

LOG OF OIL OR GAS WELL

Las Cruces 070372

Company: McCurdy, McElroy, Brock & Brock, 601 Dallas, Artesia, New Mexico
Lessor: Government Field: Watkins State: New Mexico
Well No. 1 Section 31, Township: 18S., Range 32E., Meridan N.M.P.M. Lea County
Location: 1980' fr S. & E. Lines of section 31. Elevation: 3677

/s/ R. T. WILSON, PRODUCTION SUPT.

Commenced drilling to deepen February 21, 1949 Finished drilling April 18, 1949.

Oil or Gas Sands or Zones: No.1, from 3009 to 3034

Import water sands: No. 1 from 4277

Heaving plug - Material Cement Length 200' - 50' Depth set 4077-4277
3140-3190

Cable tools used from 0 to 4277'.

Production for the first 24 hours was 25 BARRELS FLUID of which 80% was oil

Emulsion: 0 20% water.

FORMATION RECORD

<u>FROM</u>	<u>TO</u>	<u>TOTAL FEET</u>	<u>FORMATION</u>
00 3048	3085	37	Anhydrite
3085	3095	10	Lime
3095	3100	5	Anhydrite
3100	3110	10	Anhydrite and lime
3110	3120	10	Lime
3120	3135	15	Anhydrite
3135	3150	15	Brown lime
3150	3165	15	Anhydrite and lime shell
3165	3180	15	brown lime
3180	3190	10	Anhydrite
3190	3210	20	Lime
3210	3275	65	Anhydrite
3275	3285	10	Gray lime
3285	3400	115	Anhydrite
3400	3405	5	Red sand
3405	3420	15	Red sand broken
3420	3435	15	Lime
3435	3440	5	Sand - trace of water
3440	3445	5	Lime
3445	3455	10	Sand

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Oil or Gas Sands or Zones: No.1, from 3009 to 3034

Import water sands: No. 1 from 4277

Heaving plug - Material Cement Length 200' - 50' Depth set 4077-4277

Cable tools used from 0 to 4277'. 3110-3190

Production for the first 24 hours was 25 BARRELS FLUID of which 80% was oil

Emulsion: 0 20% water.

FORMATION RECORD

<u>FROM</u>	<u>TO</u>	<u>TOTAL FEET</u>	<u>FORMATION</u>
3048	3085	37	Anhydrite
3085	3095	10	Lime
3095	3100	5	Anhydrite
3100	3110	10	Anhydrite and lime
3110	3120	10	Lime
3120	3135	15	Anhydrite
3135	3150	15	Brown lime
3150	3165	15	Anhydrite and lime shell
3165	3180	15	brown lime
3180	3190	10	Anhydrite
3190	3210	20	Lime
3210	3275	65	Anhydrite
3275	3285	10	Gray lime
3285	3400	115	Anhydrite
3400	3405	5	Red sand
3405	3420	15	Red sand broken
3420	3435	15	Lime
3435	3440	5	Sand - trace of water
3440	3445	5	Lime
3445	3455	10	Sand

1. Introduction

1.1. Background

The purpose of this study is to investigate the effects of various factors on the performance of a system. The study is divided into two main parts: a theoretical analysis and an experimental investigation. The theoretical analysis aims to establish the relationship between the input variables and the output performance. The experimental investigation is designed to validate the theoretical findings and to determine the optimal operating conditions for the system.

1.2. Objectives

The primary objective of this study is to determine the effect of the input variables on the system performance. The secondary objectives are to identify the optimal input values for maximizing the system performance and to compare the results of the theoretical analysis with the experimental findings. The study is organized as follows: Chapter 2 presents the theoretical analysis, Chapter 3 describes the experimental setup, Chapter 4 presents the experimental results, and Chapter 5 concludes the study.

Chapter 2. Theoretical Analysis

2.1. System Model

Input Variable	Output Variable	Relationship	Optimal Value
Temperature	Performance	Positive	High
Pressure	Performance	Negative	Low
Humidity	Performance	Neutral	Medium
Wind Speed	Performance	Positive	High
Cloud Cover	Performance	Negative	Low
Soil Moisture	Performance	Positive	High
Light Intensity	Performance	Positive	High
CO2 Concentration	Performance	Positive	High
NO2 Concentration	Performance	Negative	Low
O3 Concentration	Performance	Positive	High
PM10 Concentration	Performance	Negative	Low
PM2.5 Concentration	Performance	Negative	Low
Acid Rain	Performance	Negative	Low
Global Warming	Performance	Positive	High
Ozone Depletion	Performance	Negative	Low
Sea Level Rise	Performance	Negative	Low
Glacier Melting	Performance	Negative	Low
Ice Sheet Melting	Performance	Negative	Low
Permafrost Thawing	Performance	Negative	Low
Arctic Warming	Performance	Positive	High
Antarctic Warming	Performance	Positive	High
Global Warming	Performance	Positive	High
Ozone Depletion	Performance	Negative	Low
Sea Level Rise	Performance	Negative	Low
Glacier Melting	Performance	Negative	Low
Ice Sheet Melting	Performance	Negative	Low
Permafrost Thawing	Performance	Negative	Low
Arctic Warming	Performance	Positive	High
Antarctic Warming	Performance	Positive	High

CONTINUE

<u>FROM</u>	<u>TO</u>	<u>TOTAL FEET</u>	<u>FORMATION</u>
3455	3565	10	Lime
3565	3590	25	Broken lime
3590	3605	15	Lime
3605	3615	10	Broken lime
3615	3625	10	Sandy lime
3625	3665	40	Red sand
3665	3675	10	Sandy lime
3675	3732	57	lime
3732	3750	18	Sand
3750	3755	5	Lime
3755	3760	6	Sandy lime
3760	3845	85	Lime
3845	3870	25	Sandy lime
3870	4025	55	Lime
4025	4056	31	Sand
4056	4070	14	Sand and lime shells
4070	4080	10	Sandy lime
4080	4215	35	lime
4215	4229	14	Lime and sand
4229	4240	11	Sand
4240	4254	14	Sand and shale
4254	4277	23	Sand

Well deepened to 4277 and plugged back to 3140
Plugs were set from 4077-4277 and 3140-3190
10# mud between plugs
Work done through tubing by Halliburton.

<u>FROM</u>	<u>TO</u>	<u>FORMATION RECORD</u>
0	135	Sand
135	210	Red bed
210	385	Red rock
385	400	Sand (water)
400	405	Red rock
405	415	Red bed
415	460	Sand (water)
460	470	Red bed
470	510	Red rock
510	545	Sandy shale
545	570	Red bed
570	610	Red shale
610	645	Red rock
645	685	Red bed
685	890	Red rock
890	915	Green shale
915	950	Red rock
950	1005	Red bed
1005	1070	Anhydrite
1030	1035	Anhydrite and red bed
1035	1040	Anhydrite
1040	1045	Red rock
1045	1057	Anhydrite and salt
1057	1135	Lime
1135	1165	Salt
1165	1173	Lime
1173	1177	Shale
1177	1185	Anhydrite
1185	1190	Lime and anhydrite
1190	1212	Lime
1212	1355	Anhydrite and salt
1355	1420	Salt and anhydrite
1420	2255	Salt
2255	2270	Salt and anhydrite
2270	2440	Salt
2440	2700	Anhydrite
2700	2870	Anhydrite and red rock
2870	2955	Anhydrite
2955	2990	Anhydrite and blue shale
2990	3009	Anhydrite and red shale
3009	3020	Sand (show of oil)
3020	3034	Sand and shale
3034	3048 TD	Anhydrite and brown sand

