

State Geological Survey
WICHITA, BRANCH
KANSAS DRILLERS LOG

15-159-20697

API No. 15 — 159 — 20,697
County Number

Operator

Northern Natural Gas Co.

Address

P. O. Box 88 Lyons, Kansas 67554

Well No.

#36-02

Lease Name

Caldwell

Footage Location

2515 feet from ~~XX~~ (S) line 1100 feet from ~~XX~~ (W) line

Principal Contractor

Sterling Drilling Co.

Geologist

Spud Date

6/11/77

Total Depth

3747

P.B.T.D.

Date Completed

7/27/77

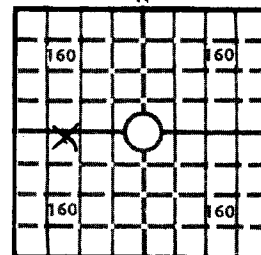
Oil Purchaser

S. 36 T. 19 R. 8 ~~E~~ W

Loc. 1100' EWL & 2515 NSL

County Rice

640 Acres
N



Locate well correctly

Elev.: Gr. 1737

DF KB 1750

CASING RECORD

Report of all strings set — surface, intermediate, production, etc.

Purpose of string	Size hole drilled	Size casing set (in O.D.)	Weight lbs/ft.	Setting depth	Type cement	Sacks	Type and percent additives
Surface	12 1/4"	8 5/8"	23.6	1100	50-50P02MIX	500	2% GEL & 3% C.C.
Production	7 7/8"	5 1/2"	15.5	3746	50-50P02MIX	750	500 W/4% GEL, 1/2 of 1% HALAD 9 W/ 5# GIL 250 W/18% SALT & W/3/4 of 1% CFR-2

LINER RECORD

PERFORATION RECORD

Top, ft.	Bottom, ft.	Sacks cement	Shots per ft.	Size & type	Depth interval
			2	DP. JET	3489-3509
Size	Setting depth	Packer set at			
2 7/8"	3472	3483			

ACID, FRACTURE, SHOT, CEMENT SQUEEZE RECORD

Amount and kind of material used	Depth interval treated
500 GAL 15% HCL	3489 - 3509

INITIAL PRODUCTION

Date of first production

GAS STORAGE WELL

Producing method (flowing, pumping, gas lift, etc.)

RATE OF PRODUCTION
PER 24 HOURS

Oil

bbls.

Gas

MCF

Water

Gas-oil ratio

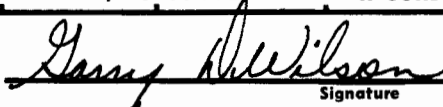
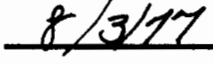
bbls.

CFPB

Disposition of gas (vented, used on lease or sold)

Producing interval (s)

INSTRUCTIONS: As provided in KCC Rule 82-2-125, within 90 days after completion of a well, one completed copy of this Drillers Log shall be transmitted to the State Geological Survey of Kansas, 4150 Monroe Street, Wichita, Kansas 67209. Copies of this form are available from the Conservation Division, State Corporation Commission, 3830 So. Meridian (P.O. Box 17027), Wichita, Kansas 66217. Phone AC 316-522-2206. If confidential custody is desired, please note Rule 82-2-125. Drillers Logs will be on open file in the Oil and Gas Division, State Geological Survey of Kansas, Lawrence, Kansas 66044.

Operator Northern Natural Gas Company		DESIGNATE TYPE OF COMP.: OIL, GAS, DRY HOLE, SWDW, ETC.:	
Well No. 36-02	Lease Name Caldwell		Gas Storage Well
S <u>36</u> T <u>19</u> R <u>8</u> ^{XX} W			
WELL LOG		SHOW GEOLOGICAL MARKERS, LOGS RUN, OR OTHER DESCRIPTIVE INFORMATION.	
Show all important zones of porosity and contents thereof; cored intervals, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.			
FORMATION DESCRIPTION, CONTENTS, ETC.	TOP	BOTTOM	NAME
Hutchinson Salt	797	1043	GRN
Chase Group	1226		DENSITY
Council Grove Group	1569		DIP
Tarkio Lm.	2102		IES
Howard Lm.	2334		BHC
Heebner Shale	2721		CB/SS
Lansing/K.C. Group	2893		
Basal Penn. Sh. & Cong.	3227		
Simpson Group	3435		
Arbuckle Dolomite Group	3486		
USE ADDITIONAL SHEETS, IF NECESSARY, TO COMPLETE WELL RECORD.			
Date Received	 Signature  Title  Date		