

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: **Snider 1 SWD**
 Sample Point: **Bleeder**
 Sample ID: **AV13077**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430654**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	268 mg/L	Titration
Dissolved CO2	240 mg/L	Titration
Dissolved H2S	120 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 °F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.050	Densitometer
Ionic Strength	1.21 mol/L	Calculation
Total Dissolved Solids	67000 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.100 %	Calculation

Cations - Analyzed By ICP

Iron	1.08 mg/L	Boron	23.8 mg/L	Silicon	8.10 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	0.104 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	32.9 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	1250 mg/L	Zinc	2.26 mg/L	Measured Sodium	22100 mg/L
Magnesium	410 mg/L	Lead	<0.500 mg/L		
Sodium	22100 mg/L	Cobalt	0.970 mg/L		
Potassium	262 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	38100 mg/L	Sulfate	4550 mg/L
Bromide	31.8 mg/L		

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.05	17.64	0.00	0.00	0.00	0.00	0.59
75°	0.00	0.04	17.47	0.00	0.00	0.00	0.00	0.59
100°	0.00	0.03	17.40	0.72	0.00	0.00	0.00	0.59
125°	0.00	0.02	17.52	2.85	0.00	0.00	0.00	0.59
150°	67.34	0.01	17.85	5.32	0.00	0.00	0.00	0.59
175°	325.81	0.00	18.39	7.83	0.00	0.00	0.00	0.59
200°	530.13	0.00	19.11	10.21	0.00	0.00	0.00	0.59
225°	694.29	0.00	19.99	12.35	0.00	0.00	0.00	0.59
250°	827.94	0.00	21.02	14.22	0.00	0.00	0.00	0.59
275°	937.81	0.00	22.18	15.83	0.00	0.00	0.00	0.59
300°	1,029.09	0.00	23.47	17.19	0.00	0.00	0.00	0.59
325°	1,105.61	0.00	24.88	18.34	0.00	0.00	0.00	0.59
350°	1,170.17	0.00	26.40	19.29	0.00	0.00	0.00	0.59
375°	1,224.82	0.00	28.05	20.08	231.13	0.00	0.00	0.59
400°	1,270.96	0.00	29.79	20.71	706.09	0.00	0.00	0.59

SI

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	-0.68	0.79	0.42	-0.01	-0.08	-1.90	-1.29	2.53
75°	-0.47	0.54	0.43	-0.01	-0.10	-1.93	-1.18	2.24
100°	-0.29	0.34	0.44	0.01	-0.09	-1.95	-1.07	2.03
125°	-0.12	0.17	0.47	0.05	-0.08	-1.96	-0.98	1.89
150°	0.03	0.04	0.50	0.11	-0.06	-1.97	-0.89	1.80
175°	0.17	-0.07	0.54	0.17	-0.06	-1.97	-0.81	1.76
200°	0.31	-0.15	0.60	0.17	-0.06	-1.97	-0.74	1.75
225°	0.43	-0.21	0.66	0.31	-0.08	-1.97	-0.68	1.78
250°	0.55	-0.26	0.73	0.39	-0.11	-1.96	-0.63	1.82
275°	0.66	-0.31	0.81	0.46	-0.13	-1.95	-0.58	1.89
300°	0.77	-0.34	0.89	0.54	-0.14	-1.93	-0.55	1.97
325°	0.88	-0.38	0.98	0.62	-0.12	-1.92	-0.53	2.05
350°	0.99	-0.41	1.07	0.70	-0.05	-1.89	-0.52	2.15
375°	1.09	-0.45	1.16	0.77	0.09	-1.87	-0.52	2.25
400°	1.19	-0.50	1.24	0.85	0.33	-1.84	-0.54	2.35

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.

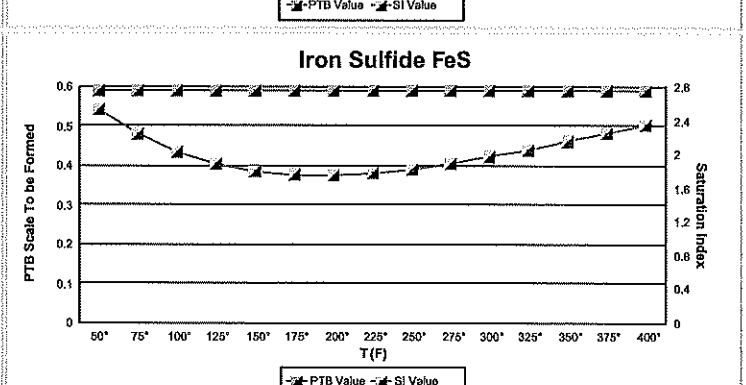
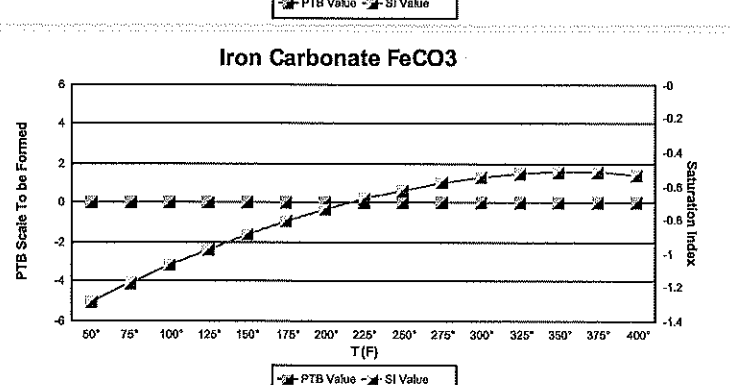
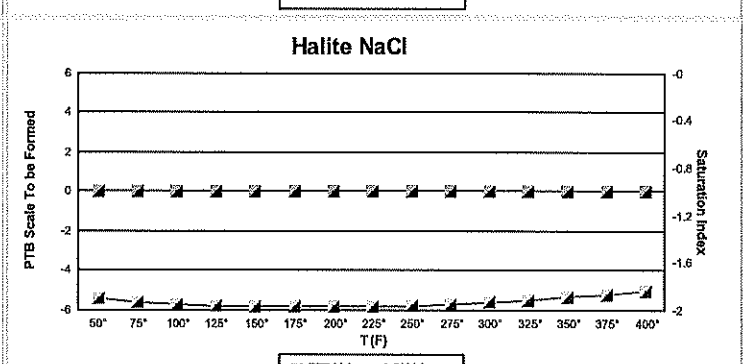
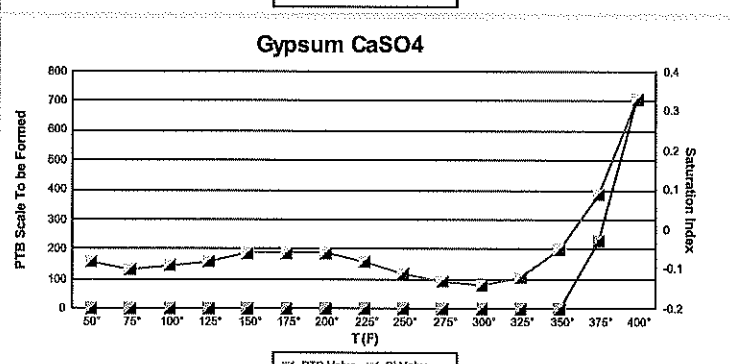
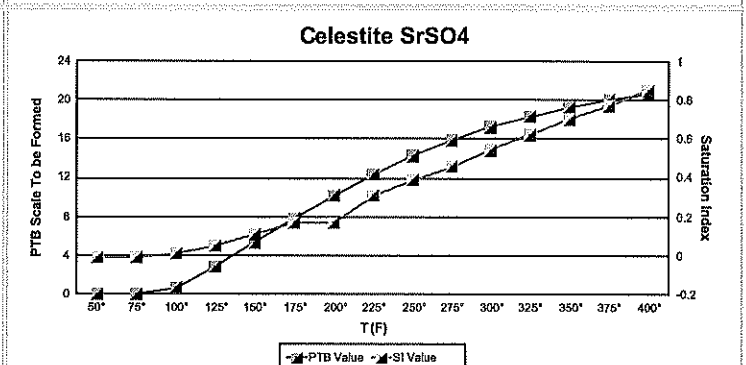
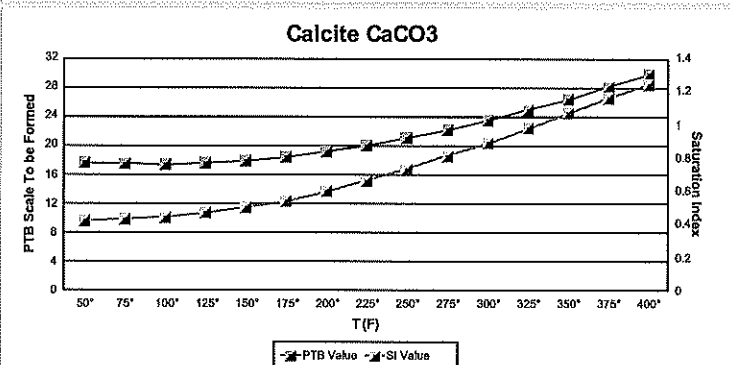
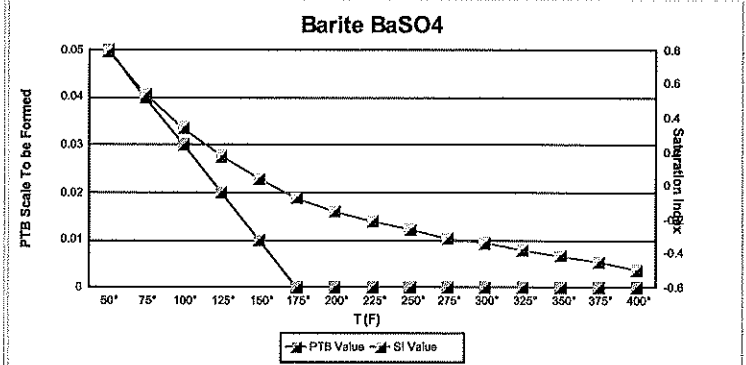
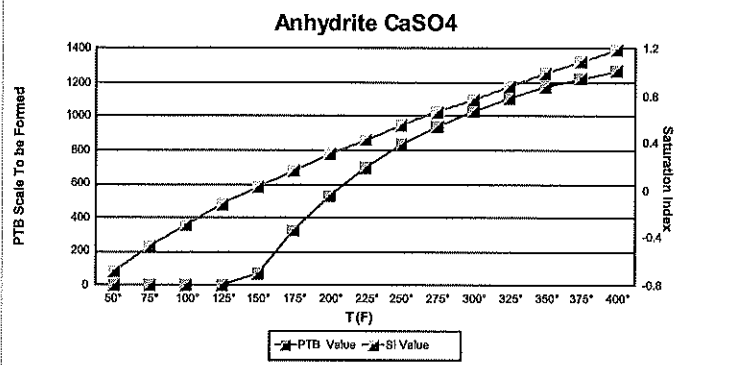
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 02/24/2023

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 Geographic Location: Lane County
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Equipment Description: Snider 1 SWD
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 02/24/2023