

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: **Keenan Stucky 1-34**
 Sample Point: **Bleeder**
 Sample ID: **AV13086**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430667**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	176 mg/L	Titration
Dissolved CO2	240 mg/L	Titration
Dissolved H2S	87 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis		
Analysis	Result	Analysis Method
Specific Gravity	1.042	Densitometer
Ionic Strength	0.970 mol/L	Calculation
Total Dissolved Solids	53400 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.0500 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	22.1 mg/L	Silicon	8.04 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	<0.100 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	34.8 mg/L	Nickel	<0.200 mg/L	Phosphorus	0.916 mg/L
Calcium	912 mg/L	Zinc	<0.400 mg/L	Measured Sodium	17900 mg/L
Magnesium	319 mg/L	Lead	<0.500 mg/L		
Sodium	17900 mg/L	Cobalt	0.787 mg/L		
Potassium	206 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	29900 mg/L	Sulfate	3860 mg/L
Bromide	25.4 mg/L		

PTB								
	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	0.00	0.97	0.00	0.00	0.00	0.00
75°	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
100°	0.00	0.00	0.00	1.88	0.00	0.00	0.00	0.00
125°	0.00	0.00	0.00	3.96	0.00	0.00	0.00	0.00
150°	0.00	0.00	0.54	6.45	0.00	0.00	0.00	0.00
175°	62.74	0.00	1.28	9.03	0.00	0.00	0.00	0.00
200°	253.31	0.00	2.16	11.49	0.00	0.00	0.00	0.00
225°	406.04	0.00	3.12	13.72	0.00	0.00	0.00	0.00
250°	529.85	0.00	4.15	15.88	0.00	0.00	0.00	0.00
275°	631.01	0.00	5.23	17.36	0.00	0.00	0.00	0.00
300°	714.31	0.00	6.35	18.79	0.00	0.00	0.00	0.00
325°	783.33	0.00	7.51	19.98	0.00	0.00	0.00	0.00
350°	840.70	0.00	8.72	20.96	0.00	0.00	0.00	0.00
375°	888.36	0.00	9.98	21.76	38.26	0.00	0.00	0.00
400°	927.74	0.00	11.29	22.41	452.17	0.00	0.00	0.00

SI					
	Anhydrite	Calcite	Celestite	Gypsum	Halite
50°	-0.82	-0.02	0.02	-0.22	-2.09
75°	-0.61	-0.02	0.01	-0.23	-2.12
100°	-0.43	-0.02	0.03	-0.23	-2.15
125°	-0.26	0.00	0.07	-0.21	-2.16
150°	-0.10	0.02	0.13	-0.19	-2.17
175°	0.04	0.06	0.19	-0.19	-2.17
200°	0.18	0.10	0.19	-0.19	-2.17
225°	0.31	0.15	0.34	-0.20	-2.16
250°	0.43	0.21	0.42	-0.22	-2.15
275°	0.55	0.28	0.50	-0.24	-2.14
300°	0.67	0.35	0.58	-0.24	-2.12
325°	0.78	0.43	0.66	-0.21	-2.10
350°	0.90	0.51	0.75	-0.13	-2.08
375°	1.01	0.60	0.83	0.02	-2.05
400°	1.12	0.69	0.91	0.26	-2.01

Comments

Scaling predictions calculated using Scale Soft Pitzer 2019

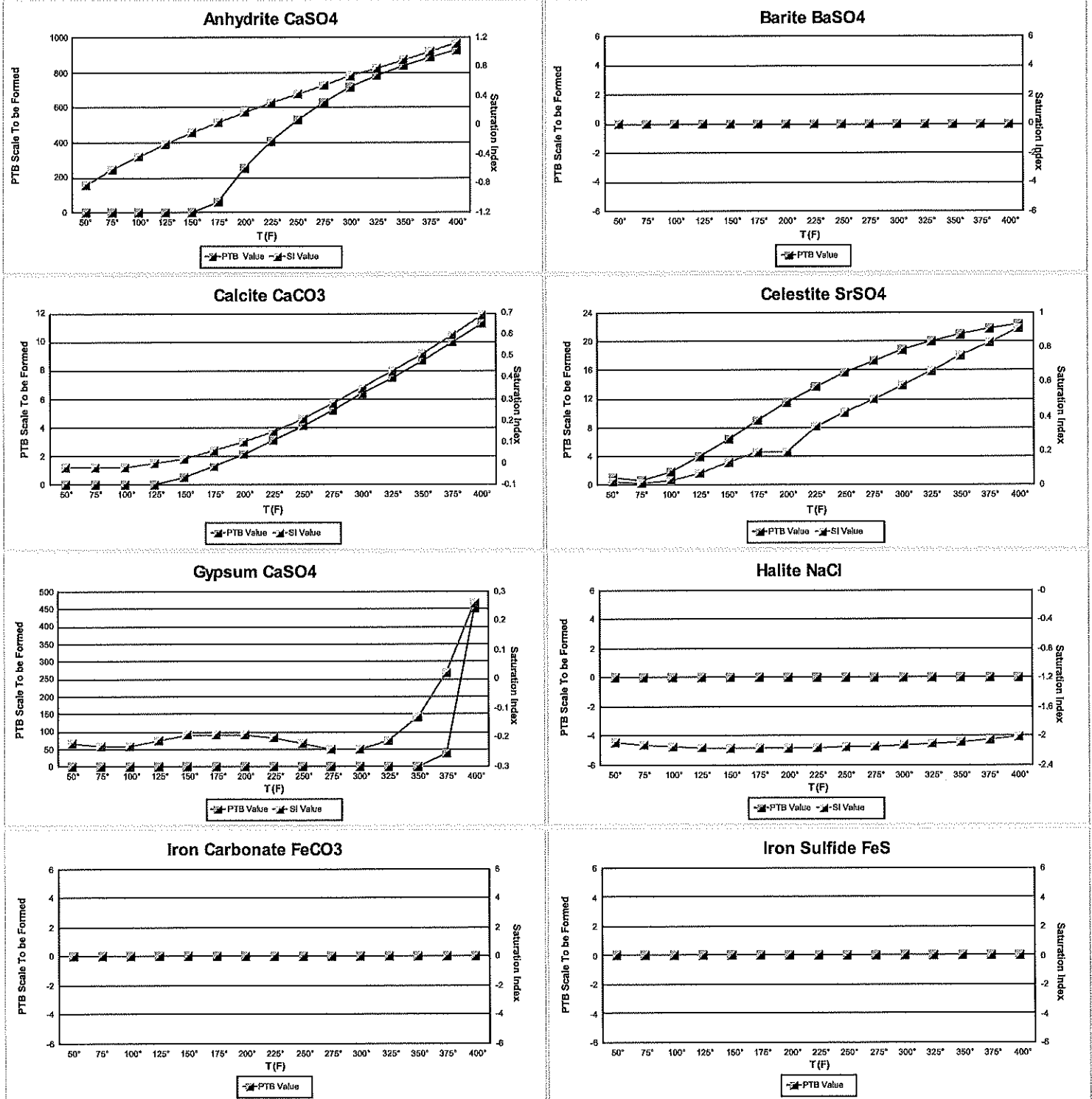
Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

Complete Water Analysis

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

Equipment Description: Keenan Stucky 1-34
 Sample Point: Bleeder
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 02/24/2023