

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL	XXX	REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Hobbs, New Mexico November 13th., 1936

Place Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the _____

Gulf Oil Corp - Gypsy Division. -- F. W. Kutter "B" Well No. **2** in the
 _____ Company or Operator _____
NW/4 of Sec. **28**, T. **19**, R. **37**, N. M. P. M.,
Monument Field, **Lea** County.

The dates of this work were as follows: _____

Notice of intention to do the work was [was not] submitted on Form C-102 on _____ 19____
 and approval of the proposed plan was [was not] obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

11-12-1936 treated with 1,000 gallons.

Test before acid - None.

Test After acid - None .

Note will re-acidize.

DATE

Witnessed by **C. B. Schmidt** **Gulf** **Junior Engineer.**
 Name Company Title

Subscribed and sworn to before me this _____

17th day of **November**, 19 **36**

Patricia W. Johnson
 Notary Public

My Commission expires **Oct 24, 1939**

I hereby swear or affirm that the information given above is true and correct.

Name *A. A. [Signature]*
 Position **District Supt.**
 Representing **Gulf Oil Corp - Gypsy Division.**
 Company or Operator
 Address **Hobbs, New Mexico.**

Remarks:

[Signature]
 Name
 Title

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NOV 17 1936

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

PHYSICAL CHEMISTRY

1. The rate of reaction is defined as the change in concentration of a reactant or product per unit time. For a reaction $A \rightarrow B$, the rate is given by $-\frac{d[A]}{dt} = \frac{d[B]}{dt}$. The rate constant, k , is a proportionality constant that relates the rate of reaction to the concentration of the reactants. For a first-order reaction, the rate is directly proportional to the concentration of the reactant, $\text{rate} = k[A]$. For a second-order reaction, the rate is proportional to the square of the concentration of the reactant, $\text{rate} = k[A]^2$. For a zero-order reaction, the rate is independent of the concentration of the reactant, $\text{rate} = k$.

2. The Arrhenius equation relates the rate constant, k , to the activation energy, E_a , and the temperature, T . It is given by $k = A e^{-E_a/RT}$, where A is the pre-exponential factor, R is the gas constant, and T is the absolute temperature. The activation energy is the minimum energy that must be possessed by the reactants in order for a reaction to occur.

3. The transition state theory (TST) provides a more detailed description of the reaction process. It states that the rate of reaction is determined by the number of molecules that possess sufficient energy to overcome the energy barrier of the transition state. The rate constant is given by $k = \frac{k_B T}{h} e^{-E_a/RT}$, where k_B is the Boltzmann constant and h is Planck's constant.

4. The equilibrium constant, K , is a measure of the extent of a reaction. It is defined as the ratio of the concentrations of the products to the concentrations of the reactants, each raised to the power of its stoichiometric coefficient. For a reaction $aA + bB \rightleftharpoons cC + dD$, the equilibrium constant is given by $K = \frac{[C]^c [D]^d}{[A]^a [B]^b}$. The equilibrium constant is related to the standard Gibbs free energy change, ΔG° , by the equation $\Delta G^\circ = -RT \ln K$.

5. The rate of reaction is affected by several factors, including temperature, concentration, and the presence of a catalyst. Increasing the temperature increases the rate of reaction because more molecules possess sufficient energy to overcome the activation energy barrier. Increasing the concentration of the reactants increases the rate of reaction because there are more molecules available to undergo the reaction. A catalyst increases the rate of reaction by providing an alternative reaction pathway with a lower activation energy.

6. The rate of reaction is also affected by the physical state of the reactants. For a reaction between a solid and a liquid, the rate is proportional to the surface area of the solid. For a reaction between two gases, the rate is proportional to the pressure of the gases. For a reaction between a gas and a liquid, the rate is proportional to the concentration of the gas.

7. The rate of reaction is also affected by the presence of inhibitors. An inhibitor is a substance that decreases the rate of reaction by binding to the reactants or the catalyst, thereby preventing the reaction from occurring.