

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**
 Geographic Region: **Kansas**
 Geographic Location: **Lane County**
 System Description: **Production System**

Equipment Description: **Harper Taldo 1-22**
 Sample Point: **Bleeder**
 Sample ID: **AV13104**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430647**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO ₃)	146 mg/L	Titration
Dissolved CO ₂	240 mg/L	Titration
Dissolved H ₂ S	100 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.041	Densitometer
Ionic Strength	0.940 mol/L	Calculation
Total Dissolved Solids	52300 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO ₂ in the gas	0.00 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	23.1 mg/L	Silicon	8.13 mg/L
Manganese	0.307 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	0.101 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	35.2 mg/L	Nickel	<0.200 mg/L	Phosphorus	4.97 mg/L
Calcium	747 mg/L	Zinc	<0.400 mg/L	Measured Sodium	18300 mg/L
Magnesium	294 mg/L	Lead	<0.500 mg/L		
Sodium	18300 mg/L	Cobalt	0.738 mg/L		
Potassium	201 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	29200 mg/L	Sulfate	3360 mg/L
Bromide	26.6 mg/L		

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Hallite	Iron Carbonate	Iron Sulfide
50°	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.02	0.00	1.60	0.00	0.00	0.00	0.00
150°	0.00	0.00	0.00	4.51	0.00	0.00	0.00	0.00
175°	0.00	0.00	0.00	7.49	0.00	0.00	0.00	0.00
200°	55.84	0.00	0.00	10.31	0.00	0.00	0.00	0.00
225°	209.73	0.00	0.00	12.84	0.00	0.00	0.00	0.00
250°	334.45	0.00	0.00	15.06	0.00	0.00	0.00	0.00
275°	436.33	0.00	0.00	16.95	0.00	0.00	0.00	0.00
300°	520.21	0.00	0.00	18.55	0.00	0.00	0.00	0.00
325°	589.67	0.00	0.00	19.87	0.00	0.00	0.00	0.00
350°	647.35	0.00	0.00	20.96	0.00	0.00	0.00	0.00
375°	695.22	0.00	0.00	21.84	0.00	0.00	0.00	0.00
400°	734.71	0.00	0.00	22.55	231.75	0.00	0.00	0.00

SI

	Anhydrite	Barite	Celestite	Gypsum	Hallite
50°	-0.97	0.74	-0.04	-0.36	-2.09
75°	-0.76	0.49	-0.04	-0.38	-2.12
100°	-0.57	0.29	-0.01	-0.37	-2.15
125°	-0.40	0.13	0.03	-0.35	-2.16
150°	-0.24	0.00	0.08	-0.33	-2.17
175°	-0.10	-0.11	0.15	-0.32	-2.17
200°	0.04	-0.18	0.15	-0.32	-2.17
225°	0.18	-0.24	0.30	-0.33	-2.16
250°	0.30	-0.29	0.38	-0.35	-2.15
275°	0.42	-0.32	0.47	-0.36	-2.14
300°	0.54	-0.35	0.55	-0.36	-2.12
325°	0.66	-0.38	0.64	-0.33	-2.10
350°	0.78	-0.40	0.73	-0.25	-2.07
375°	0.89	-0.43	0.81	-0.10	-2.04
400°	1.01	-0.46	0.90	0.15	-2.01

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.

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 02/24/2023

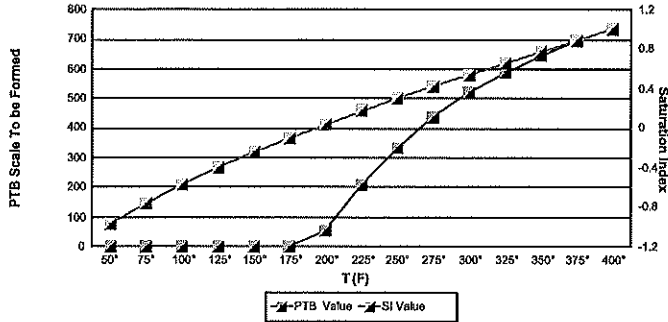
Complete Water Analysis

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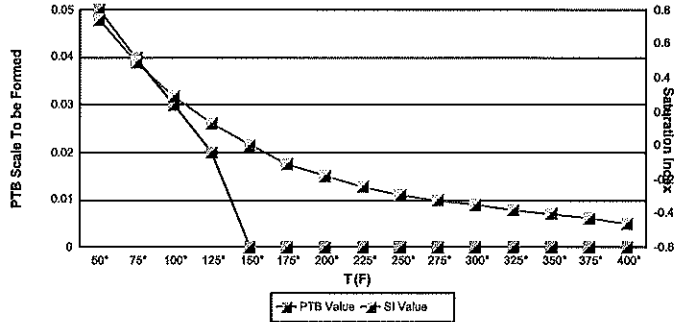
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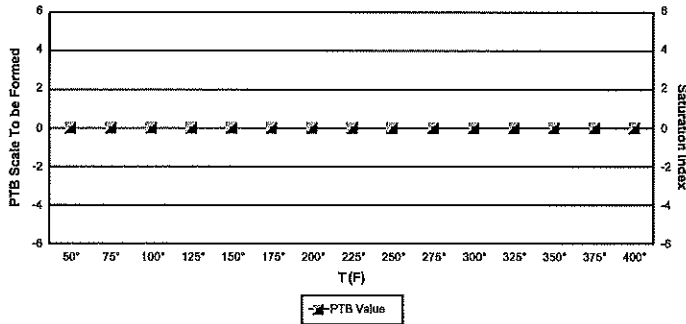
Anhydrite CaSO4



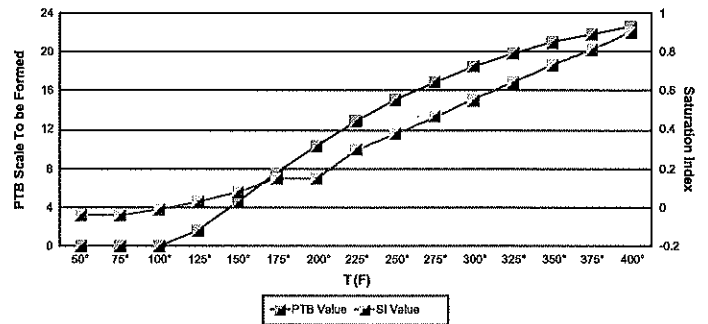
Barite BaSO4



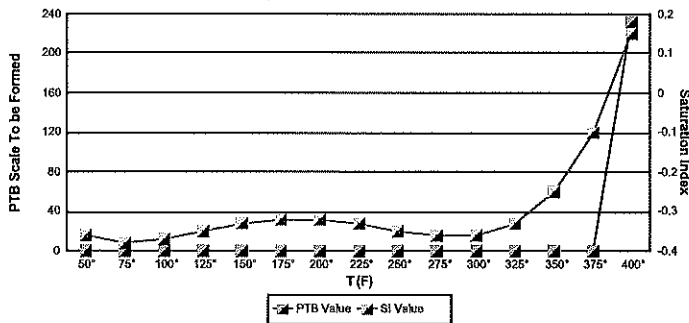
Calcite CaCO3



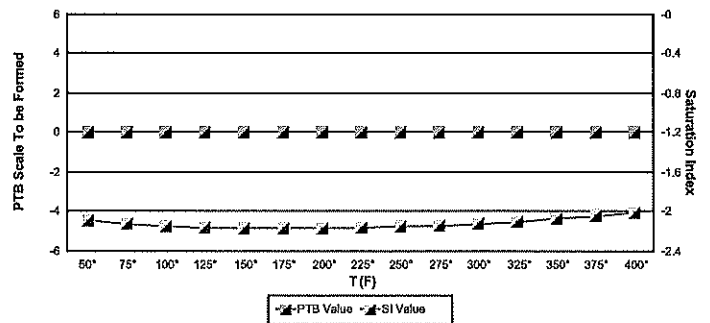
Celestite SrSO4



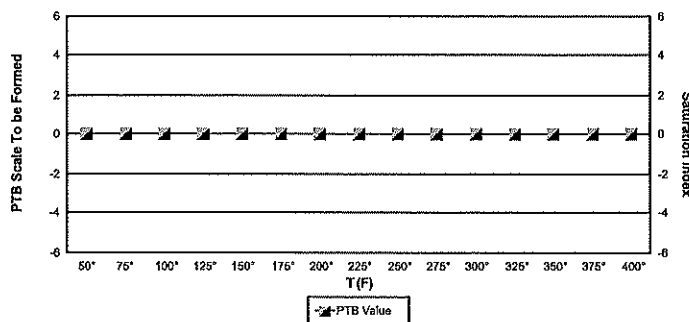
Gypsum CaSO4



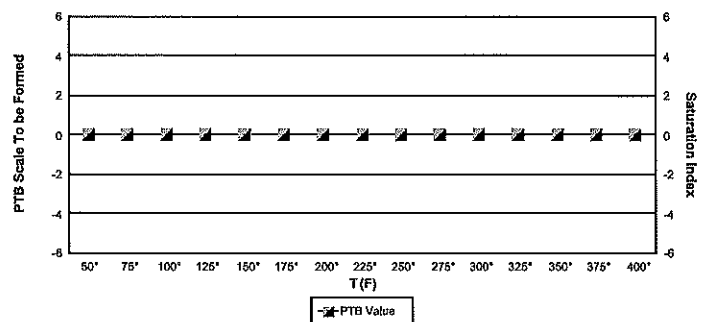
Halite NaCl



Iron Carbonate FeCO3



Iron Sulfide FeS



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