

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 # \_\_\_\_\_  
Name: \_\_\_\_\_  
Address 1: \_\_\_\_\_  
Address 2: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_  
Lease Name: \_\_\_\_\_  
Well Number: \_\_\_\_\_

API No.: \_\_\_\_\_  
Permit No.: \_\_\_\_\_  
Reporting Year: \_\_\_\_\_  
(January 1 to December 31)  
\_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Sec. \_\_\_\_ Twp. \_\_\_\_ S. R. \_\_\_\_  E  W  
(a/a/a/a)  
\_\_\_\_\_ feet from  N /  S Line of Section  
\_\_\_\_\_ feet from  E /  W Line of Section  
County: \_\_\_\_\_

**I. Injection Fluid:**

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

**II. Well Data:**

Maximum Authorized Injection Pressure: \_\_\_\_\_ psi Injection Zone: \_\_\_\_\_  
Maximum Authorized Injection Rate: \_\_\_\_\_ barrels per day  
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: \_\_\_\_\_ (Include TA's)

III.	Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
	January	_____	_____	_____	_____	_____
	February	_____	_____	_____	_____	_____
	March	_____	_____	_____	_____	_____
	April	_____	_____	_____	_____	_____
	May	_____	_____	_____	_____	_____
	June	_____	_____	_____	_____	_____
	July	_____	_____	_____	_____	_____
	August	_____	_____	_____	_____	_____
	September	_____	_____	_____	_____	_____
	October	_____	_____	_____	_____	_____
	November	_____	_____	_____	_____	_____
	December	_____	_____	_____	_____	_____
	<b>TOTAL</b>	_____	_____	_____	_____	_____

# STAABCO CHEMICAL, INC.

P.O. Box D  
Plainville, KS 67663

Phone: (785) 737-6141  
Fax: (785) 434-2529

## WATER ANALYSIS REPORT

Company: Shakespeare  
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.

Date Sampled: February, 2019  
Date Analyzed: February, 2019

pH: 6.70  
Dissolved H<sub>2</sub>S: 20  
Dissolved CO<sub>2</sub>: 0  
Specific Gravity: 1.065  
Density, (lbs/gal): 8.88

Total Dissolved Solids (mg/L): 102,220  
Total Ionic Strength: 1.883

	mg/L	Meq/L
<b>Anions</b>		
Sulfide	97.6	97.6
Bicarbonate:	390	6
Chloride:	60,000	1,690
Sulfate:	2,600	54
<b>Cations</b>		
Calcium:	2,880	144
Magnesium:	708	58
Sodium:	35,620	1,549
Barium:	22	
Strontium:	0	
Total Hardness:	4,040	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

### PROBABLE MINERAL COMPOSITION

144 Ca	6 HCO <sub>3</sub>		
58 Mg	54 SO <sub>4</sub>		
1,549 Na	1,690 Cl		
		Meq/L	mg/L
		6	519
		54	3,687
		83	4,630
		0	0
		0	0
		58	2,762
		0	0
		0	0
		1,549	90,538

Saturation Values  
In Distilled Water @ 20°C

CaCO <sub>3</sub>	13 mg/L		
CaSO <sub>4</sub> * 2H <sub>2</sub> O	2,090 mg/L		
MgCO <sub>3</sub>	103 mg/L		

### COMMENTS:

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## Scale Deposition Potential Analysis

Company: Shakespeare  
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.

Date Sampled: February, 2019  
Date Analyzed: February, 2019

### Brine Composition

pH:	6.70	Ca, mg/L:	2,880	Total Hardness, mg/L:	4,040
Specific Gravity:	1.065	Mg, mg/L:	708	Total Dissolved Solids, mg/L:	102,220
HCO <sub>3</sub> , mg/L:	390	Na, mg/L:	35,620	Total Ionic Strength:	1.883
Cl, mg/L:	60,000	Ba, mg/L:	22		
SO <sub>4</sub> , mg/L:	2,600	Sr, mg/L:	0	Total Dissolved Iron, mg/L:	0.0

### Calcium Carbonate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Stiff-Davis Index:	-0.04	0.24	0.61	1.09	0.37	0.70
Deposition, lbs/1,000 Bbls:	-30.0	83.7	163.6	202.7	120.3	175.2

### Calcium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	0.78	0.79	0.80	0.81	0.79	0.80
Deposition, lbs/1,000 Bbls:	-357.2	-352.8	-331.2	-307.9	-345.3	-326.4

### Barium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	290.83	216.18	154.11	107.29	188.79	142.25
Deposition, lbs/1,000 Bbls:	13.0	13.0	13.0	13.0	13.0	13.0

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**Scale Deposition Potential Trends**

Company: Shakespeare  
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.

Date Sampled: February, 2019  
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