

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	_____	_____	_____	_____	_____

Complete Water Analysis

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

Equipment Description: **Robbins Trust 1-26**
 Sample Point: **Bleeder**
 Sample ID: **AV13087**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430664**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	156 mg/L	Titration
Dissolved CO2	180 mg/L	Titration
Dissolved H2S	140 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 °F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.044	Densitometer
Ionic Strength	1.01 mol/L	Calculation
Total Dissolved Solids	55800 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.00 %	Calculation

Cations - Analyzed By ICP

Iron	9.30 mg/L	Boron	23.6 mg/L	Silicon	8.65 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	0.103 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	33.3 mg/L	Nickel	<0.200 mg/L	Phosphorus	2.20 mg/L
Calcium	928 mg/L	Zinc	0.624 mg/L	Measured Sodium	19000 mg/L
Magnesium	324 mg/L	Lead	<0.500 mg/L		
Sodium	19000 mg/L	Cobalt	0.793 mg/L		
Potassium	216 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	31200 mg/L	Sulfate	3870 mg/L
Bromide	26.4 mg/L		

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.05	0.00	0.00	0.00	0.00	0.00	5.13
75°	0.00	0.04	0.00	0.00	0.00	0.00	0.00	5.12
100°	0.00	0.03	0.00	0.04	0.00	0.00	0.00	5.11
125°	0.00	0.02	0.00	2.25	0.00	0.00	0.00	5.10
150°	0.00	0.00	0.00	4.86	0.00	0.00	0.00	5.08
175°	53.25	0.00	0.00	7.53	0.00	0.00	0.00	5.08
200°	247.66	0.00	0.00	10.06	0.00	0.00	0.00	5.07
225°	403.46	0.00	0.00	12.36	0.00	0.00	0.00	5.07
250°	529.81	0.00	0.00	14.36	0.00	0.00	0.00	5.07
275°	633.12	0.00	0.00	16.08	0.00	0.00	0.00	5.08
300°	718.32	0.00	0.00	17.53	0.00	0.00	0.00	5.09
325°	789.04	0.00	0.00	18.75	0.00	0.00	0.00	5.09
350°	847.97	0.00	0.00	19.75	0.00	0.00	0.00	5.10
375°	897.09	0.00	0.00	20.57	12.30	0.00	0.00	5.11
400°	937.82	0.00	0.00	21.22	436.77	0.00	0.00	5.11

SI

	Anhydrite	Barite	Celestite	Gypsum	Halite	Iron Sulfide
50°	-0.83	0.79	-0.02	-0.23	-2.05	3.03
75°	-0.62	0.54	-0.02	-0.24	-2.08	2.72
100°	-0.44	0.33	0.00	-0.24	-2.10	2.48
125°	-0.27	0.17	0.04	-0.22	-2.12	2.30
150°	-0.11	0.04	0.10	-0.20	-2.13	2.18
175°	0.03	-0.07	0.16	-0.19	-2.13	2.10
200°	0.17	-0.15	0.16	-0.20	-2.12	2.08
225°	0.30	-0.21	0.31	-0.21	-2.12	2.06
250°	0.42	-0.26	0.39	-0.23	-2.11	2.08
275°	0.54	-0.29	0.47	-0.25	-2.10	2.12
300°	0.66	-0.32	0.55	-0.25	-2.08	2.18
325°	0.77	-0.35	0.63	-0.22	-2.06	2.27
350°	0.89	-0.38	0.72	-0.14	-2.03	2.37
375°	1.00	-0.41	0.80	0.01	-2.01	2.48
400°	1.11	-0.45	0.88	0.25	-1.97	2.60

Comments

Scaling predictions calculated using Scale Soft Pitzer 2010

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

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 02/24/2023

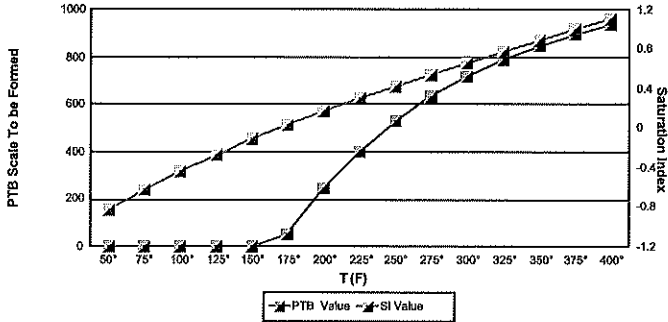
Complete Water Analysis

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

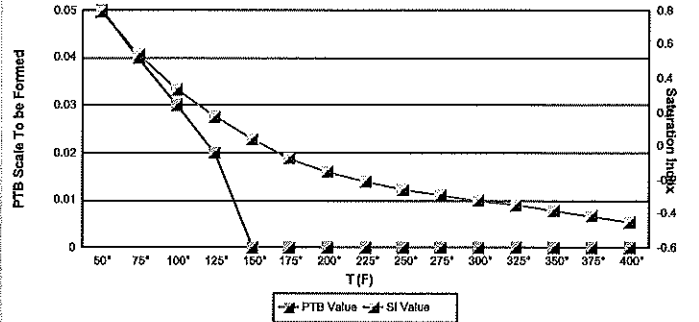
Equipment Description: Robbins Trust 1-26
 Sample Point: Bleeder
 Sample ID: AV13087
 Account Rep: Michael.Walters@championx.com

Collection Date: 02/16/2023
 Receive Date: 02/22/2023
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 Location Code: 430664

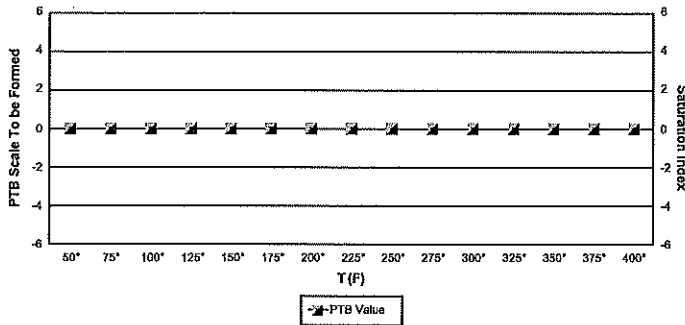
Anhydrite CaSO₄



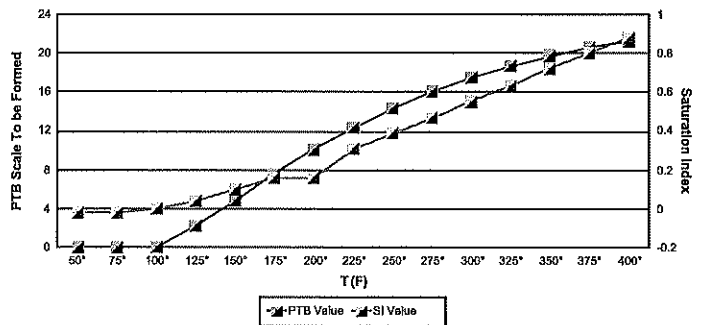
Barite BaSO₄



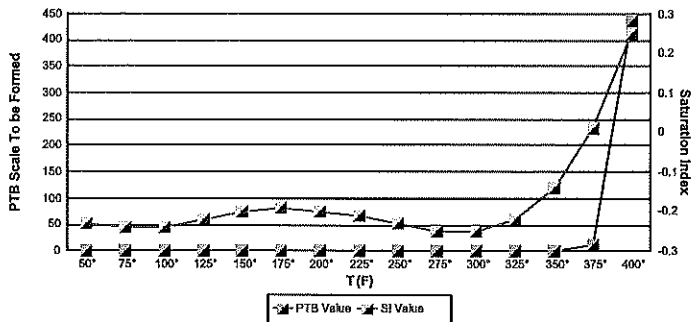
Calcite CaCO₃



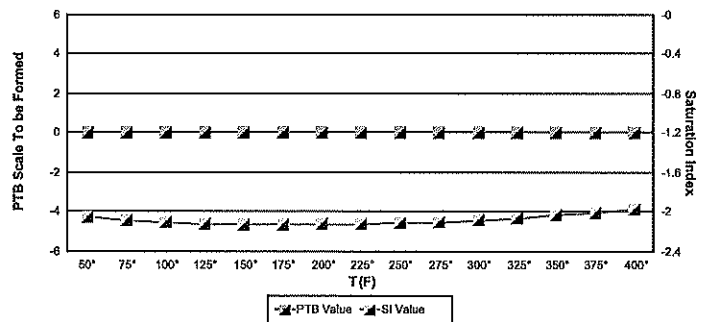
Celestite SrSO₄



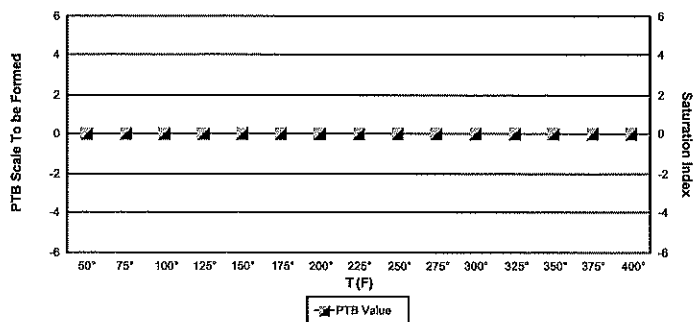
Gypsum CaSO₄



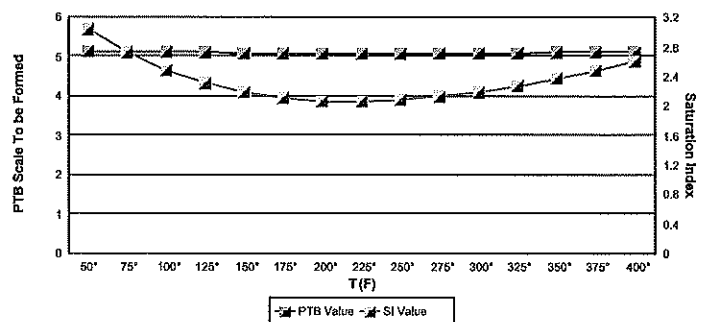
Halite NaCl



Iron Carbonate FeCO₃



Iron Sulfide FeS



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.

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