

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

Upstream Chemicals

REPORT DATE: 2/22/2023

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	SHAKESPEARE OIL	ACCOUNT REP:	BRETT J SUTER
DISTRICT:	KANSAS	SAMPLE ID:	202310001786
AREA/LEASE:	GLASSMAN	SAMPLE DATE:	2/13/2023
SAMPLE POINT NAME:	GLASSMAN 4-35	ANALYSIS DATE:	2/21/2023
SITE TYPE:	WELL SITES	ANALYST:	BS
SAMPLE POINT DESCRIPTION:	TANK		
CUSTOMER SAMPLE POINT ID:			

SHAKESPEARE OIL, GLASSMAN, GLASSMAN 4-35

FIELD DATA		ANALYSIS OF SAMPLE					
		ANIONS:		CATIONS:			
		mg/L	meq/L	mg/L	meq/L		
Initial Temperature (°F):	150	Chloride (Cl ⁻):	66835.0	1885.3	Sodium (Na ⁺):	42782.9	1861.7
Final Temperature (°F):	75	Sulfate (SO ₄ ²⁻):	4372.0	91.0	Potassium (K ⁺):	381.3	9.8
Initial Pressure (psi):	100	Borate (H ₃ BO ₃):	183.8	3.0	Magnesium (Mg ²⁺):	423.0	34.8
Final Pressure (psi):	15	Fluoride (F ⁻):	ND		Calcium (Ca ²⁺):	1261.3	62.9
		Bromide (Br ⁻):	ND		Strontium (Sr ²⁺):	44.7	1.0
pH:		Nitrite (NO ₂ ⁻):	ND		Barium (Ba ²⁺):	0.0	0.0
pH at time of sampling:	7.0	Nitrate (NO ₃ ⁻):	ND		Iron (Fe ²⁺):	0.0	0.0
		Phosphate (PO ₄ ³⁻):	3.0	0.1	Manganese (Mn ²⁺):	0.5	0.0
		Silica (SiO ₂):	ND		Lead (Pb ²⁺):	ND	ND
					Zinc (Zn ²⁺):	0.0	0.0
ALKALINITY BY TITRATION:	mg/L meq/L						
Bicarbonate (HCO ₃ ⁻):	450.0 7.4			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		Copper (Cu ²⁺):	ND	
aqueous CO ₂ (ppm):	200.0	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):	116551	Valeric Acid:	ND		Vanadium (V ²⁺):	ND	
Density/Specific Gravity (g/cm ³):	1.0740				Zirconium (Zr ²⁺):	ND	
Measured Specific Gravity:	ND				Lithium (Li):	ND	
Conductivity (mmhos):	ND				Total Hardness:	4947	N/A
Resistivity:	ND						
MCF/D:	No Data						
BOPD:	No Data						
BWPD:	No Data	Anion/Cation Ratio:	1.01				ND = Not Determined

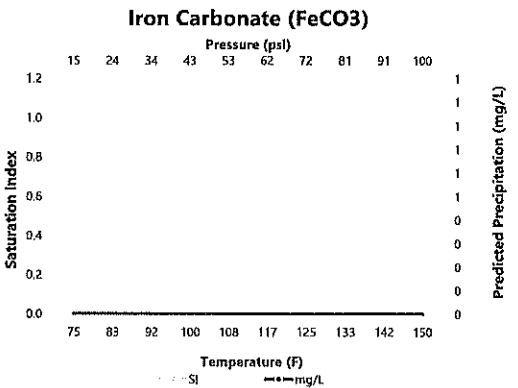
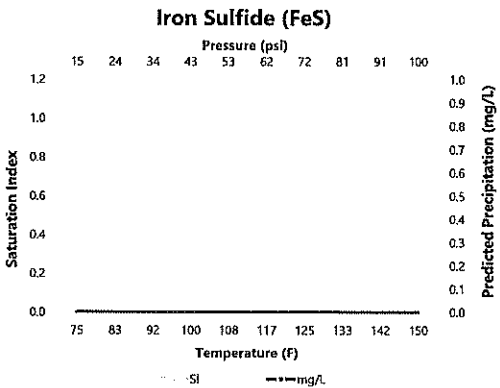
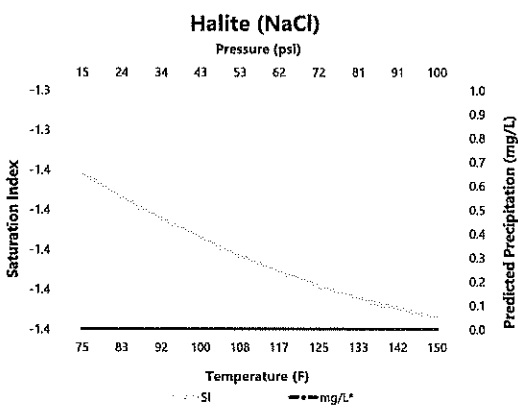
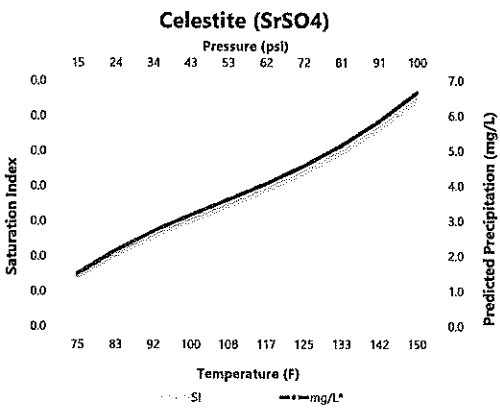
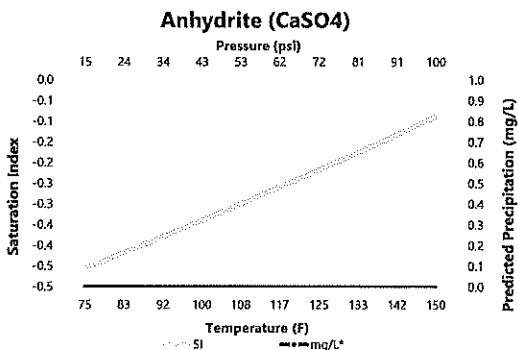
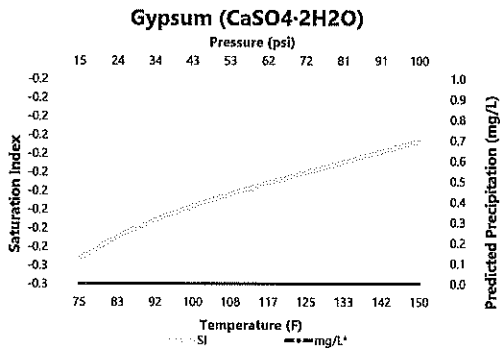
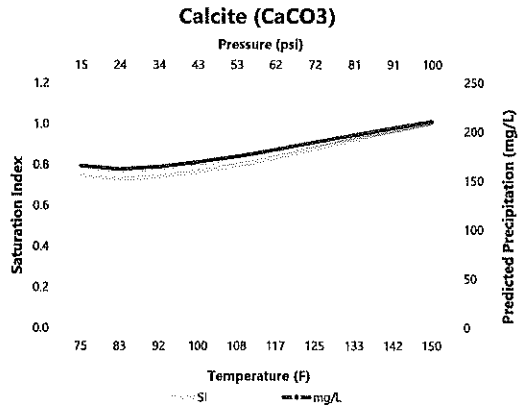
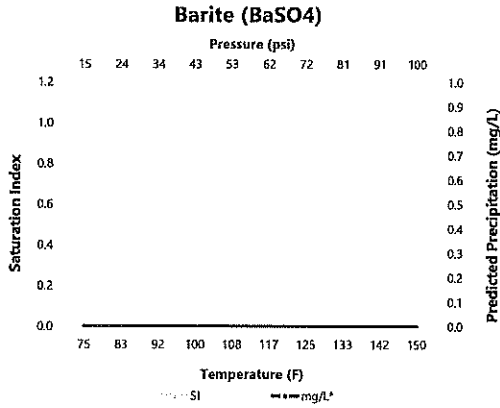
SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

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)
75°F	15 psi		0.000	0.75	57.903	-0.25	0.000	-0.46	0.000
83°F	24 psi		0.000	0.73	56.687	-0.24	0.000	-0.42	0.000
92°F	34 psi		0.000	0.74	57.582	-0.24	0.000	-0.38	0.000
100°F	43 psi		0.000	0.77	59.249	-0.23	0.000	-0.34	0.000
108°F	53 psi		0.000	0.80	61.238	-0.23	0.000	-0.30	0.000
117°F	62 psi		0.000	0.84	63.612	-0.23	0.000	-0.26	0.000
125°F	72 psi		0.000	0.88	66.356	-0.22	0.000	-0.22	0.000
133°F	81 psi		0.000	0.93	68.958	-0.22	0.000	-0.17	0.000
142°F	91 psi		0.000	0.97	71.428	-0.22	0.000	-0.13	0.000
150°F	100 psi		0.000	1.01	73.779	-0.22	0.000	-0.09	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)
75°F	15 psi	0.01	0.526	-1.35	0.000	0	0.000		0.000
83°F	24 psi	0.01	0.759	-1.36	0.000	0	0.000		0.000
92°F	34 psi	0.01	0.947	-1.36	0.000	0	0.000		0.000
100°F	43 psi	0.02	1.110	-1.37	0.000	0	0.000		0.000
108°F	53 psi	0.02	1.263	-1.37	0.000	0	0.000		0.000
117°F	62 psi	0.02	1.422	-1.38	0.000	0	0.000		0.000
125°F	72 psi	0.02	1.599	-1.38	0.000	0	0.000		0.000
133°F	81 psi	0.02	1.804	-1.38	0.000	0	0.000		0.000
142°F	91 psi	0.03	2.046	-1.38	0.000	0	0.000		0.000
150°F	100 psi	0.03	2.332	-1.39	0.000	0	0.000		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.