

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: **Lois 1-19**
 Sample Point: **Bleeder**
 Sample ID: **AV13074**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430657**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	146 mg/L	Titration
Dissolved CO2	260 mg/L	Titration
Dissolved H2S	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	1.037	Densitometer
Ionic Strength	0.860 mol/L	Calculation
Total Dissolved Solids	46000 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.00 %	Calculation

Cations - Analyzed By ICP

Iron	12.8 mg/L	Boron	18.3 mg/L	Silicon	9.17 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	2.39 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	328 mg/L	Nickel	<0.200 mg/L	Phosphorus	1.39 mg/L
Calcium	1590 mg/L	Zinc	<0.400 mg/L	Measured Sodium	14600 mg/L
Magnesium	598 mg/L	Lead	<0.500 mg/L		
Sodium	14600 mg/L	Cobalt	1.11 mg/L		
Potassium	242 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	27400 mg/L	Sulfate	959 mg/L
Bromide	43.6 mg/L		

PTB								
	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	1.39	0.00	128.66	0.00	0.00	0.00	7.06
75°	0.00	1.36	0.00	126.12	0.00	0.00	0.00	7.05
100°	0.00	1.33	0.00	129.66	0.00	0.00	0.00	7.05
125°	0.00	1.28	0.00	136.99	0.00	0.00	0.00	7.04
150°	0.00	1.22	0.00	146.45	0.00	0.00	0.00	7.03
175°	0.00	1.17	0.00	156.82	0.00	0.00	0.00	7.02
200°	0.00	1.11	0.00	167.23	0.00	0.00	0.00	7.02
225°	0.00	1.06	0.00	177.17	0.00	0.00	0.00	7.02
250°	80.58	1.02	0.00	186.30	0.00	0.00	0.00	7.02
275°	162.20	0.98	0.00	194.48	0.00	0.00	0.00	7.03
300°	227.13	0.94	0.00	201.66	0.00	0.00	0.00	7.03
325°	279.02	0.91	0.00	207.86	0.00	0.00	0.00	7.04
350°	320.58	0.87	0.00	213.15	0.00	0.00	0.00	7.04
375°	353.89	0.82	0.00	217.59	0.00	0.00	0.00	7.05
400°	380.48	0.77	0.00	221.24	0.00	0.00	0.00	7.05

SI						
	Anhydrite	Barite	Celestite	Gypsum	Halite	Iron Sulfide
50°	-1.15	1.63	0.43	-0.54	-2.20	3.40
75°	-0.94	1.37	0.42	-0.56	-2.24	3.09
100°	-0.76	1.16	0.43	-0.56	-2.26	2.86
125°	-0.59	0.99	0.47	-0.54	-2.28	2.69
150°	-0.44	0.85	0.52	-0.52	-2.28	2.57
175°	-0.29	0.75	0.58	-0.51	-2.29	2.49
200°	-0.16	0.66	0.58	-0.52	-2.28	2.45
225°	-0.03	0.60	0.72	-0.53	-2.28	2.45
250°	0.10	0.55	0.79	-0.55	-2.27	2.47
275°	0.22	0.51	0.87	-0.57	-2.25	2.52
300°	0.34	0.47	0.95	-0.57	-2.23	2.58
325°	0.45	0.44	1.03	-0.54	-2.21	2.67
350°	0.57	0.41	1.11	-0.46	-2.18	2.77
375°	0.68	0.38	1.19	-0.31	-2.15	2.88
400°	0.79	0.34	1.27	-0.06	-2.12	3.00

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.

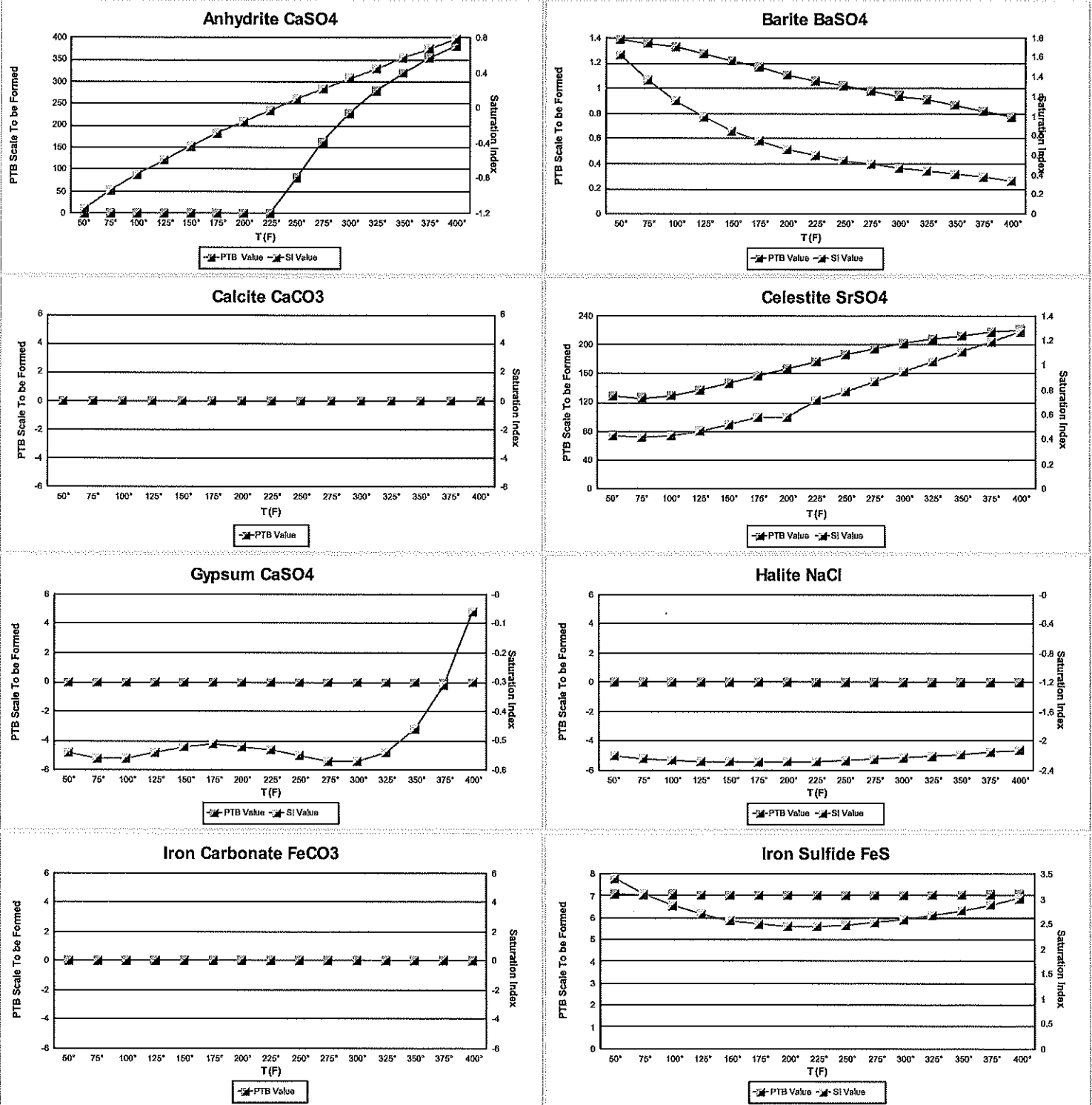
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 02/24/2023

Complete Water Analysis

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

Equipment Description: Lois 1-19
 Sample Point: Bleeder
 Sample ID: AV13074
 Account Rep: Michael.Walters@championx.com

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