

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: **Easton A2**
 Sample Point: **SWD**
 Sample ID: **AV13072**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **503167**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO ₃)	161 mg/L	Titration
Dissolved CO ₂	200 mg/L	Titration
Dissolved H ₂ S	71 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 °F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.059	Densitometer
Ionic Strength	1.37 mol/L	Calculation
Total Dissolved Solids	77200 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO ₂ in the gas	0.0600 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	26.0 mg/L	Silicon	6.93 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	0.148 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	52.4 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	877 mg/L	Zinc	<0.400 mg/L	Measured Sodium	27700 mg/L
Magnesium	351 mg/L	Lead	<0.500 mg/L		
Sodium	27700 mg/L	Cobalt	0.921 mg/L		
Potassium	324 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	45500 mg/L	Sulfate	2200 mg/L
Bromide	38.4 mg/L		

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.06	1.43	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.05	1.79	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.02	2.23	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	2.83	0.00	0.00	0.00	0.00	0.00
150°	0.00	0.00	3.56	0.00	0.00	0.00	0.00	0.00
175°	0.00	0.00	4.42	5.46	0.00	0.00	0.00	0.00
200°	0.00	0.00	5.34	10.65	0.00	0.00	0.00	0.00
225°	0.00	0.00	6.30	15.22	0.00	0.00	0.00	0.00
250°	102.12	0.00	7.27	19.13	0.00	0.00	0.00	0.00
275°	223.89	0.00	8.25	22.42	0.00	0.00	0.00	0.00
300°	326.65	0.00	9.24	25.18	0.00	0.00	0.00	0.00
325°	414.58	0.00	10.23	27.46	0.00	0.00	0.00	0.00
350°	490.74	0.00	11.24	29.35	0.00	0.00	0.00	0.00
375°	557.31	0.00	12.28	30.90	0.00	0.00	0.00	0.00
400°	615.73	0.00	13.37	32.15	0.00	0.00	0.00	0.00

SI

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite
50°	-1.20	0.57	0.05	-0.17	-0.61	-1.71
75°	-0.98	0.34	0.07	-0.16	-0.61	-1.74
100°	-0.78	0.14	0.09	-0.12	-0.60	-1.76
125°	-0.61	-0.01	0.12	-0.07	-0.57	-1.77
150°	-0.45	-0.14	0.15	0.00	-0.55	-1.78
175°	-0.30	-0.24	0.20	0.07	-0.54	-1.78
200°	-0.16	-0.31	0.26	0.07	-0.54	-1.78
225°	-0.04	-0.38	0.32	0.22	-0.56	-1.78
250°	0.09	-0.42	0.39	0.30	-0.58	-1.77
275°	0.20	-0.46	0.47	0.39	-0.60	-1.76
300°	0.32	-0.50	0.54	0.47	-0.60	-1.75
325°	0.43	-0.53	0.62	0.55	-0.58	-1.73
350°	0.53	-0.56	0.69	0.63	-0.51	-1.71
375°	0.64	-0.60	0.76	0.71	-0.36	-1.69
400°	0.75	-0.64	0.83	0.79	-0.13	-1.66

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.

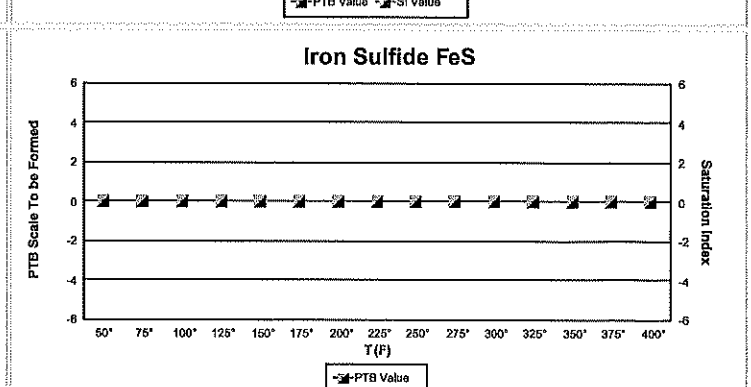
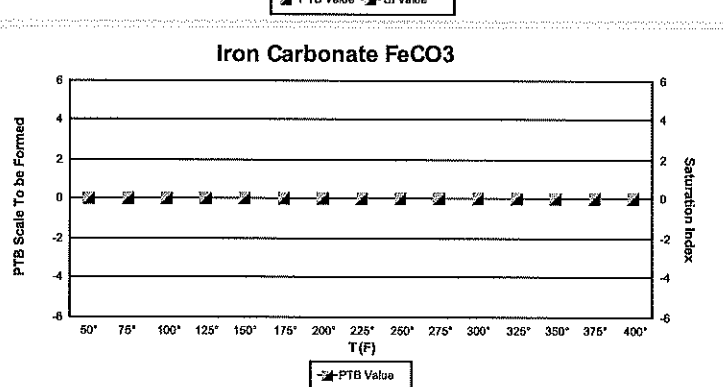
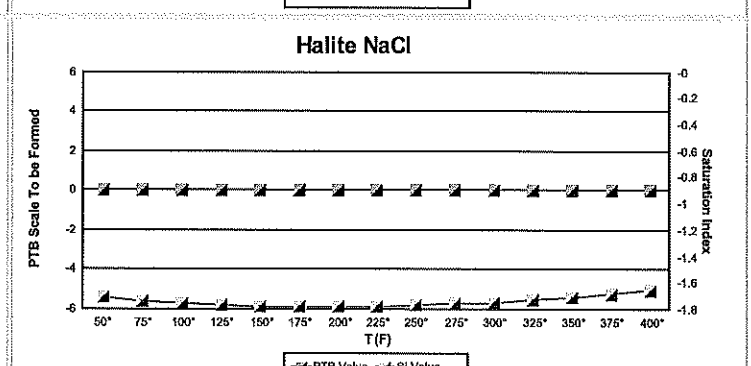
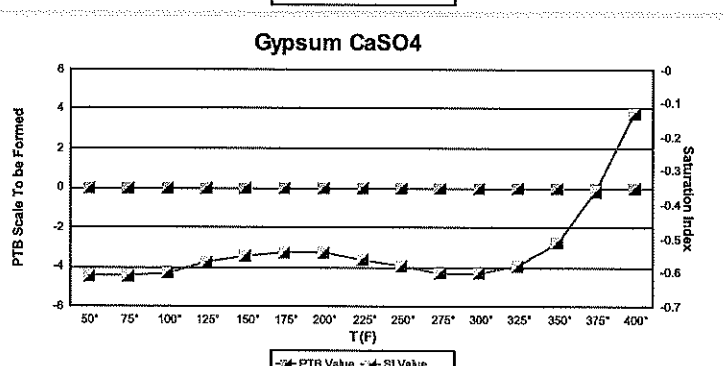
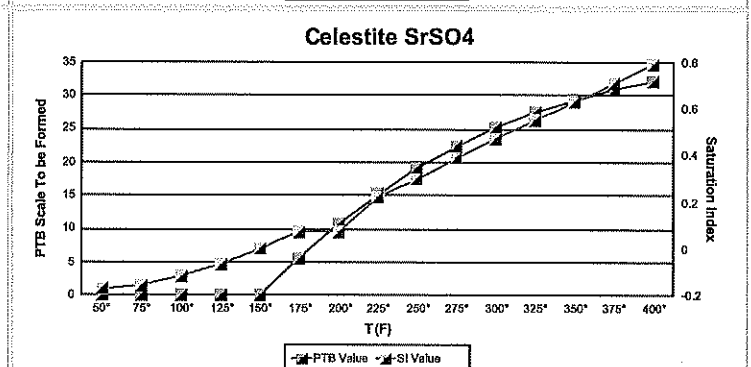
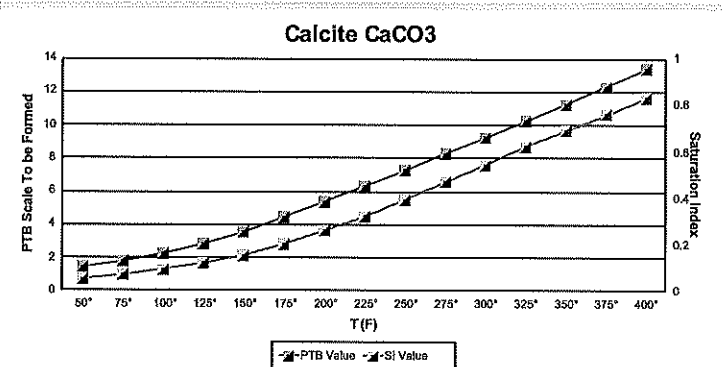
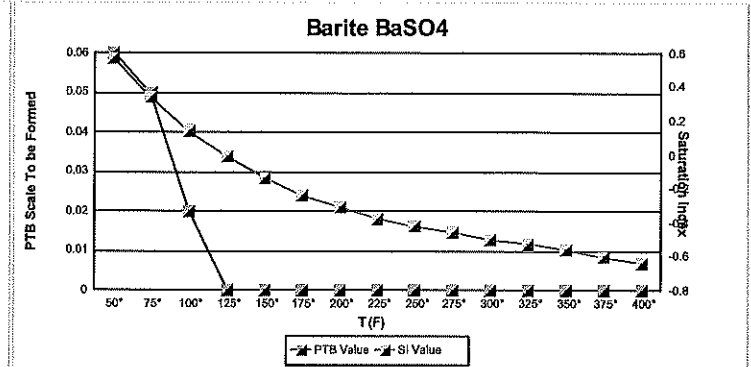
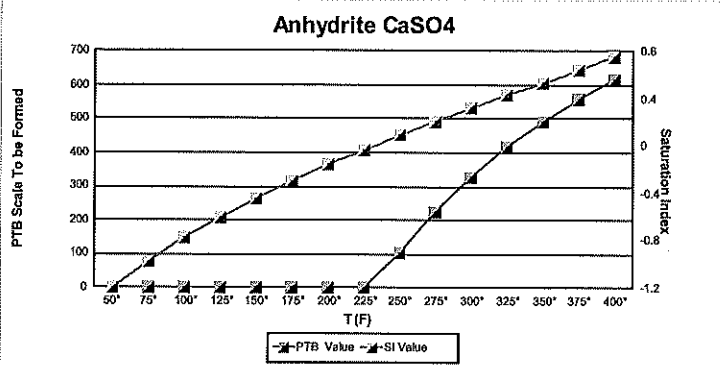
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 02/24/2023

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 Geographic Location: Lane County
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Equipment Description: Easton A2
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 02/24/2023