

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: Royal Drilling  
Source: Walz A-2

Date Sampled: December 9, 2021  
Date Analyzed: December 12, 2021

pH:	7.50	Total Dissolved Solids (mg/L):	61,703
Dissolved H <sub>2</sub> S:	10		
Dissolved CO <sub>2</sub> :	0	Total Ionic Strength:	1.166
Specific Gravity:	1.045		
Density, (lbs/gal):	8.72		

	mg/L	Meq/L
<b>Anions</b>		
Sulfide	12.8	12.8
Bicarbonate:	805	13
Chloride:	36,000	1,014
Sulfate:	1,500	31
<b>Cations</b>		
Calcium:	2,440	122
Magnesium:	683	56
Sodium:	20,252	881
Barium:	23	
Strontium:	0	
Total Hardness:	3,560	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

### PROBABLE MINERAL COMPOSITION

122 Ca	13 HCO <sub>3</sub>		
56 Mg	31 SO <sub>4</sub>		
881 Na	1,014 Cl		
		Meq/L	mg/L
		Calcium Bicarbonate:	13 1,070
		Calcium Sulfate:	31 2,127
		Calcium Chloride:	78 4,304
		Magnesium Bicarbonate:	0 0
		Magnesium Sulfate:	0 0
		Magnesium Chloride:	56 2,667
		Sodium Bicarbonate:	0 0
		Sodium Sulfate:	0 0
		Sodium Chloride:	881 51,476

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: Indicating normal formation water. The well does have the potential to precipitate Calcium Carbonate (CaCO<sub>3</sub>) Scale. No recommendations at this time.**

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## Scale Deposition Potential Analysis

Company: Royal Drilling  
Source: Walz A-2

Date Sampled: December 9, 2021  
Date Analyzed: December 12, 2021

### Brine Composition

pH:	7.50	Ca, mg/L:	2,440	Total Hardness, mg/L:	3,560
Specific Gravity:	1.045	Mg, mg/L:	683	Total Dissolved Solids, mg/L:	61,703
HCO <sub>3</sub> , mg/L:	805	Na, mg/L:	20,252	Total Ionic Strength:	1.166
Cl, mg/L:	36,000	Ba, mg/L:	23	Total Dissolved Iron, mg/L:	0.0
SO <sub>4</sub> , mg/L:	1,500	Sr, mg/L:	0		

### Calcium Carbonate Scale Indices

Temperature, °F:	75	100	125	150	Specified Temperatures	110	130
Stiff-Davis Index:	0.94	1.21	1.61	2.07		1.36	1.70
Deposition, lbs/1,000 Bbls:	398.2	428.0	447.6	457.0		437.0	450.4

### Calcium Sulfate Scale Indices

Temperature, °F:	75	100	125	150	Specified Temperatures	110	130
Supersaturation Ratio:	0.55	0.56	0.56	0.57		0.56	0.56
Deposition, lbs/1,000 Bbls:	-600.0	-596.7	-579.0	-552.5		-589.7	-575.4

### Barium Sulfate Scale Indices

Temperature, °F:	75	100	125	150	Specified Temperatures	110	130
Supersaturation Ratio:	252.02	203.74	141.07	96.15		174.49	129.11
Deposition, lbs/1,000 Bbls:	13.6	13.6	13.6	13.5		13.6	13.6

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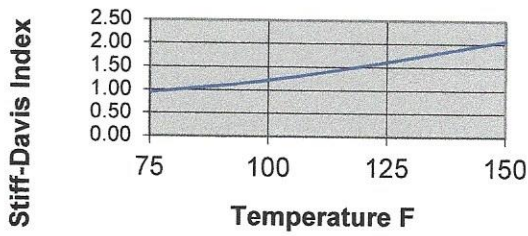
Phone: (785) 737-6141  
Fax: (785) 434-2529

**Scale Deposition Potential Trends**

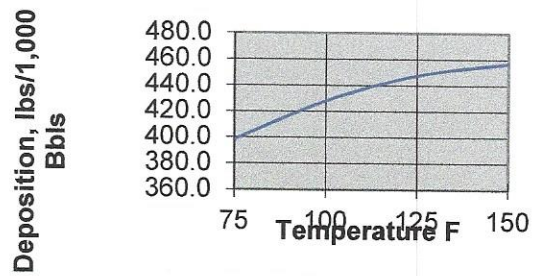
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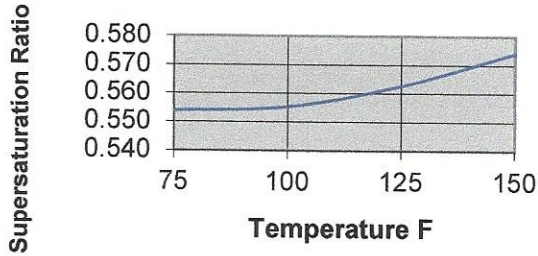
**Calcium Carbonate**



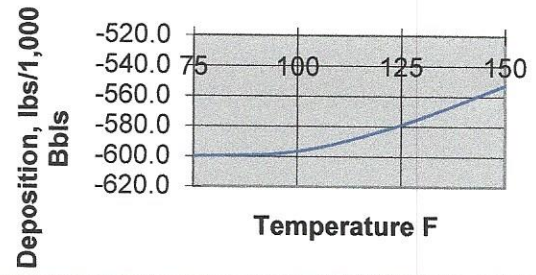
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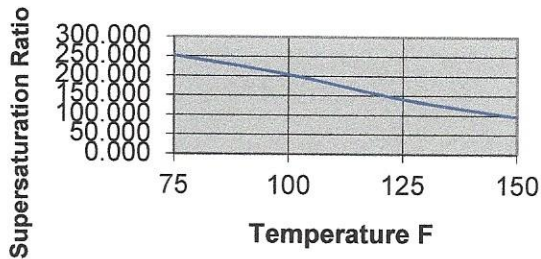
**Calcium Sulfate**



**Calcium Sulfate**



**Barium Sulfate**



**Barium Sulfate**

