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KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U3C
June 2015
Form must be Typed
Form must be completed on a per well basis

ANNUAL REPORT OF PRESSURE MONITORING, FLUID INJECTION AND ENHANCED RECOVERY

Complete all blanks - add pages if needed. Copy to be retained for five (5) years after filing date.

OPERATOR: License # 7311
Name: Shakespeare Oil Co., Inc.
Address 1: 202 W MAIN ST
Address 2:
City: SALEM State: IL Zip: 62881 + 1519
Contact Person: Don Williams
Phone: (618) 548-1585
Lease Name: GAIL
Well Number: 1-21

API No.: 15-101-22325-00-01
Permit No: E32389.1
Reporting Year: 2019
(January 1 to December 31)

SE - SW - NE - NE (Q/Q/Q/Q) Sec. 21 Twp. 18 S. R. 29 ☐ E ☑ W
1064 feet from ☑ N / ☐ S Line of Section
933 feet from ☑ E / ☐ W Line of Section
County: Lane

I. Injection Fluid:

Type *(Pick one)*: ☐ Fresh Water ☐ Treated Brine ☑ Untreated Brine ☐ Water/Brine
Source: ☑ Produced Water ☐ Other *(Attach list)*
Quality: Total Dissolved Solids: 60127 mg/l Specific Gravity: 1.037 Additives:
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: 1200 psi Injection Zone: LANSING-KANSAS CITY,ALTAMONT
Maximum Authorized Injection Rate: 500 barrels per day
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: 1 *(Include TA's)*

III.

Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
January	2672	0	0	0	31
February	2411	0	0	0	28
March	3170	0	0	0	31
April	4666	0	0	0	30
May	6532	0	0	0	31
June	8437	0	0	0	29
July	8305	0	0	0	31
August	9207	0	0	0	31
September	3714	150	0	0	27
October	4644	400	0	0	31
November	4521	400	0	0	30
December	5591	500	0	0	30
TOTAL	63870		0		

Submitted Electronically

NALCO Champion
An Ecolab Company

Complete Water Analysis Report

Customer: **Shakespeare Oil Company**
Region: **Kansas**
Location: **Lane County, KS**
System: **Production System**

Equipment: **Gail 1-21**
Sample Point: **Bleeder**
Sample ID: **AO44661**
Acct Rep Email: **Michael.Walters@ecolab.com**

Collection Date: **02/03/2020**
Receive Date: **02/06/2020**
Report Date: **02/07/2020**
Location Code: **430673**

Field Analysis

Bicarbonate	**468** mg/L	Dissolved CO2	**194** mg/L	Dissolved H2S	**48** mg/L
Pressure Surface	**25** psi	Temperature	**100** ° F	pH of Water	**7.5**

Sample Analysis

Conductivity (Calculated)	**93948** µS - cm3	Ionic Strength	**1.07**	Resistivity	**0.106** ohms - m
Specific Gravity	**1.037**	Total Dissolved Solids	**60126.97** mg/L		

Cations

Iron	**0.057** mg/L	Manganese	**0.040** mg/L	Barium	**0.118** mg/L
Strontium	**47.15** mg/L	Calcium	**682.1** mg/L	Magnesium	**350.5** mg/L
Sodium	**21500.00** mg/L				

Anions

Chloride	**35996** mg/L	Sulfate	**1083** mg/L

Scale Type

Anhydrite CaSO4 PTB	N/A	**Anhydrite CaSO4 SI**	-1.18
Barite BaSO4 PTB	N/A	**Barite BaSO4 SI**	-0.36
Calcite CaCO3 PTB	54.6	**Calcite CaCO3 SI**	0.24
Celestite SrSO4 PTB	N/A	**Celestite SrSO4 SI**	-0.32
Gypsum CaSO4 PTB	N/A	**Gypsum CaSO4 SI**	-1.07
Hemihydrate CaSO4 PTB	N/A	**Hemihydrate CaSO4 SI**	-1.05

Comments

Scaling predictions calculated using Oddo-Tomson model

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