

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	_____	_____	_____	_____	_____

Submitted Electronically

Complete Water Analysis

Customer: **SHAKESPEARE OIL COMPANY**
 Formation Zone:
 Geographic Region: **Kansas**
 Geographic Location: **Lane County**
 System Description: **Production System**

Equipment Description: **Ehmke 2-29**
 Sample Point: **Bleeder**
 Customer ID:
 Latitude/Longitude: **0.00, 0.00**
 Account Rep: **Michael.walters@championx.com**

Collect Date: **02/20/2024**
 Submit Date: **02/20/2024**
 Report Date: **02/22/2024**
 Sample ID: **AX37088**
 Location Code: **430672**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO ₃)	127 mg/L	Titration
Dissolved CO ₂	190 mg/L	Titration
Dissolved H ₂ S	75 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.045	Densitometer
Ionic Strength	0.880 mol/L	Calculation
Total Dissolved Solids	49200 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO ₂ in the gas	0.0100 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	20.9 mg/L	Silicon	6.95 mg/L
Manganese	<0.200 mg/L	Lithium	3.96 mg/L	Aluminum	<0.400 mg/L
Barium	<0.100 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	32.7 mg/L	Nickel	<0.200 mg/L	Phosphorus	0.622 mg/L
Calcium	687 mg/L	Zinc	<0.400 mg/L	Measured Sodium	14900 mg/L
Magnesium	318 mg/L	Lead	<0.500 mg/L		
Sodium	14900 mg/L	Cobalt	<0.500 mg/L		
Potassium	220 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC*

Chloride	29000 mg/L	Bromide	25.7 mg/L	Sulfate	3870 mg/L
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PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	0.00	2.66	0.00	0.00	0.00	0.00
75°	0.00	0.00	0.00	2.06	0.00	0.00	0.00	0.00
100°	0.00	0.00	0.00	2.90	0.00	0.00	0.00	0.00
125°	0.00	0.00	0.00	4.59	0.00	0.00	0.00	0.00
150°	0.00	0.00	0.00	6.73	0.00	0.00	0.00	0.00
175°	0.00	0.00	0.00	8.99	0.00	0.00	0.00	0.00
200°	137.49	0.00	0.00	11.18	0.00	0.00	0.00	0.00
225°	273.15	0.00	0.00	13.19	0.00	0.00	0.00	0.00
250°	381.53	0.00	0.00	14.97	0.00	0.00	0.00	0.00
275°	468.56	0.00	0.00	16.51	0.00	0.00	0.00	0.00
300°	538.79	0.00	0.00	17.82	0.00	0.00	0.00	0.00
325°	595.66	0.00	0.00	18.92	0.00	0.00	0.00	0.00
350°	641.75	0.00	0.00	19.82	0.00	0.00	0.00	0.00
375°	679.03	0.00	0.00	20.56	0.00	0.00	0.00	0.00
400°	709.00	0.00	0.00	21.16	313.25	0.00	0.00	0.00

SI

	Anhydrite	Calcite	Celestite	Gypsum	Halite
50°	-0.88	-0.74	0.05	-0.27	-2.18
75°	-0.68	-0.76	0.04	-0.29	-2.22
100°	-0.49	-0.76	0.06	-0.29	-2.24
125°	-0.33	-0.77	0.09	-0.27	-2.25
150°	-0.17	-0.76	0.14	-0.26	-2.26
175°	-0.03	-0.76	0.20	-0.25	-2.26
200°	0.11	-0.74	0.20	-0.25	-2.26
225°	0.24	-0.71	0.35	-0.26	-2.25
250°	0.37	-0.68	0.43	-0.28	-2.24
275°	0.49	-0.63	0.51	-0.29	-2.23
300°	0.61	-0.58	0.59	-0.29	-2.21
325°	0.73	-0.52	0.68	-0.26	-2.19
350°	0.84	-0.45	0.76	-0.18	-2.16
375°	0.96	-0.37	0.84	-0.03	-2.13
400°	1.08	-0.28	0.93	0.22	-2.09

Comments

Scaling predictions calculated using Scale Soft Pitzer 2019

Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

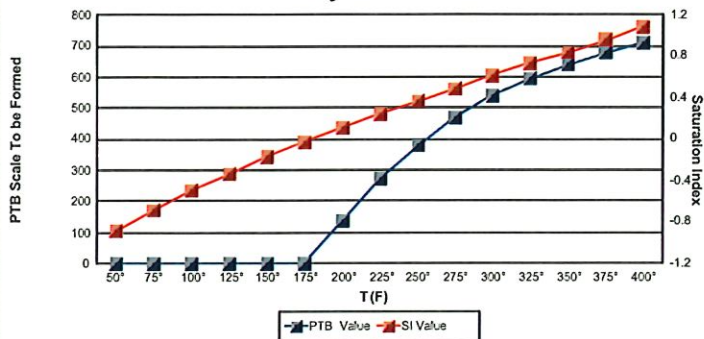
Complete Water Analysis

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 Geographic Region: **Kansas**
 Geographic Location: **Lane County**
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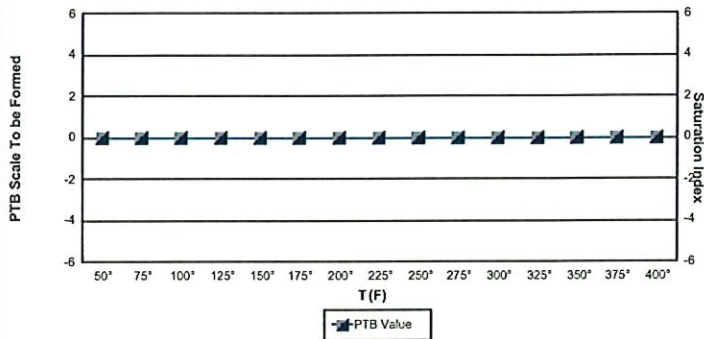
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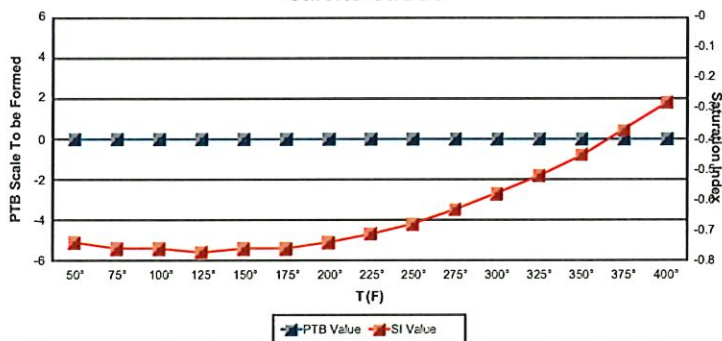
Anhydrite CaSO₄



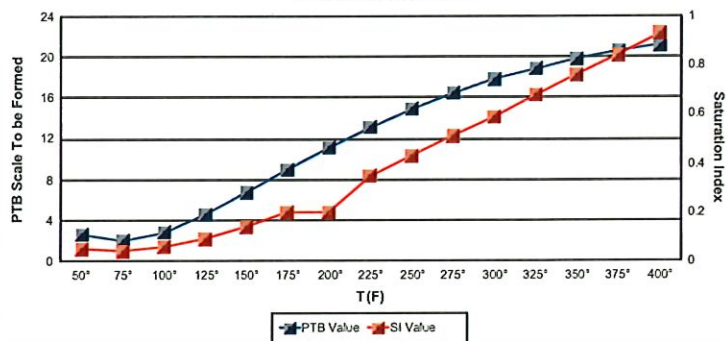
Barite BaSO₄



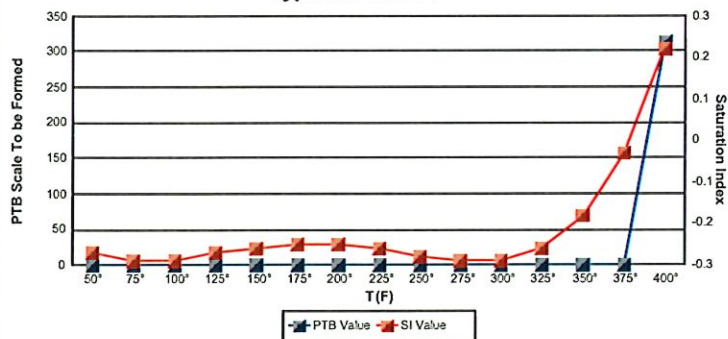
Calcite CaCO₃



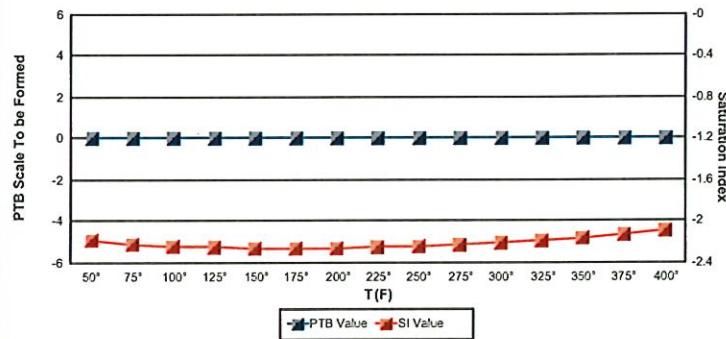
Celestite SrSO₄



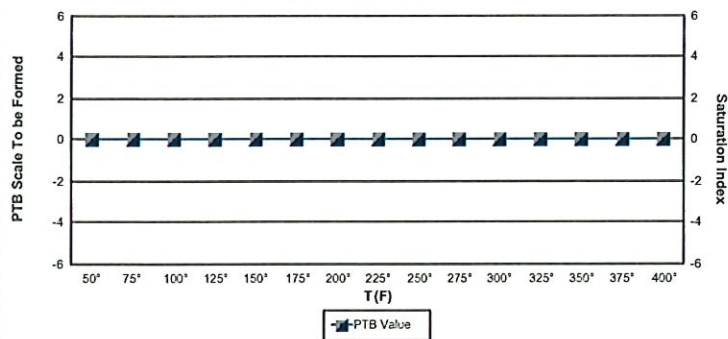
Gypsum CaSO₄



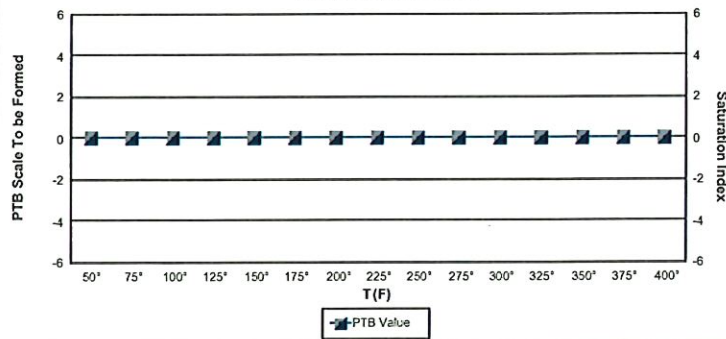
Halite NaCl



Iron Carbonate FeCO₃



Iron Sulfide FeS



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