



# 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: Campbell #2-8 SWD

Date Sampled: 1-19-16  
Date Analyzed: 1-26-16

pH:	6.00	Total Dissolved Solids (mg/L):	125,401
Dissolved H <sub>2</sub> S:	0		
Dissolved CO <sub>2</sub> :	0	Total Ionic Strength:	2.266
Specific Gravity:	1.070		
Density, (lbs/gal):	8.92		

	mg/L	Meq/L
<b>Anions</b>		
Sulfide	0	0
Bicarbonate:	183	3
Chloride:	74,000	2,085
Sulfate:	2,700	56
<b>Cations</b>		
Calcium:	2,840	142
Magnesium:	415	34
Sodium:	45,258	1,968
Barium:	5	
Strontium:	0	
Total Hardness:	3,520	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

### PROBABLE MINERAL COMPOSITION

142 Ca	3 HCO <sub>3</sub>		
34 Mg	56 SO <sub>4</sub>		
1,968 Na	2,085 Cl		
		Meq/L	mg/L
		Calcium Bicarbonate:	3 243
		Calcium Sulfate:	56 3,829
		Calcium Chloride:	83 4,593
		Magnesium Bicarbonate:	0 0
		Magnesium Sulfate:	0 0
		Magnesium Chloride:	34 1,619
		Sodium Bicarbonate:	0 0
		Sodium Sulfate:	0 0
		Sodium Chloride:	1,968 115,035

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: Campbell #2-8 SWD

Date Sampled: 1-19-16  
Date Analyzed: 1-26-16

### Brine Composition

pH:	6.00	Ca, mg/L:	2,840	Total Hardness, mg/L:	3,520
Specific Gravity:	1.070	Mg, mg/L:	415	Total Dissolved Solids, mg/L:	125,401
HCO <sub>3</sub> , mg/L:	183	Na, mg/L:	45,258	Total Ionic Strength:	2.266
Cl, mg/L:	74,000	Ba, mg/L:	5	Total Dissolved Iron, mg/L:	0.2
SO <sub>4</sub> , mg/L:	2,700	Sr, mg/L:	0		

### Calcium Carbonate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Stiff-Davis Index:	-0.98	-0.68	-0.34	0.12	-0.55	-0.25
Deposition, lbs/1,000 Bbls:	-714.8	-371.0	-122.9	22.0	-261.1	-82.5

### Calcium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	0.76	0.76	0.77	0.78	0.77	0.77
Deposition, lbs/1,000 Bbls:	-423.7	-417.9	-396.7	-385.1	-409.7	-392.3

### Barium Sulfate Scale Indices

					Specified Temperatures	
Temperature, °F:	75	100	125	150	110	130
Supersaturation Ratio:	58.91	42.76	30.89	21.99	37.57	28.70
Deposition, lbs/1,000 Bbls:	2.9	2.9	2.9	2.8	2.9	2.9

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**CAMPBELL 2-8 LIST OF LEASES**

CAMPBELL 1-8

FREY 1-9

FREY 2-9

PETERSON 1-8