

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: Cog 2-35 SWD

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

pH:	6.10	Total Dissolved Solids (mg/L):	90,518
Dissolved H <sub>2</sub> S:	20		
Dissolved CO <sub>2</sub> :	0	Total Ionic Strength:	1.688
Specific Gravity:	1.055		
Density, (lbs/gal):	8.80		

	mg/L	Meq/L
Anions		
Sulfide	99.2	99.2
Bicarbonate:	451	7
Chloride:	51,000	1,437
Sulfate:	4,500	94
Cations		
Calcium:	3,360	168
Magnesium:	366	30
Sodium:	30,815	1,340
Barium:	26	
Strontium:	0	
Total Hardness:	3,960	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

### PROBABLE MINERAL COMPOSITION

168 Ca	7 HCO <sub>3</sub>		
30 Mg	94 SO <sub>4</sub>	Meq/L	mg/L
1,340 Na	1,437 Cl		
	Calcium Bicarbonate:	7	600
	Calcium Sulfate:	94	6,382
	Calcium Chloride:	67	3,710
	Magnesium Bicarbonate:	0	0
	Magnesium Sulfate:	0	0
	Magnesium Chloride:	30	1,429
	Sodium Bicarbonate:	0	0
	Sodium Sulfate:	0	0
	Sodium Chloride:	1,340	78,323

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: Cog 2-35 SWD

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

### Brine Composition

pH:	6.10	Ca, mg/L:	3,360	Total Hardness, mg/L:	3,960
Specific Gravity:	1.055	Mg, mg/L:	366	Total Dissolved Solids, mg/L:	90,518
HCO <sub>3</sub> , mg/L:	451	Na, mg/L:	30,815	Total Ionic Strength:	1,688
Cl, mg/L:	51,000	Ba, mg/L:	26		
SO <sub>4</sub> , mg/L:	4,500	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:	-0.55	-0.26	0.11	0.58	-0.13	0.20
Deposition, lbs/1,000 Bbls:	-547.2	-195.2	48.6	185.0	-86.3	86.3

### Calcium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	1.33	1.33	1.34	1.36	1.33	1.35
Deposition, lbs/1,000 Bbls:	547.5	550.7	571.6	595.6	557.2	576.4

### Barium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	650.67	539.28	374.94	255.93	461.88	343.22
Deposition, lbs/1,000 Bbls:	15.4	15.4	15.4	15.4	15.4	15.4

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## Scale Deposition Potential Trends

Company: Shakespeare  
Source: Cog 2-35 SWD

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

