

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: Campbell 2-8 SWD

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

pH:	6.20	Total Dissolved Solids (mg/L):	103,989
Dissolved H ₂ S:	0		
Dissolved CO ₂ :	0	Total Ionic Strength:	1.930
Specific Gravity:	1.070		
Density, (lbs/gal):	8.92		

	mg/L	Meq/L
Anions		
Sulfide	521.6	521.6
Bicarbonate:	177	3
Chloride:	61,000	1,718
Sulfate:	3,100	65
Cations		
Calcium:	2,400	120
Magnesium:	1,147	94
Sodium:	36,151	1,572
Barium:	14	
Strontium:	0	
Total Hardness:	4,280	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

PROBABLE MINERAL COMPOSITION

120 Ca	3 HCO ₃		
94 Mg	65 SO ₄	Meq/L	mg/L
1,572 Na	1,718 Cl		
Saturation Values			
In Distilled Water @ 20°C			
CaCO ₃	13 mg/L	Calcium Bicarbonate:	3 235
CaSO ₄ * 2H ₂ O	2,090 mg/L	Calcium Sulfate:	65 4,396
MgCO ₃	103 mg/L	Calcium Chloride:	53 2,915
		Magnesium Bicarbonate:	0 0
		Magnesium Sulfate:	0 0
		Magnesium Chloride:	94 4,476
		Sodium Bicarbonate:	0 0
		Sodium Sulfate:	0 0
		Sodium Chloride:	1,572 91,887

COMMENTS:

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Scale Deposition Potential Analysis

Company: Shakespeare
Source: Campbell 2-8 SWD

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

Brine Composition

pH:	6.20	Ca, mg/L:	2,400	Total Hardness, mg/L:	4,280
Specific Gravity:	1.070	Mg, mg/L:	1,147	Total Dissolved Solids, mg/L:	103,989
HCO ₃ , mg/L:	177	Na, mg/L:	36,151	Total Ionic Strength:	1.930
Cl, mg/L:	61,000	Ba, mg/L:	14		
SO ₄ , mg/L:	3,100	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:	-0.94	-0.65	-0.30	0.18	-0.53	-0.20
Deposition, lbs/1,000 Bbls:	-617.7	-323.9	-98.2	30.9	-224.1	-61.9

Calcium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	0.79	0.80	0.81	0.82	0.80	0.81
Deposition, lbs/1,000 Bbls:	-400.7	-395.9	-372.9	-348.3	-387.8	-367.9

Barium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	212.32	150.98	108.67	76.25	132.83	100.63
Deposition, lbs/1,000 Bbls:	8.3	8.3	8.3	8.2	8.3	8.2

[Return To Main Menu](#)



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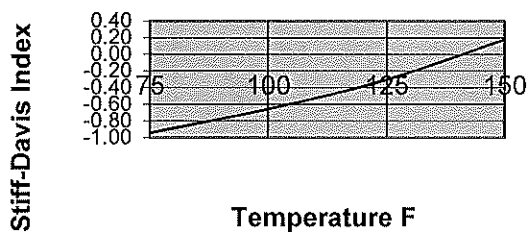
Phone: (785) 737-6141
Fax: (785) 434-2529

Scale Deposition Potential Trends

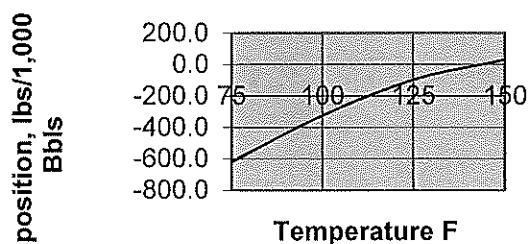
Company: Shakespeare
Source: Campbell 2-8 SWD

Date Sampled: February, 2019
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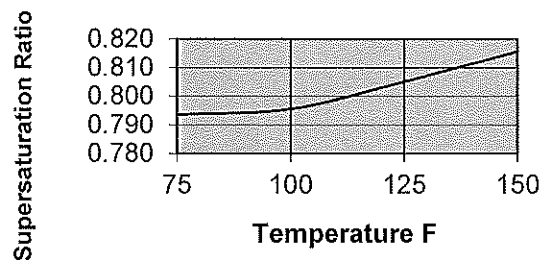
Calcium Carbonate



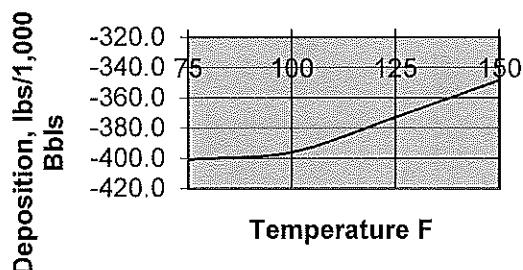
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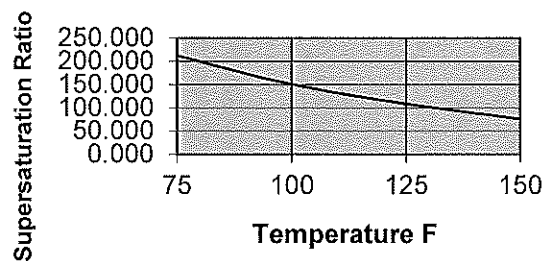
Calcium Sulfate



Calcium Sulfate



Barium Sulfate



Barium Sulfate

