

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	_____	_____	_____	_____	_____



Central Area Laboratory
12701 N. Santa Fe Ave, Suite 151
Oklahoma City, Oklahoma 73114

REPORT DATE: 2/28/2024

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER: SHAKESPEARE OIL
DISTRICT: KANSAS
AREA/LEASE: GLASSMAN
SAMPLE POINT NAME: GLASSMAN 6-35
SITE TYPE: WELL SITES
SAMPLE POINT DESCRIPTION: TANK
CUSTOMER SAMPLE POINT ID:

ACCOUNT REP: BRETT J SUTER
SAMPLE ID: 202410001356
SAMPLE DATE: 2/9/2024
ANALYSIS DATE: 2/23/2024
ANALYST: BS

SHAKESPEARE OIL, GLASSMAN, GLASSMAN 6-35

FIELD DATA			ANALYSIS OF SAMPLE				
			ANIONS:		CATIONS:		
			mg/L	meq/L	mg/L	meq/L	
Initial Temperature (°F):	150	Chloride (Cl ⁻):	69200.0	1952.0	Sodium (Na ⁺):	39630.9	1724.6
Final Temperature (°F):	50	Sulfate (SO ₄ ²⁻):	3284.0	68.4	Potassium (K ⁺):	495.5	12.7
Initial Pressure (psi):	100	Borate (H ₃ BO ₃):	187.3	3.0	Magnesium (Mg ²⁺):	457.4	37.6
Final Pressure (psi):	15	Fluoride (F ⁻):	ND		Calcium (Ca ²⁺):	1008.8	50.3
		Bromide (Br ⁻):	ND		Strontium (Sr ²⁺):	48.7	1.1
pH:		Nitrite (NO ₂ ⁻):	ND		Barium (Ba ²⁺):	0.2	0.0
pH at time of sampling:	7.0	Nitrate (NO ₃ ⁻):	ND		Iron (Fe ²⁺):	1.2	0.0
		Phosphate (PO ₄ ³⁻):	0.3	0.0	Manganese (Mn ²⁺):	0.1	0.0
		Silica (SiO ₂):	ND		Lead (Pb ²⁺):	ND	
					Zinc (Zn ²⁺):	0.1	0.0
ALKALINITY BY TITRATION:							
	mg/L	meq/L					
Bicarbonate (HCO ₃ ⁻):	460.0	7.5			Aluminum (Al ³⁺):	ND	
Carbonate (CO ₃ ²⁻):	ND				Chromium (Cr ³⁺):	ND	
Hydroxide (OH ⁻):	ND				Cobalt (Co ²⁺):	ND	
			ORGANIC ACIDS:				
			mg/L	meq/L			
aqueous CO ₂ (ppm):	210.0	Formic Acid:	ND		Molybdenum (Mo ²⁺):	ND	
aqueous H ₂ S (ppm):	25.0	Acetic Acid:	ND		Nickel (Ni ²⁺):	ND	
aqueous O ₂ (ppb):	ND	Propionic Acid:	ND		Tin (Sn ²⁺):	ND	
		Butyric Acid:	ND		Titanium (Ti ²⁺):	ND	
Calculated TDS (mg/L):	114587	Valeric Acid:	ND		Vanadium (V ²⁺):	ND	
Density/Specific Gravity (g/cm ³):	1.0713				Zirconium (Zr ²⁺):	ND	
Measured Specific Gravity:	ND				Lithium (Li):	ND	
Conductivity (mmhos):	ND						
Resistivity:	ND				Total Hardness:	4462	N/A
MCF/D:	No Data						
BOPD:	No Data						
BWPD:	No Data	Anion/Cation Ratio:		1.11			ND = Not Determined

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

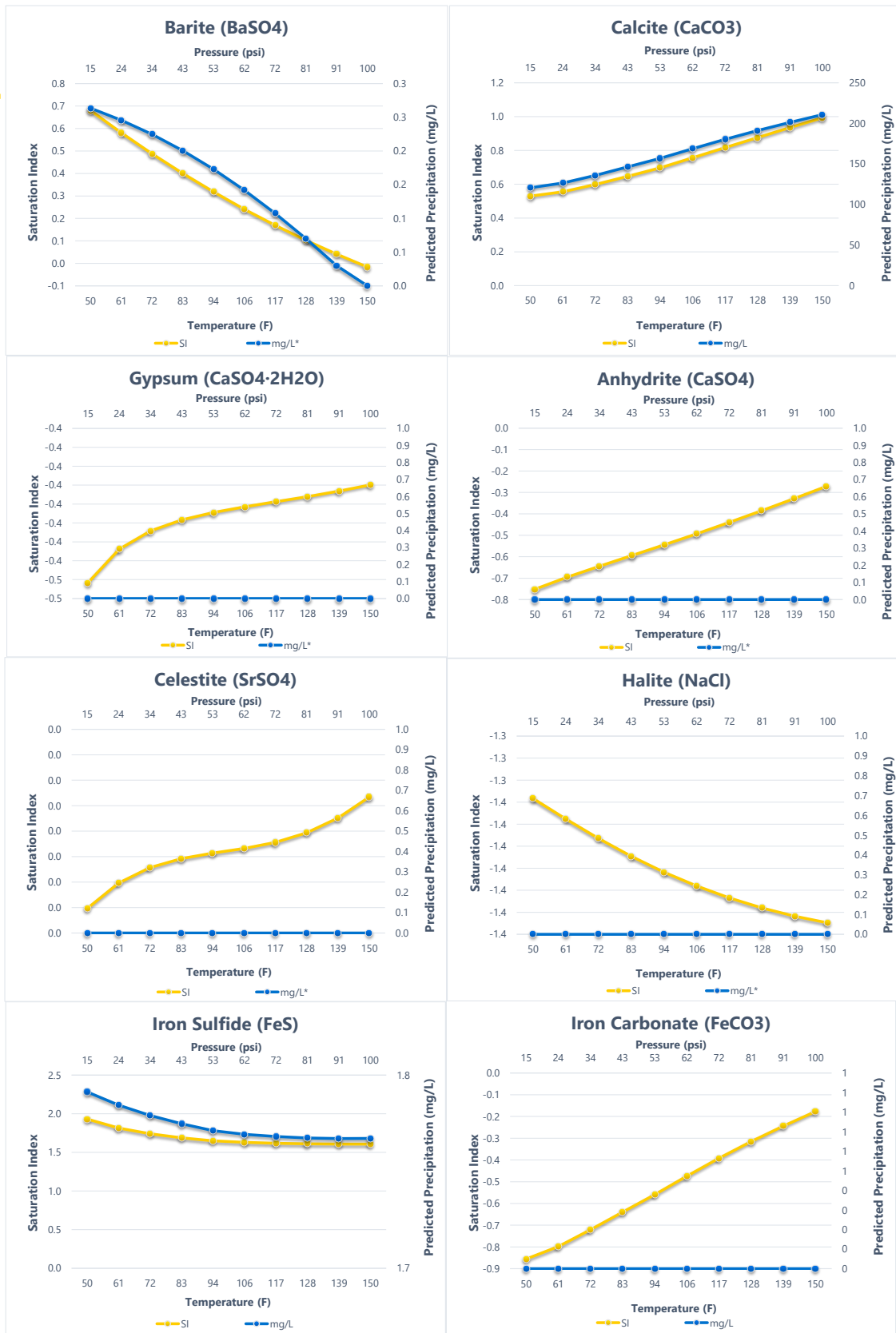
Conditions		Barite (BaSO ₄)		Calcite (CaCO ₃)		Gypsum (CaSO ₄ ·2H ₂ O)		Anhydrite (CaSO ₄)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
50°F	15 psi	0.68	0.092	0.53	42.236	-0.45	0.000	-0.75	0.000
61°F	24 psi	0.58	0.086	0.56	44.259	-0.43	0.000	-0.70	0.000
72°F	34 psi	0.49	0.079	0.60	47.586	-0.42	0.000	-0.64	0.000
83°F	43 psi	0.40	0.070	0.65	51.244	-0.42	0.000	-0.59	0.000
94°F	53 psi	0.32	0.060	0.70	54.944	-0.41	0.000	-0.54	0.000
106°F	62 psi	0.24	0.050	0.76	59.083	-0.41	0.000	-0.49	0.000
117°F	72 psi	0.17	0.038	0.82	63.119	-0.41	0.000	-0.44	0.000
128°F	81 psi	0.10	0.025	0.88	66.893	-0.41	0.000	-0.39	0.000
139°F	91 psi	0.04	0.010	0.93	70.431	-0.40	0.000	-0.33	0.000
150°F	100 psi	-0.02	0.000	0.99	73.758	-0.40	0.000	-0.27	0.000

Conditions		Celestite (SrSO ₄)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO ₃)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
50°F	15 psi	-0.04	0.000	-1.35	0.000	1.93	0.627	-0.86	0.000
61°F	24 psi	-0.03	0.000	-1.36	0.000	1.81	0.625	-0.80	0.000
72°F	34 psi	-0.03	0.000	-1.37	0.000	1.74	0.623	-0.72	0.000
83°F	43 psi	-0.03	0.000	-1.37	0.000	1.69	0.621	-0.64	0.000
94°F	53 psi	-0.02	0.000	-1.38	0.000	1.65	0.620	-0.56	0.000
106°F	62 psi	-0.02	0.000	-1.39	0.000	1.63	0.619	-0.47	0.000
117°F	72 psi	-0.02	0.000	-1.39	0.000	1.62	0.619	-0.39	0.000
128°F	81 psi	-0.02	0.000	-1.40	0.000	1.61	0.619	-0.32	0.000
139°F	91 psi	-0.02	0.000	-1.40	0.000	1.61	0.619	-0.24	0.000
150°F	100 psi	-0.01	0.000	-1.40	0.000	1.61	0.619	-0.18	0.000

- Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered
- Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.
- Note 3: Saturation Index predictions on this sheet use pH and alkalinity; %CO₂ is not included in the calculations.



Comments:



SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.