

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

NOTICE OF INTENTION TO DRILL

Notice must be given to the Oil Conservation Commission or its proper agent and approval obtained before drilling begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in triplicate. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

Monument, New Mexico

March 3, 1937

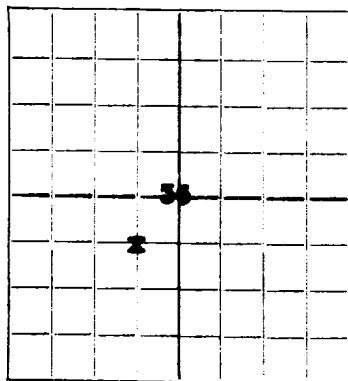
OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico

Gentlemen:

You are hereby notified that it is our intention to commence the drilling of a well to be known as _____

Amerada Petroleum Corporation State "N" Well No. 3 in NE 1/4 SW 1/4
Company or Operator Lease

of Sec. 36, T. 19, R. 36, N. M. P. M., Monument Field, Lea County.
N.



AREA 640 ACRES
LOCATE WELL CORRECTLY

The well is 1980' feet [N.] ~~SW~~ of the South line and 1980' feet
[E.] ~~SW~~ of the West line of 36 - 19 - 36.

(Give location from section or other legal subdivision lines. Cross out wrong directions.)

If state land the oil and gas lease is No. _____ Assignment No. _____

If patented land the owner is _____

Address _____

If government land the permittee is _____

Address _____

The lessee is Amerada Petroleum Corporation

Address Tulsa, Oklahoma

We propose to drill well with drilling equipment as follows: _____

Rotary.

The status of a bond for this well in conformance with Rule 39 of the General Rules and Regulations of the Commission is as follows: _____

We propose to use the following strings of casing and to land or cement them as indicated:

Size of Hole	Size of Casing	Weight Per Foot	New or Second Hand	Depth	Landed or Cemented	Sacks Cement
<u>17 1/2"</u>	<u>12 1/2"</u>	<u>40#</u>	<u>New Lapweld</u>	<u>Minimum of 150' or 50' in Red beds.</u>		<u>200</u>
<u>11"</u>	<u>8-5/8"</u>	<u>32#</u>	<u>New Seamless</u>	<u>2400' or thru Salt</u>		<u>500</u>
<u>7-7/8"</u>	<u>6-5/8"</u>	<u>20#</u>	<u>New Seamless</u>	<u>3800' or on top of Pay</u>		<u>100</u>

If changes in the above plan become advisable we will notify you before cementing or landing casing. We estimate that the first productive oil or gas sand should occur at a depth of about 3800' feet.

Additional information:

Approved _____ 19_____
except as follows:

Sincerely yours.

Amerada Petroleum Corporation

Company or Operator

By _____

Position Farm Boss

Send communication regarding well to

Name J. A. Starkey

Address Monument, New Mexico

OIL CONSERVATION COMMISSION,

By _____

Title _____

THE EFFECT OF THE RISK-NEUTRAL MEASURE ON THE PRICES OF EUROPEAN CALL AND PUT OPTIONS

Abstract. In this paper, we study the effect of the risk-neutral measure on the prices of European call and put options. We show that the price of a European call option is increasing in the risk-neutral measure, while the price of a European put option is decreasing in the risk-neutral measure. We also show that the price of a European call option is increasing in the volatility of the underlying asset, while the price of a European put option is decreasing in the volatility of the underlying asset.

1. INTRODUCTION

In this paper, we study the effect of the risk-neutral measure on the prices of European call and put options. We show that the price of a European call option is increasing in the risk-neutral measure, while the price of a European put option is decreasing in the risk-neutral measure. We also show that the price of a European call option is increasing in the volatility of the underlying asset, while the price of a European put option is decreasing in the volatility of the underlying asset.

Let S_t be the price of a stock at time t . Let K be the strike price of a European call option. Let T be the maturity date of the option. The price of a European call option at time t is given by

$$C_t = S_t N(d_1) - Ke^{-r(T-t)} N(d_2)$$

$$d_1 = \frac{\ln(S_t/K) + (r + \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}}$$

$$d_2 = \frac{\ln(S_t/K) + (r - \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}}$$

$$N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{1}{2}t^2} dt$$

$$N'(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N''(x) = -\frac{x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N'''(x) = \frac{x^2 - 1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(4)}(x) = \frac{x^3 - 3x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(5)}(x) = \frac{x^4 - 6x^2 + 3}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(6)}(x) = \frac{x^5 - 10x^3 + 15x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(7)}(x) = \frac{x^6 - 15x^4 + 45x^2 - 15}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(8)}(x) = \frac{x^7 - 21x^5 + 105x^3 - 105x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(9)}(x) = \frac{x^8 - 28x^6 + 210x^4 - 420x^2 + 105}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(10)}(x) = \frac{x^9 - 36x^7 + 315x^5 - 1260x^3 + 1575x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(11)}(x) = \frac{x^{10} - 45x^8 + 525x^6 - 3150x^4 + 6930x^2 - 3465}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(12)}(x) = \frac{x^{11} - 55x^9 + 715x^7 - 5005x^5 + 20790x^3 - 31500x}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

$$N^{(13)}(x) = \frac{x^{12} - 66x^{10} + 900x^8 - 7920x^6 + 45360x^4 - 155220x^2 + 155220}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$