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## **APPLICATION FOR PERMIT TO DRILL**

### MATADOR OPERATING CORPORATION PIPELINE DEEP FED COM "5" #1 660' FSL & 1650' FWL SEC. 5, T19S, R34E LEA COUNTY, NEW MEXICO

In conjunction with Form 3160-3, Application for Permit to Drill, Matador Operating Company submits the following items of pertinent information in accordance with Onshore Oil and Gas Order Nos. 1 & 2, and with all other applicable federal and state regulations.

1. Geologic Name of Surface Formation:

Permian

#### 2. Estimated Tops of Important Geological Markers:

Queen	4459'	- 630'
San Andres	5079'	-1250'
Delaware	5804'	-1975'
Bone Springs	7864'	-4035'
2rd Bone Springs	9644'	-5815'
Wolfcamp	10,814'	-6985'
Strawn	12,164'	-8335'
Morrow	12,774'	-8945'

3. Estimated Depths of Anticipated Fresh Water, Oil, or Gas:

Upper Permian Sands	0-300'	fresh water
Delaware	5804'	oil
2nd Bone Spring SS	9644'	oil
Middle Morrow Clastics	13,129'	gas
Lower Morrow	13,409'	gas

The ground water will be protected by setting 13-3/8" surface casing at 400' and circulating cement back to surface. The potentially productive horizons will be protected by setting 5-1/2" production casing at TD with cement tied back to approximately 9000' on bottom and approximately 5000' through a stage tool set at approximately 9000', if Delaware appears productive.

## 4. <u>Proposed Casing Program:</u>

Hole Size	Interval	Casing OD	Description
25"	0-40'	20"	Conductor
17-1/2"	0-400'	13-3/8"	48#, H-40, ST&C, New, R-3
12-1/4"	0-5200'	8-5/8"	32#, J-55, LT&C, New, R-3
7-7/8"	0-4000'	5-1/2"	17#, S-95, LT&C, New, R-3
7-7/8"	4000-11,200'	5-1/2"	17#, N-80, LT&C, New, R-3
7-7/8"	11,200-13,600'	5-1/2"	17#, S-95, LT&C, New, R-3

# Proposed Cement Program:

20" Conductor:	Ready-mix poured to surface.
13-3/8" Surface Casing:	Cemented to surface with 170 sx $35:65$ Poz ( $35\%$ Poz: $65\%$ Class "C") + $6\%$ Gel (Bentonite) + $0.25$ lb/sk Cello Flake + $1\%$ CaCl2 lead & 200 sx Class "C" + $2\%$ CaCl2 tail. Float equipment: Texas Pattern shoe with an insert float valve above the shoe joint and 2 centralizers. The shoe and first collar will be welded. One plug will be used to displace cement.
8-5/8" Intermediate Casing:	Cemented to surface with 1400 sx $35:65$ Poz ( $35\%$ Poz: $65\%$ Class "C") + $6\%$ Gel (Bentonite) + $0.25$ lb/sk Cello Flake + 5 lb/sk Salt lead & 200 sx Class "C" + $2\%$ CaCl2 tail. Float equipment: Float shoe with a float collar 1 joint above the shoe joint and 12 centralizers. The shoe and float collar will be welded. One plug will be used to displace cement.
5-1/2" Production Casing:	Stage 1 - Cement w/ Lead: 210 sx 50:50 Poz:Cl H +5% D44 + 0.4% D112 + 0.25% D65 + 2% D20 + 0.15% D13. Tail: 330 sx 35:65 Poz: Cl H + 5% D44 + 6% D20 + 0.15% D13. Stage 2 - Cement through Stage Collar @ 9900' w/ Lead: 210 sx 50:50 Poz:Cl H +5% D44 & 0.4% D112 + 0.25% D65 + 2% D-20 + 0.15% D13. Float equipment: Float shoe with a float collar above the shoe joint and centralizers across potential productive intervals as determined by the open hole logs. Thread lock will be used on the float shoe and the float collar. One plug will be used to displace cement. Displacement fluid will be fresh water treated with 2% KCl.

## 5. <u>Pressure Control Equipment:</u>

The blowout preventer equipment (BOP) shown in Exhibits D & E will consist of a double ram-type (5000 psi WP) preventer and a bag-type (hydril) preventer (3000 psi WP). Both units will be hydraulically operated and the ram-type preventer will be equipped with blind rams on top and 4-

1/2" drill pipe rams on bottom. Both BOP's will be nippled up on the 13-3/8" surface casing and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 1000 psi before drilling out of surface casing. Before drilling out of intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 psi and the hydril to 70% of rated working pressure (2100 psi).

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating which is shown in Exhibit F.

#### 6. <u>Proposed Mud System:</u>

The proposed mud system will be a combination of fresh water, brine, cut brine, and polymer gel. The depths and mud properties of the mud system are listed below.

Depth	Type	Weight (ppg)	Viscosity (sec)	Waterloss (cc)	<u>ph</u>
0-400'	Fresh Water	8.3-8.8	28-30	Not Critical	9-10
400-5200'	Brine Water	8.8-10.2	28-30	Not Critical	9-10
5200-12,900'	Cut Brine	8.5-9.0	28-30	Not Critical	9-10
12,900-13,600	Polymer/Gel	9.0-9.8	30-32	<10	9-10

Sufficient mud materials to maintain the above mentioned mud properties and meet minimum lost circulation and weight increase requirements will be kept at the location at all times.

### 7. <u>Auxiliary Well Control and Monitoring Equipment:</u>

- A kelly cock will be kept in the drill string at all times.
- A full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- A mud logging unit complete with H2S detector will be monitoring drilling penetration rate and hydrocarbon shows from 5200' to TD.
- 8. Drillstem Testing, Logging, and Coring Programs:
  - Drillstem tests will be run based on shows encountered while drilling.
  - No logs are planned for the 11" hole section. The electric logging program for the 7-7/8" hole sections will consist of GR-Dual Laterolog MLL-LSS and GR Compensated Neutron--LithoDensity from TD to intermediate casing. Selected sidewell cores and RFT's may be taken in zones of interest.

- No conventional coring is anticipated.

## 9. Abnormal Conditions, Pressures, Temperatures, & Potential Hazards:

No abnormal pressures and/or temperatures are anticipated. No hydrogen sulfide or other hazardous gases or fluids are known to exist in this area. No major loss circulation zones are expected.

# 10. Anticipated Starting Date and Duration of Operations:

The anticipated start date will be during January of 1998. Once commenced, drilling operations should be completed in approximately 45 days. If the well is productive, another 30 days will be required for completion work and facility installation.

### SURFACE USE PLAN MATADOR OPERATING COMPANY PIPELINE DEEP FEDERAL COM "5" #1 660' FSL, 1650' FWL Sec 5, T19S, R34E, N.M.P.M. LEA COUNTY, NEW MEXICO

- 1. EXISTING ROADS Area map, Exhibit "A", is a reproduction of the appropriate part of the U.S.G.S. New Mexico 7-1/2 minutes quadrangle. Existing roads are shown on the exhibit and the road to be used on the referenced well is marked. All roads shall be maintained in a condition equal to that which existed prior to the start of construction.
  - A. Exhibit "A" shows the proposed exploratory well site as staked.
  - B. <u>Directions:</u> From the junction of US62 and SH 529, 15.0 miles west of Hobbs, go Southwest 24.8 miles on US62, then North 2.9 miles on lease road, then Southwest 1.7 miles, then North 3.1 miles on lease road, then East on lease road 0.6 miles.
- 2. PLANNED ACCESS ROADS Existing lease roads with an extension of approximately 1980' of new road due east of existing road.

### 3. LOCATION OF EXISTING WELLS ON A ONE-MILE RADIUS

- A. Water wells <u>NA</u>
- B. Disposal wells <u>NA</u>.
- C. Drilling wells <u>NA</u>.
- D. Producing wells As shown on Exhibit "C".
- E. Abandoned wells As shown on Exhibit "C".
- 4. If upon completion, the well is a producer, Matador Operating Company will furnish maps or plats showing On Well Pad Facilities, and Off Well Pad Facilities (if needed) on a Sundry Notice before construction of these facilities starts.

### 5. LOCATION AND TYPE OF WATER SUPPLY

Water will be purchased locally from a private source and trucked over the access road or piped in flexible lines laid on top of the ground.

### 6. SOURCE OF CONSTRUCTION MATERIALS

If needed, construction materials will be obtained from the drill site's excavations, or from a local source. These materials will be transported over the access route as shown in Exhibit "A".

### 7. METHODS FOR HANDLING WASTE DISPOSAL.

- A. 1. Drill cuttings will be disposed of in the reserve pit.
  - 2. Trash, waste paper, and garbage will be contained in a fenced trash trailer to prevent wind-scattering during storage. When the rig moves out, all trash and debris will be hauled to an approved land-fill site.
  - 3. Salts remaining after completion of the well will be picked up by the supplier, including broken sacks.
  - 4. Sewage from trailer houses will drain into holes with minimum depth of 10'00". These holes will be covered during drilling and back-filled upon completion. A "porta-john" will be provided for the rig crews. This will be properly maintained during the drilling operations and removed upon completion of the well.
  - 5. Chemicals remaining after completion of the well will be stored in the manufacturer's containers and picked up by the supplier.
- B. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for back-filling. In the event drilling fluids will not be evaporated in a reasonable period of time, they will be transported by a tank truck to a state approved disposal site.

Water produced during testing of the well will be disposed of in the reserve pit. Oil produced during testing of the well will be stored in test tanks until sold and hauled from the site.

### 8. ANCILLARY FACILITIES

No camps or airstrips will be constructed.

#### 9. WELL SITE LAYOUT

- A. Exhibit "B" shows the proposed well site layout.
- B. This exhibit indicates proposed location of the reserve pits and trash trailer.
- C. Mud pits in the active circulating system will be steel pits and the reserve pit is proposed to be unlined, unless subsurface conditions encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with a poly-ethylene liner. The pit liner will be a minimum of 6 mils thick. The pit liner will extend a minimum of 2'00" over the reserve pit dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or dry hole.

In either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be levelled and contoured to conform to the original and surrounding area as closely as is possible. Drainage system, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location pad and surface facilities. After the area has been shaped and contoured, topsoil from the soil pits will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

#### 11. OTHER INFORMATION

- A. The area around the wellside has moderate to high dunes with deflation basins 1-2 meters deep, shin oak, yucca, sage brush, mesquite, broom weed & various grasses.
- B. The surface use is grazing and the lease is Ken Smith, Inc., P. O. Box 764, Carlsbad, NM 88221.
- C. An archaeological study has been conducted for the location and road. The report will be submitted under separate cover.
- D. There are no buildings in the area.

#### 12. OPERATOR'S REPRESENTATIVE

Matador Operating Company's field representative for contact regarding compliance with the Surface Use Plan is:

Before, during, and after construction: John W. Bell 8340 Meadow Road #158 Dallas, TX 75231 Office: 214-987-7144 Res: 972-818-8778 Mobile: 214-214-7670

#### 13. CERTIFICATION

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 the operations proposed herein will be performed by Matador Operating Company and its contractors/

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.

Name: <u>hwhell</u> John W. Bell

John W. Bell Drilling Manager

Date: 12-11-97



VICINITY MAP



SECTION	5	TWP	19-S	. RGE	34E
SURVEY	NEW	MEXICO P	RINCIPAL M	ERIDIAN	
COUNTY		LEA	STAT	ENM	1
DESCRIPTION .		660'	FSL & 16	50' FWL	

OPERATOR MATADOR PETROLEUM CORP.



This location has been very carefully staked on the ground according to the best official survey records, maps, and other data available to us. Review this olds and notify us immediately of any

Review this plot and notify us immediately of any possible discrepancy.

# Exhibit "A" Area Map

# TOPOGRAPHIC LAND SURVEYORS

Surveying & Mapping for the Oil & Gas Industry

1307 N. HOBART PAMPA, TX. 79065 (800) 658-6382 6709 N. CLASSEN BLVD. OKLAHOMA CITY, OK. 73116 (800) 654-3219 2903 N. BIG SPRING MIDLAND, TX. 79705 (800) 767-1653 Matador Operating Company Pipeline Deep Fed Com "5" #1 660' FSL & 1650' FWL Sec 5, T19S, R34E Lea County, New Mexico





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#### MINIMUM BLOWOUT PREVENTER REQUIREMENTS

#### 5,000 psl Warking Pressure

5 MWP

STACK REQUIREMENTS

No.	ltem		Min, I D.	Min. Nominal
1	Flowline			
2	Fill up line			2*
3	Drilling nipple			
4	Annular preventer			
5	Two single or one dual hydra operated rams	aulically		
6a	Drilling spool with 2" min. ki 3" min choke line outlets	ill line and		
60	2" min. kill line and 3" min. outlets in ram. (Alternate to			
7	Valve	Gate 🗆 Plug 🗅	3-1/8*	
8	Gate valve-power operate	d	3-1/8"	
9	Line to choke manifold	•		3*
10	Valves	Gale 🖸 Plug 🖸	2-1/16*	
11	Check valve		2-1/16*	
12	Casing head			
13	Valve	Gate 🖸 Plug 🖸	1-13/16"	
14	Pressure gauge with need!	e valve		
15	Kill line to rig mud pump m	anilold		2*

		OPTIONAL		
16	Flanged valve		1-13/16*	

#### CONTRACTOR'S OPTION TO FURNISH:

- 1.All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 5,000 psi, minimum.
- 2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
- 3.BOP controls, to be located near drillers position.
- 4.Kelly equipped with Kelly cock.
- 5.Inside blowout prevventer or its equivalent on derrick floor at all limes with proper threads to fit pipe being used.
- 8.Kelly saver-sub equipped with rubber casing protector at all times.
- 7.Plug type blowout preventer tester.
- 8.Extra set pipe rams to fit drill pipe in use on location at all times.
- 9. Type RX ring gaskets in place of Type R.

#### MEC TO FURNISH:

- 1. Bradenhead or casinghead and side valves.

#### **GENERAL NOTES:**

- 1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
- 2.All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through chore. Valves must be full opening and suitable for high pressure mud service.
- 3.Controls to be of standard design and each marked, showing opening and closing position.
- 4. Chokes will be positioned so as not to hamper or delay changing of choka beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
- 5. All valves to be equipped with handwheels or handles ready for immediate USA.
- E.Choke lines must be suitably anchored.

Matador Operating Company Pipeline Deep Fed Com "5" #1 660' FSL & 1650' FWL Sec 5, T19S, R34E Lea County, New Mexico

#### Exhibit "D"



- 7.Handwheels and extensions to be connected and ready for use.
- Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
- 9. All seamless steel control piping (5000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
- 10.Casinghead connections shall not be used except in case of emergency.
- 11.Do not use kill line for routine fill-up operations.

# BOP SCHEMATIC



Exhibit "E"

#### MINIMUM CHOKE MANIFOLD 3,000, 5,000 and 10,000 PSI Working Pressure

3 MWP - 5 MWP - 10 MWP

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Exhibit "F"

			MINIM	JUM REOU	REMENTS					
		T T	3,000 MWP			5,000 MWP			10,000 LAWP	
		I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING	1.D.	NOWINAL	RATING
No.	Line from drilling spool		· 3*	3,000		3*	5,000		3.	10,000
1	Cross 3"x3"x3"x2"			3,000			5,000			
2	Cross 3"x3"x3"x3"									10,000
3	Valves(1) Gate C Plug C(2)	3-1/8-		3,000	3-1/8*		5,000	3-1/8*		10,000
4	Valve Gate C Plug C(2)	1-13/16*		3.000	1-13/16*		5.000	1-13/16*		10,000
48	Valves(1)	2-1/16"		3,000	2-1/16*		5,000	3-1/8"		10,000
5	Pressure Gauge	1		3,000			5,000	<u> </u>	1	10,000
6	Valves Gate C Plug C(2)	3-1/8*		3,000	3-1/8*		5,000	3-1/8*		10,000
┝-	Adjustable Choke(3)	2*	+	3,000	2*		5,000	2*		10,000
H-	Adjustable Choke	1.		3.000	1"		5,000	2.		10,000
- 9			3.	3,000	1	3.	5.000		3.	10,000
<u> </u>			2"	3,000	1	2*	5,000		3.	10,000
10	Gate O	3-1/8*		3,000	3-1/8*		\$,000	3-1/8*		10,000
12			3-	1,000		3.	1,000		3.	2,000
13			31	1,000		3*	1,000		3.	2,000
14	Barnota reading compound	-		3.000			5.000			10,000
			2'x5'			2'x5'			2'55'	
			4.	1,000		4*	1.000		4*	2,000
	Gate D	3-1/8-		3,000	3-1/8*		5.000	3-1/8*		10,000

(1) Only one required in Cless 311.

(2) Gate valves only shall be used for Class 10M.

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

## EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

- 1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable railing.
- 2. All flanges shall be API 58 or 68X and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- 3. All lines shall be securely anchored.
- 4. Chokes shall be equipped with lungsten carbide seats and needles, and replacements shall be available.
- 5. Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the ng floor in con-
- junction with the standpipe pressure gauge. 8. Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using bull plugged tees.
- 7 Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

Well Name: Location:	Pipeline Deep Fed Com "5" #1			County:	Lea		State:	NM	_
	660 FSL; 1650' FWL			Est KB:	3831'		TD:	13,600'	
	Sec 5, T19S-R34E			_	3811'				
			Type of				Form	(ppg)	
	Formation	Drilling	Formation	Hole	Casing	Frac	Press	Mud Wt	
Depth	Тор & Туре	Problems	Evaluation	Size	Size-Depth	Grad	Grad	& Type	
	Sand & Red Bed @ 300'		0-300'	17-1/2"	13-3/8" 48# H-40 @	1		8.3-8.8	Ι
			Dev. survey <1 deg		400' w/ cmt to surface			Fresh wtr	4
1000	Anhydrite/Salt	Possible	500' surveys to TD						
	-	Deviation & washout				ł			
	-	Washout						]	
2000	1							8.8-10.2	
				11"			1	Cut Brine	
3000									
	-		1		1				
	-1			1	1	1			
4000	]	1							
	-		1						
	-4					1	1		
5000	-1	1	Loging unit					1	
5000		Possible water	5200' to TD		8-5/8" 32# J-55 @				
	-1	flows			5200 w/ cmt to surf				
	Delaware: 5804 (-1975)								
6000		1						8.5-9.0	
								Cut Brine	
	-	1		7-7/8"					
7000	-						1		
	Bone Spring 7864 (-4035)								
8000	_		Maximum deviation				1		
8000	—		5 degrees						
	-						1		
9000						1			
	2nd Bone Spg 9644 (-5815)					1			
10000	-1								
	Wolfcamp 10,814 (-6985)			1			1		
		1					1		
11000	4								
11000									
					5-1/2" 17# N-80				
		1	1		& S-95 @ 13,600				
12000	4				w/ cmt to 5000'				
	Strawn: 12,164 (-8335)								
·	Morrow 12,774 (-8945)	1							
13000	MUTUW 12,//4 (-0745)	1					1	9.0-9.8	
	Mid Morrow Clastics					1		Polymer-Gel	
	13,129 (-9300)				4		1	WL<10	
		1						1	
14000			1					1	
}		1				1			
	-							1	
		1	1				1	1	



Matador Operating Company Pipeline Deep Fed Com "5" #1 660; FSL & 1650' FWL Sec 5, T19S, R34E Lea County, New Mexico

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