



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 67663Phone: (785) 737-6141
Fax: (785) 434-2529**WATER ANALYSIS REPORT**Company: Shakespeare
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.Date Sampled: 1-19-16
Date Analyzed: 1-26-16

pH:	6.00	Total Dissolved Solids (mg/L):	113,906
Dissolved H ₂ S:	0		
Dissolved CO ₂ :	0	Total Ionic Strength:	2.029
Specific Gravity:	1.065		
Density, (lbs/gal):	8.88		

	mg/L	Meq/L
Anions		
Sulfide	393.6	393.6
Bicarbonate:	433	7
Chloride:	69,000	1,944
Sulfate:	200	4
Cations		
Calcium:	1,920	96
Magnesium:	464	38
Sodium:	41,881	1,821
Barium:	8	
Strontium:	0	
Total Hardness:	2,680	
Total Dissolved Iron:	0	
Ferrous Iron:	Not Determined	

PROBABLE MINERAL COMPOSITION

96 Ca	7 HCO ₃		
38 Mg	4 SO ₄		
1,821 Na	1,944 Cl		
		Meq/L	mg/L
		7	575
		4	284
		85	4,703
		0	0
		0	0
		38	1,810
		0	0
		0	0
		1,821	106,452

Saturation Values		In Distilled Water @ 20°C	
CaCO ₃	13 mg/L	Sodium Bicarbonate:	0
CaSO ₄ * 2H ₂ O	2,090 mg/L	Sodium Sulfate:	0
MgCO ₃	103 mg/L	Sodium Chloride:	1,821

COMMENTS:

STAABCO CHEMICAL, INC.

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Scale Deposition Potential Analysis

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

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

Brine Composition

pH:	6.00	Ca, mg/L:	1,920	Total Hardness, mg/L:	2,680
Specific Gravity:	1.065	Mg, mg/L:	464	Total Dissolved Solids, mg/L:	113,906
HCO ₃ , mg/L:	433	Na, mg/L:	41,881	Total Ionic Strength:	2.029
Cl, mg/L:	69,000	Ba, mg/L:	8	Total Dissolved Iron, mg/L:	0.0
SO ₄ , mg/L:	200	Sr, mg/L:	0		

Calcium Carbonate Scale Indices

	75	100	125	150	Specified Temperatures	
Temperature, °F:					110	130
Stiff-Davis Index:	-0.84	-0.54	-0.18	0.28	-0.40	-0.09
Deposition, lbs/1,000 Bbls:	-898.5	-463.1	-126.4	106.1	-319.8	-62.3

Calcium Sulfate Scale Indices

	75	100	125	150	Specified Temperatures	
Temperature, °F:					110	130
Supersaturation Ratio:	0.06	0.06	0.06	0.06	0.06	0.06
Deposition, lbs/1,000 Bbls:	-1569.9	#####	-1543.3	-1524.8	-1557.1	-1538.6

Barium Sulfate Scale Indices

	75	100	125	150	Specified Temperatures	
Temperature, °F:					110	130
Supersaturation Ratio:	7.37	5.28	3.82	2.70	4.65	3.54
Deposition, lbs/1,000 Bbls:	4.1	3.9	3.5	3.0	3.7	3.4

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