

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	_____	_____	_____	_____	_____
	TOTAL	_____	_____	_____	_____	_____

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, 2018
Date Analyzed: February, 2018

pH:	6.00	Total Dissolved Solids (mg/L):	90,510
Dissolved H ₂ S:	20		
Dissolved CO ₂ :	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:	445	7
Chloride:	51,000	1,437
Sulfate:	4,500	94
Cations		
Calcium:	3,360	168
Magnesium:	366	30
Sodium:	30,812	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 ₃		
30 Mg	94 SO ₄	Meq/L	mg/L
1,340 Na	1,437 Cl		
Saturation Values			
In Distilled Water @ 20°C			
CaCO ₃	13 mg/L	Calcium Bicarbonate:	7 592
CaSO ₄ * 2H ₂ O	2,090 mg/L	Calcium Sulfate:	94 6,382
MgCO ₃	103 mg/L	Calcium Chloride:	67 3,716
		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 78,317

COMMENTS:

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Scale Deposition Potential Analysis

Company: Shakespeare
Source: Cog 2-35 SWD

Date Sampled: February, 2018
Date Analyzed: February, 2018

Brine Composition

pH:	6.00	Ca, mg/L:	3,360	Total Hardness, mg/L:	3,960
Specific Gravity:	1.055	Mg, mg/L:	366	Total Dissolved Solids, mg/L:	90,510
HCO ₃ , mg/L:	445	Na, mg/L:	30,812	Total Ionic Strength:	1.688
Cl, mg/L:	51,000	Ba, mg/L:	26		
SO ₄ , 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:	-0.66	-0.37	0.00	0.48	-0.23	0.09
Deposition, lbs/1,000 Bbls:	-713.2	-298.0	-4.6	163.1	-167.7	41.5

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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