

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

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

pH: 6.70
Dissolved H₂S: 20
Dissolved CO₂: 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
Anions		
Sulfide	97.6	97.6
Bicarbonate:	390	6
Chloride:	60,000	1,690
Sulfate:	2,600	54
Cations		
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 ₃		
58 Mg	54 SO ₄		
1,549 Na	1,690 Cl		
		Meq/L	mg/L
		Calcium Bicarbonate:	6 519
		Calcium Sulfate:	54 3,687
		Calcium Chloride:	83 4,630
		Magnesium Bicarbonate:	0 0
		Magnesium Sulfate:	0 0
		Magnesium Chloride:	58 2,762
		Sodium Bicarbonate:	0 0
		Sodium Sulfate:	0 0
		Sodium Chloride:	1,549 90,538

Saturation Values
In Distilled Water @ 20°C

CaCO ₃	13 mg/L		
CaSO ₄ * 2H ₂ O	2,090 mg/L		
MgCO ₃	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 ₃ , mg/L:	390	Na, mg/L:	35,620	Total Ionic Strength:	1.883
Cl, mg/L:	60,000	Ba, mg/L:	22		
SO ₄ , 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
Date Analyzed: February, 2019

