fresh Gel. This fluid should be sufficient for evaluation in this area.

Estimated Drilling Fluid Cost: \$4,000.00 to \$5,000.00 Estimated Drilling Days: 13 to 16

Cost is based on a 1,000 bbl system and does not reflect lost circulation, abnormal pressure, H<sub>2</sub>S, unstable hole conditions requiring elevated viscosities or mud in production interval.

# AMBAR LONE STAR FLUID SERVICES LOST CIRCULATION PROCEDURES

Loss of circulation is a possibility on this well. Although each well is different, there are some basic procedures and drilling practices that can aid in reducing the severity or, in some cases, prevent lost circulation. Below is a list, which may prove helpful.

- 1. Maintain viscosities as low as possible and still clean the hole. We recommend a viscosity of 28 to 29 on this well.
- 2. Maintain mud weights as low as possible without jeopardizing safety.
- 3. Use slow trip speeds to prevent swabbing and surging.
- 4. Break circulation in stages with reduced pump strokes while tripping in the hole.
- 5. Rotate pipe prior to and while tripping in the hole.
- 6. Use an optimum hydraulics program.

Severe seepage to total loss of circulation may occur even when the above procedures are followed. For severe seepage, we recommend circulating pills (50-100 bbls. depending on hole size) containing 10-30 ppb of various (fibrous and flake) lost circulation material. It would be helpful to reduce pump rates until full returns are established. Once full returns are regained, normal pump rates should be returned to in stages. The inclusion of lost circulation material in the entire system is recommended only if the above procedures do not adequately seal off the loss zone.

For total loss of circulation, we recommend pulling enough stands to place the bit above the loss zone. A viscous pill containing the appropriate type of loss circulation material should be spotted. The size of the pill should be determined by hole size and should contain at <u>least</u> 30 ppb lost circulation material. Several attempts should be made before considering other alternatives. After returns are regained, we recommend staging back to bottom using the procedure outlined above.

If returns are not fully re-established, consideration should be given to dry drilling while pumping periodic sweeps to ensure hole cleaning.

# PERMIAN BASIN REGION PERSONNEL

MIDLAND OFFICE 800-669-7146

Larry Wadzeck Regional Manager Permian/MidCon

Carlton Crownover Engineering Manager

Randy Auburg Technical Service Manager

Gerald Huff Regional Sales & Marketing

WEST TEXAS ENGINEERING 800-669-7146

Jim Paysinger Senior Sales and Service Engineer

Tom O'Reilley Senior Sales and Service Engineer

Joseph Abraham Sales and Service Engineer

Blake Arthur Sales and Service Engineer

NEW MEXICO ENGINEERING 800-669-7146

Gregg Scarbro Senior Sales and Service Engineer

Marshall Fleming Senior Sales and Service Engineer

Manny Heald Sales and Service Engineer

Clay Gamble Sales and Service Engineer

### **Nearburg Producing Company**

3300 N A St., Bldg 2, Suite 120 Midland, TX 79705

# Hydrogen Sulfide (H2S) Contingency Plan

For

McKittrick 11 Federal #8 SHL: 1956 FSL and 936 FEL BHL: 1980 FSL and 660 FEL

Sec 11, 22S, 24E Eddy County, New Mexico RECEIVED

MAR 0 9 2005

OOD-AMTERIA

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### 1. PURPOSE

This plan is intended to protect the health and safety of the public, contractors and Nearburg Producing Company (NPC) personnel should an unanticipated release of a potentially hazardous volume of Hydrogen Sulfide (H2S) occur.

#### Further to:

- Comply with the Bureau of Land Management's (BLM) Onshore Oil and Gas Operations Onshore Oil and Gas Order No. 6, Hydrogen Sulfide Operations (43 CFR Part 3160).
- Comply with the State of New Mexico Oil Conservation Division's (NMOCD) rule 19 NMAC 15.C 118.
- Assure proper notification of the appropriate parties and agencies.

### 2. SCOPE

The provisions of this document are intended to address Hydrogen Sulfide (H2S) releases and H2S emergencies at Nearburg Producing Companies production batteries and all surrounding operated field locations in the McKittrick Hills Field. Facilities for which calculations indicate a potential hazardous volume of H2S could occur have additional site specific response information and radius of exposure drawn on the attached plat map. The field is located approximately 20 miles west of Carlsbad, New Mexico (Eddy County).

This plan is intended to be used in conjuction with the Emergency Response plan that is available at the Artesia Field Office and applies to RMS Level 1 incidents.

### 3. **DEFINITIONS**

All Clear - Notification of effected personnel, by the response leader, that the incident has ended and the area is safe to re-enter.

A Potentially Hazardous Volume - a volume of Hydrogen Sulfide (H2S) gas of such concentrate that:

- The 100-ppm ROE includes any public area.
- The 500-ppm ROE includes any public road.
- The 100-ppm ROE exceeds 3,000 feet.

Facility – Equipment involved in producing, processing, or transporting natural gas and/or crude oil, including the property to the edge of the pad or fence.

Hydrogen Sulfide Gas (H2S) — is extremely flammable, colorless, poisonous gas that may occur naturally as a component of production streams, such as crude oil, produced water and natural gas. At low concentrations it has a rotten egg odor, but at higher concentrations deadens the sense of smell. Its specific gravity is heavier than air giving it a tendency to collect in low-lying areas on still days. The permissible exposure limit is 10 ppm and the short term exposure limit is 15 ppm. It is considered to be immediately dangerous to life and health at 300 ppm. H2S is readily dispersed in air and is water soluble.

ICS (Incident Command System) – A team based concept for emergency response in which roles and responsibilities are predetermined.

**Incident Commander (IC)** – Senior Nearburg Producing Company employee in charge of an emergency response.

Incipient Stage Fire – A fire in the beginning or very early stages of development, which can be effectively extinguished by one or more persons with portable fire fighting equipment.

Muster Site – A pre-defined staging or meeting area.

RMS Level I – an emergency that can be reasonably addressed by Artesia Area Office in which the incident occurs and that can be resolved in approximately two days or less.

**ROE** (Radius of Exposure) – The radius constructed with the point of escape (of gas) as its starting point and its length calculated using the Pasquill-Gifford derived equation or computer modeling where the H2S concentration is greater than 10%.

PPM - Parts per Million

**Public Area** – Any building or structure that is not associated with the well, facility or operation for which the ROE is being calculated and that is used as a dwelling, office, place of business, church, school, hospital or government building, or any portion of a park, city, town, village, or designated school bus stop or other similar area where members of the public may reasonably be expected o be present.

**Public Road** – Any federal, state, municipal or county road or highway.

Serious Incident – An event which results or has the potential to result in severe personal injury and/or significant equipment damage.

Sulfur Dioxide (SO2) — A heavy colorless toxic gas that is formed when hydrogen sulfide is burned. It has a pungent odor and is a respiratory irritant. The permissible exposure limit is 2 ppm, the short rem exposure limit is 5 ppm. It is considered to be immediately dangerous to life and health at 100 ppm. SO2 is readily dispersed in air and is water soluble.

Total Personnel Evacuation – An e vacuation of all persons (contract employees, or visitors) from the emergency area to a muster area.

### 4. THE PLAN

### Training:

All personnel (company, contractors and sub-contractors) working in the field for NPC are required to complete hydrogen sulfide training before beginning work and annually thereafter.

Training on the contents of this plan shall be provided to all NPC and appropriate contract personnel working for NPC:

- whenever the employees' responsibilities or designated actions under the plan change,
- whenever the contents of the plan are changed/revised
- whenever a new employee begins employment, and
- periodically as needed for all employees.

Nearburg Producing Company supervision is responsible for this training.

### Orientation:

All persons visiting or working at Indian Basin shall receive an orientation covering the following minimum items:

	What types of emergencies are possible,
	What the emergency evacuation alarm sounds like in the gas plant,
	How to report an incident/emergency,
	Who will be in charge during an emergency,
	How to safely evacuate the plant, and
П	Where to assemble so that all persons can be accounted for.

The NPC representative responsible for the contractors or visitors shall conduct the orientations and shall document attendees and dates.

### **H2S Monitors:**

All personnel working at the Indian Basin are required to wear personal H2S monitor at all times when working in the plant or field. Monitors should have a vibrating alarm if used in high noise areas.

### **Activation:**

Phase I – activated when:

- 1. Sustained H2S concentration reaches 10 parts per million (ppm) in any work area and the source is not readily identified and/or controllable.
- 2. Continuous H2S levels are detected at 10 ppm (or greater) at any public road, near an occupied residence or bus stop, and the source is not readily identified and/or immediately controlled.

### Phase II - activated when:

- 1. A potentially hazardous volume of H2S is detected.
- 2. When sustained H2S concentrations exceed 50 ppm at any facility boundary.

### Phase I:

Upon discov	ery o	on-site personnel should:
		Make others on-site aware of the presence of H2S and leave the area upwind or
		crosswind to a safe location. (Pre-determine if a pre-job tailgate meeting was conducted). Prevent unauthorized persons from entering the area. Request assistance if needed.
		If a residence or other public area is in the vicinity, monitor for H2S to ensure exposure is less than 10 ppm. Notify supervisor if higher exposures are noted or if any other
		questions arise about steps necessary to protect these sensitive areas. If considering re-entering the area to assess the H2S source, ensure you have been properly trained to respond. Use an H2S monitor with digital display (preferably a multigas monitor) and have a supplied air respirator (SAR) and back up person with SAR readily available. Consider notification of supervisor if appropriate.
		Proceed with caution. If H2S concentration reaches 10 ppm in your breathing zone, back out and use SAR to re-enter. If H2S concentration reaches 50 ppm at the facility boundary, immediately notify supervision.
		If source can be safely controlled, monitor area to ensure H2S levels are below 10 ppm. End response here and sound all clear to allow others to re-enter the area. Report length of release and volume to supervisor.
		If the source of H2S cannot be identified and/or controlled, or if you cannot do so with out exposing yourself to danger, leave the area to a safe distance.
		Notify supervision.  Continue to monitor for H2S and maintain site security until instructed be supervision to
	П	do otherwise.
Supervision:		
		Gather necessary information to determine the course of action and level of response.  Mobilize any additional man power or equipment necessary.
		Ensure Phase II measures are implemented if appropriate.
		Continue to monitor situation until incident is over.
		Make notifications if required.
		Complete reports if required.  Investigate as indicated.
<u>Phase II</u>		
Upon discov	ery o	on-site personnel should:
		Make others on-site aware of the presence of H2S and leave the area upwind or crosswind to a safe location. (Pre-determined if a pre-job tailgate meeting was conducted).
		Prevent authorized persons from entering the area.
		Notify Supervisor.
Supervision:		
		Initiate the <u>Incident Command System</u> as deemed appropriate.  Mobilize the resources necessary to maintain site security and provide for the protection of personnel and the public.
		Issue warnings to all NPC personnel by radio and/or phone (IB Contact List) to make
		them aware of the incident and its location. Have non-essential personnel leave the area. If deemed necessary, order a total personnel evacuation of the area.

	Notify non-company personnel known to work or reside in the area (IB Contact List). If necessary to ensure their safety, dispatch NPC personnel with the appropriate monitor, supplied air respirators and means of communication to these locations. (Appendix B)
	Have NPC personnel set up road blocks to prevent unauthorized entry into impacted areas until relieved by law enforcement or other authorized personnel.
	Make all appropriate notifications to NPC, Federal, State and local authorities.
	When the release has been contained and monitoring indicates the area is safe to re-enter, terminate operations and sound the all clear.
	Complete records if required.
	Investigate as indicated.
	For spills, well blowouts, fires, natural disasters and terrorist or bomb threats
All other person	nel not involved in the immediate response:
	If a total evacuation is ordered, report to the incident command center or nearest muster site to which you have safe access. (See Appendix A for muster site locations)
	Ensure all contract personnel working for you (or in your area) are accounted for and have them report to a safe muster site.
	Senior employee at each muster site should make a roster of all personnel reporting to that muster site and be prepared to make it available to the incident commander (IC).

### **Ignition of H2S:**

While no uncontrollable release of H2S is anticipated, should ignition of gas be necessary for the protection of personnel or the public, the determination would be made by the NPC Incident Commander. The method of ignition will maintain the safety of the person performing this task as the primary concern. The most likely method would be the use of a flare gun from a safe distance.

If this becomes necessary, monitoring will include sulfur dioxide (SO2) in addition to H2S.

6. APPROVALS

Approved by:

Name: Holling Manager

Date:

# NEARBURG PRODUCING COMPANY REGULATORY CONTACTS

A CONTRACTOR OF THE CONTRACTOR	Contact Name	- 1.200 (1.1000 (1.100 (1.100 (1.100 (1.100 (1.100 (1.100 (1.100 (1.100 (1.100				
Agency	First	Last	Division/Area	Main Phone#	Cell Phone	Home Phone #
NMOCD	Emergency Number		District 2	505-746-4302		
NMOCD	Field Rep On-Call		District 2	505-939-8622		
NMOCD	Tim	Gum	District 2	505-748-1283	505-626-0824	505-324-1387
NMOCD	Mike	Stubblefield	District 2	505-748-1283	505-626-0831	505-746-6422
NMOCD	Gerry	Guye	District 2	505-748-1283	505-626-0843	505-887-3254
NMOCD	Phil	Hawkins	District 2	505-748-1283	505-626-0836	505-746-9272
NMOCD	Bryan	Arrant	District 2	505-748-1283	505-626-0830	505-748-2092
NMOCD	Lori	Wortenberhy	Santa Fe Division Ofc.	505-827-7131	505-476-3460	505-466-0134
NMOCD	Ed	Martin	Santa Fe Division Ofc.	505-827-7131	505-476-3492	505-685-4056
NMOCD	Roger	Anderson	Santa Fe Division Ofc.	505-827-7131	505-476-3490	505-471-2017
NM State Police			District 3, Roswell	505-827-9312		
NM State Police			Sub-District 3, Roswell	505-622-7200 (ca	all this # for dispar	tch to our area)
BLM			Carlsbad	505-887-6544		
<b>US Coast Guard</b>			National Response Center	800-424-8802		
NMED			Air Quality Bureau	505-827-1494		
	State Emergency Re	esponse Cent	er	505-827-9126		
LEPC	Local Emerg. Planni	ng Commissi	on - Eddy County	505-885-2111		
NM OSHA	New Mexico OSHA	Ofc.	4	505-827-2850		

### **EMERGENCY SERVICES**

Service Provider			r i de la proposició de l La proposició de la proposició
Service Provider	Description	Main Phone	
General Emergency	Police, Fire, Ambulance	911	
Carlsbad Police, Fire, Ambulance Service		505-885-2111	
Artesia General Hospital	Medical Services	505-748-3333	
Carlsbad Fire Dept.	Fire Control	505-885-3124	
Artesia Fire Dept.	Fire Control	505-746-2701	
Happy Valley Fire Dept.	Fire Control	505-885-1982	
NM State Police	Sub-District 3, Carlsbad		
NM State Police (Dispatcher)	District 3, Roswell	505-622-7200	
Eddy County Sheriff	Law Enforcement	505-887-7551	

### NEARBURG PRODUCING COMPANY EMERGENCY RESPONSE PLAN

Position	Office Phone	Cell Phone #	Home Phone #
Drilling Superintendent		j.	
Butch Willis	432-686-8235 (223)		
Production Superintendent			e relea
Matt Lee	505-746-0422	505-365-6662	505-746-0932
Operations			10.00 The consequence of the con
Roger King	505-746-0422	505-361-3605	505-885-3605
Rick Foutch	505-746-0422	505-361-4211	505-887-7844
Jerry Stark	505-746-0422	505-365-4672	505-746-3862
Planning Section			100 PM
Fred White	214-739-1778	469-644-1326	972-931-8845
Bob Shelton	432-686-8235 (214)	432-682-3100	432-528-6134
Public Affairs			
Bob Shelton	432-686-8235 (214)	432-682-3100	432-528-6134

# AREA RESIDENTS AND OFFSET OPERATIONS

Location Desciption	Contact	Title	Address	City/ST/Zip	Phone 1	Cell	Location Info.
4TK + (Boles)	Wilkie, Mark & Sandi		1073 Marathon Rd.	Carlsbad, NM 88220	505-457-2022		
Foster Ranch	Foster, John		P.O. Box 103	Artesia, NM 88211-0103	505-457-2165		
Forrest Lee Ranch	Lee, Dean		P.O. Box 89	Lakewood, NM 88254	505-457-2301		Trailer house near NIBU 24
Gissler Ranch	Cox, Billy		344 Pinderosa Pine	Carlsbad, NM 88220	505-457-2397		
Gregory's	Gregory, Wayne		617 Queens Hwy.	Carlsbad, NM 88220	505-457-2245		
HH Ranch	Houchtaling, Harold		P.O. Box 234	Artesia, NM 88211-0234	505-457-2245		
Howell Ranch	Howell, Richard		P.O. Box 94	Lakewood, NM 88254	505-457-2602		
Kincaid Ranch	Kincaid, Gene		2913 Octotilly Canyon Dr.	Carlsbad, NM 88220	505-887-6918		
Kincaid Ranch	Kincaid, Hugh		2911 Octotilly Canyon Dr.	Carlsbad, NM 88220	505-885-9458		
							Lives at ranch house just E of Hwy 137 About 2 miles past mile marker 42 towrds
Kincaid Ranch	Marbauch, Jim		1762 Qureen Hwy.	Carlsbad, NM 88220	505-457-2233		Queens.
Old Jones Ranch	Lasiter, Rick				505-457-2108		
Schafer Ranch	Biebelle, Stacey		l 646 Qureen Hwy.	Carlsbad, NM 88220	505-457-2360		House near low water crossing on Hwy 137
Patsy's old house	DeMoss, Neil				euou		
Chevron Oil	Boles, Randy					505-390-7232	
Chevron Oil	Angel, Kenneth					505-390-1540	
Devon	Daniel				505-390-5850		
Devon	Crosbey, Owen				505-748-7749		
Devon	Huber, Mark				505-748-5502		
Devon	Canada, Don				505-748-5503		
Devon	Brady				505-390-5431		
Devon	Huber, Joe	Superintendent			505-390-5438		
Devon	"Doghouse"				505-457-2613		
Duke Energy	Lamb, Johnny	Foreman			505-390-2791		
Duke Energy	Main Office		Carlsbad		505-628-0282		
Duke Energy	Valenzuela, Oscar				505-910-4675		
El Paso	Jacquez, David	Gas Measurement			505-857-2158		
KMG (Kerr McGee)	Deese, Tommy	Superintendent			505-234-2703	505-706-3423	
KMG (Kerr McGee)	Chalker, Andy	Prod. Foreman			505-234-2703	505-910-0342	
KMG (Kerr McGee)	Hess, Bobby	Team Leader			505-234-2703	505-706-3543	
KMG (Kerr McGee)	Wilson, James						
KMG (Kerr McGee)	Brannon, Steve				505-390-1540	505-706-3669	
Yates Petroleum (Agave)	Main Office				505-784-1471		
$\neg$	Johnson, Bill	Foreman			505-748-6816	505-365-4615	
Yates Petroleum (Agave)	Moorehead, Robert				505-748-6815	505-365-4840	



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON** 

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

March 10, 2005 Nearburg Producing Company 3300 N. "A" St, Bldg 2, Suite 120 Midland, TX 79705 Attn: Sarah Jordan

Re:

Nearburg Producing Company: McKittrick '11' Federal # 8, located in Unit I

(1956' FSL & 936' FEL, surface location) of Section 11, Township 22 South, Range 24 East,

Eddy County, New Mexico, NMPM API # 30-015-33990

Dear Sarah,

In regards to conditions for approval of the above captioned well, the New Mexico Oil Conservation Division (NMOCD) will require the following:

This is for Nearburg Producing Company to take samples from the flow line of the drilling mud every 100' in order to determine the chloride levels from the surface casing down through the setting depth of the surface casing projected to be @ 1500'.

The results of this data are to be submitted to the NMOCD in Artesia and the Bureau of Land Management in Roswell.

Please call our office if you have any questions regarding this matter.

Respectfully yours,

Bryan G. Arrant PES

CC:

John Simitz-Gelogogist-Bureau of Land Management/Roswell

Well File



### DRILLING FLUID REPORT WATER BASED FORM 24 HOUR PHONE

1-800-669-7146

WATER-BASED MUD REPORT

1 Measured D Measured Depth Report # LSM# 4,033 ft TVD 4,033 ft Present Activity TOOH 3/28/2005 Date Spud Date

Report for	Operator	_						<del></del>		<del></del>				[	Date			TOOH	
Month   Mont	Орегатог				N	EARBU	RG		Contr	actor	F	PAT	TERS	ON-	ITI		Rig #	55	
Well Name and Mo.   State   Dec.   Part   CASANO   MILD VOLUME   PUMP CATA   CRECULATED XATE   Catalog	Report for			-		ROY	,		Repo	rt for	**	TEEL GENSON					Sec-	Sec-T-R or Abs	
MERTTRICK FED 88  ORLING SERVEY  OR	Well Name and No.					1	Field or I	Slock								<u> </u>			
DRILLING ASSEMENT   CASSIGN   MAD VOLUME   FUND PATA   GRICULATION DATA						В		, , , , , , , , , , , , , , , , , , , ,	·		001	iii <b>iy</b> , i			snore Ar	24	State	NM	
5.3	DRILI	LING AS	SE	MBLY	·		CASING		ML	D VOLUME		P				C	RCULATIO	N DATA	
PF Size		14 14	Je	ts 1	4	Surface	set @	I.D.	Annu	Annulus String		'ump #1   Pump #2		#2	% Eff	Pump P	ressure		
41 (2   5288   5.395	<b>——</b>					9 58	1,500	8.900	21	2 52	6.5 X	8.	5.5 X	16.	95%		Ann Veloc	ities	
March   Marc					_	Inter. 1	set @	I.D.	Pit	s Stora	ge BbVSt	k	Bbl/S	tk	Total	OH/DC	OH/DP	CSG/DP	
DC   D			3	3,3	360				60	0	0.0780	,	0.11	16	Output	246	164	156	
DC	HWDP	ID		Len	igth	Inter. 2	set @	I.D.	Tot.	Circ. Volum	e Stk/mi	n	Stk/n	nin	Gal/min		Minutes	Strokes	
BET SYNCHULD DATA										864	115			$\neg \dagger$	377	Surf-Surf	29	3,387	
### SPY SPYCRAULC DATA   SOLUBS CONTROL COURPRENT   S.O.   Inc. C.   S.O.   S.O						Liner	set @	I.D.	Mud	FRESH	Bbl/mi	n	Bbl/n	nin	Bbl/min	Bott's Up	24	2,721	
Bit Type   STC   A Bit   O   Shaker 1					-				1 ''						8.97	Tot. Circ.	96	11,083	
Bit No.   2   No.   P Bit   STAVIO   Shaker 2   De-Sander   O AFF   Bittake   No.   O Shaker 3   De-Sander   O AFF   Bittake   O AFF   D AFF   O			_				<u> </u>	T	SOI	IDS CONTR						FLU	JID SPECIFI	CATIONS	
No.	<del></del>							<del>                                     </del>	ig		Underflo	w	Overf	ow		<u> </u>	1		
Vs.   207   Halpon's Ric   0.00   Savaber 4   0   Nover 1971   1   1   1   1   1   1   1   1   1			7					<del> </del>	<del> </del>		-	_							
Fig.	<u> </u>		-					<del>                                     </del>	<del>  </del>		<u> </u>				0	<del></del>			
Material   Mode   Mod			-				<del></del>	2	+	· · · · · · · · · · · · · · · · ·		-				<del> </del>	rate		
Sample from   MAD PROPERTIES   Materials   Initial   Rec'd   Used   Balance   C	<u> </u>		┪				WILL CITY.	3x	┤┈┤	Bar Rec. Un	it	_				pН			
Sample from				70 <b>0</b> y 0		MUD PRO	PERTIES	<u> </u>			<del></del>			44.04					
PM   Sample Temperature ("P)	Sample from	m						<u> </u>	T	1	Mat	erial	s						
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Plastic Visicosity (cP)   210 °F   1	Weight (ib/	gal)			_		<b>-</b>		1	<del></del> -	<del> </del> -				+	<del> </del>	ļ	<del> </del>	
Yeeld   Point (libr100 ft)	Funnel Visc	osity (s	ec/	qt)			<del></del>		†	<del>-   -</del>	<del>                                     </del>		<del></del>		+-	<del> </del>	<del> </del>	<del> </del>	
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Gel Strength   @ 30 min.	Yield Point	(lb/100 l	it <sup>2</sup> )					<b>-</b>	1 -		<del>                                     </del>				+	1	<del> </del>	<del> </del>	
Selection   Sele	Gel strengt	hs (10-s	ec/	10 mir	n) (Ib/1	100 ft <sup>2</sup> )	7	7	1	17	<del>                                     </del>	-	-	<del></del>	<del> </del>		<del> </del>	<del> </del>	
ART 31 2005							·····		<del>                                     </del>		<del>-  </del> -				┿-	BECE!	<u> </u>	<del></del>	
API HTHP Fittrate (mL30 min) @ 250 *F  Cales Thickness (32-di) (APIMTHP)	API Filtrate	(mL/30	min	)			NC ·			<u> </u>	<del> </del>			-	+	DECE!	AED .	<del>                                     </del>	
Cake Thickness (32nd) (APHRTHP)	API HTHP F	iltrate (r	nL/:	30 mir	n @	250 °F				<del></del>	<del>                                     </del>				+	MAR 3 F	2005	<del>                                      </del>	
Comparison	Cake Thick	ness (32	2nd)	(API	HTHP	')		- 1	7	17					<del> </del>			<del>                                     </del>	
Water Content (% by volume)	Solids Cont	ent (% b	y v	olume	2)					1 '			•		1 04.0	THE ACT	LEGIN	<del> </del>	
Sand Content (% by volume)						.= 0.84					<b>-</b>			_	1		<del>                                     </del>	<del> </del>	
MBT Capacity (Ib/bbi bent equiv.)   pH @ 120 "F		<u>·</u>	•		<u> </u>						<u> </u>				1	<del> </del>	1	<del>                                      </del>	
PH	Sand Conte	nt (% by	vo	lume)											1		<del> </del>		
Mud Alkalinity(Pm) (mL of NISO H <sub>2</sub> SO <sub>4</sub> )				ent eq	įuiv.)												1	<u> </u>	
Filtrate Alkalinity (PBMR) (mL - N860 H <sub>2</sub> SO <sub>4</sub> )																	<b>—</b>	<u> </u>	
Chlorides (mg/L)   Hardness as Calcium / Magnesiun / KCL //,							,											1	
Hardness as Calcium / Magnesiun / KCL.\( \)   Low Gravity Solids (\( \) by volume \)   SubTotal			וואט	) (mL	- N/50	H <sub>2</sub> SO <sub>4</sub> )													
Low Gravity Solids (% by volume)															1				
Low Gravity Solids (libbbl)   SubTotal   SubDotal   SubDotal   SubDotal   SubDotal   SubDotal   SubDotal   S			_			/KCL%													
High Gravity Solids %  High Gravity Solids (Ib/bbl)  Drill Solids (Ib/bbl)  Frev. Cost Sol.00  Corrected Solids  Corrected Solids  Comments/Treatment  Chorected Solids  Comments/Treatment  Ric Activity  Chorected Solids  Chorected Solids  Comments/Treatment  Chorected Solids  Comments/Treatment  Ric Activity  Chorected Solids  Chorected Solids  Chorected Solids  Chorected Solids  Chorected Solids  Comments/Treatment  Chorected Solids  Chorected Solids  Chorected Solids  Comments/Treatment  Chorected Solids  Comments/Treatment  Chorected Solids  Comments/Treatment  Co				<u> </u>	ume)					. <u>.</u>	Engineeri	ng							
High Gravity Solids (lb/bbi)			<u> </u>	DDI)							SubTotal	,						\$0.00	
Drill Solids (Ib/bbi)				LLI							Transport				1				
Corrected Solids			(IIII)	DOLL			#3/AL 1.151											\$0.00	
Comments/Treatment							#VALUE!						st					\$0.00	
CHOLRIDES CHECK / SAMPLES 100' THRU 1500'  CLIC AR Mud che IX  100' 1000 PPM 800' 1000 PPM 1500' 1200 PPM 90' 1100 PPM 90' 1100 PPM 1000' 1000 PPM 1000' 1000 PPM 1000' 1000 PPM 1200' 1200 PPM 1200' 1200 PPM 1200' 1200 PPM 1300' 1200 PPM 1400' 1200 PPM 1400' 1200 PPM 1300' 1200 PPM 1300' 1200 PPM 1400' 120		J.1.0.3			Comm	ents/Treat-	nent				Prev. C	ost					t	\$0.00	
1200 PPM											_								
Starting Volume Mud Dumped 600 RPM 2 Ann Sec. OH/DC OH/DP CSG/DP CSG/ Water additions Surface Losses 300 RPM 1 Sec. Length 673 1860 1500 Oil Additions Hole Losses 200 RPM Ann Vel, ft/mir 246 164 156 0 Brine Additions SCE Losses 100 RPM Crit Vel, ft/mir #NUM! #NUM! #NUM! Chemical Additions Other Losses 6 RPM Crit Vel, ft/mir #NUM! #NUM! #NUM! Sarite Additions Mud To Storage 3 RPM 3 Re <sub>sum</sub> #NUM! #NUM! #NUM! #NUM! Whole Mud Additions Total Losses n and K Factors Re <sub>C</sub> Lam 3,799 3,799 Other Additions Ending Volume npbe 0.9994 Re <sub>C</sub> Turb #NUM! #NUM! #NUM!  Angle of Inclination npm -0.2400 Kppe 0.0100  Angle of Inclination Npm -0.2400 Survey Direction Kpn, 22.8266 Eff Visam 3 8 9  Other Drillstring Losses Most Severe Dogleg ECD #NUM! Caic, PSI Loss #NUM! #NUM! Thum Phone  MIKE GIL ETT Stockpoint HOME 420.600 4004  Phone	100' 1000 P 200' 1200 P 300' 1200 P 400' 1200 P 500' 1200 P 500' 1200 P	PM PM PM PM PM PM		80 90 10 11 12 13 14	00' 100 00' 10 00' 10 00' 12 00' 12	00 PPM 00 PPM 00 PPM 00 PPM 00 PPM 00 PPM 00 PPM	1500	1200 PPN									he c	₽ <b>⋖</b>	
Water additions  Surface Losses  300 RPM  Ann Vel, ft/min  SCE Losses  100 RPM  Crit Vel, ft/min  Ann Vel, f	Starting Volum	ne								600 884			Ann F-		NUMA 1	OUIDE '	000	004:5	
Dil Additions Hole Losses 200 RPM Ann Vel, ft/mil 246 164 156 0  Brine Additions SCE Losses 100 RPM Crit Vel, ft/mil #NUM! #NUM! #NUM!  Chemical Additions Other Losses 6 RPM Crit GPM #NUM! #NUM! #NUM!  Barite Additions Mud To Storage 3 RPM 3 Repression #NUM! #NUM! #NUM! #NUM! #NUM!  Other Additions Total Losses n and K Factors Rec Lam 3,799 3,799 3,799  Other Additions Ending Volume npbe 0,9994 Rec Turb #NUM! #NUM! #NUM! #NUM!  Fotal Additions Angle of Inclination nann -0,2400  Angle of Inclination Rann -0,2400  Angle of Inclination Rann 22,8266 Eff Visann 3 8 9  Other Dillstring Losses Most Severe Dogleg ECD #NUM! Calc. PSi Loss #NUM! Diff (Gauge-Calc) #NUM:  Fingineer MIKE Gil LETT Stockpoint	Vater additio	ns			··								<u> </u>					CSG/DC	
SCE Losses   100 RPM   Crit Vel, ft/mir #NUM! #NUM! #NUM!   #NUM! #NUM!   #N					-							━							
Cher Losses 6 RPM Crit GPM #NUM! #NUM! #NUM!  Barite Additions Mud To Storage 3 RPM 3 Re <sub>xmn</sub> #NUM! #NUM! #NUM! #NUM! 0  Whole Mud Additions Total Losses n and K Factors Re <sub>C</sub> Lam 3,799 3,799 3,799  Other Additions Ending Volume npe 0.9994 Re <sub>C</sub> Turb #NUM! #NUM! #NUM!  Fotal Additions Kppe 0.0100  Angle of Inclination nann -0.2400  Angle of Inclination Kspnn, 22.8266 Eff Visam 3 8 9  Survey Depth Hyd. Head 0 Flow Type #NUM! #NUM! #NUM!  Other Drillstring Losses Most Severe Dogleg ECD #NUM! Calc. PSi Loss #NUM! Diff (Gauge-Calc) #NUM:  Stockpoint HOME (32.800.4004)  Phone									•	100 RPM									
Whole Mud Additions  Total Losses  Total Cosses  Total Cosses  Total Losses  Total Los														#	NUM!				
Dither Additions  Ending Volume  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,799 3,799 3,799  In and R Pacies Rec Lam 3,799 3,79				+								_		—		<u> </u>	#NUM1	0	
otal Additions    Inpe			_	+											<u> </u>				
Angle of Inclination				1		Limi	A A CITILIA	<del>-</del>				Re	c Turb	#	NUM!	#NUM!	#NUM!		
iquid Mud Received Survey Direction K <sub>ann</sub> , 22.8266 Eff Vis <sub>Ann</sub> 3 8 9 Survey Depth Hyd. Head 0 Flow Type #NUM! #NUM! #NUM! #NUM! Other Drillstring Losses Most Severe Dogleg ECD #NUM! Catc. PSI Loss #NUM! Diff (Gauge-Calc) #NUM: Ingineer MIKE GILLETT Stockpoint				+-		Anal	e of Inclinati	on :			<del> </del>	+	·	-					
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Other Drillstring Losses Most Severe Dogleg ECD #NUM! Calc. PSI Loss #NUM! Diff (Gauge-Calc) #NUM:  Ingineer MIKE GILLETT Stockpoint HOME 433, 600, 400.4			_	$\perp$								_		#					
MIKE GILLETT Stockpoint HOME 422 500 4004 Phone		ng Losse	ş			Most	Severe Dog	leg		ECD	#NUM!							#NUM!	
) I DESIGNATION I TELL AND AND ON AD	ngrheer		N	IIKE G	HLLET	П	Stockp	oint	-	HOME	432-699-10	84		Pho	xne				
The information in this report is based on our experience and represents our best judgement in the matter and is intended to be helpfut, but we cannot assume responsibility for any loss or accident that may result from	The information	in this repo	ort is	based o	ים זוום חו	(Delience and	mp/meantr	hael index	d (m. sk					丄		UEL	L 432-425 	-2343	