

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	_____	_____	_____	_____	_____

Submitted Electronically



Location/Laboratory
Address
City, State, Zip

Report Date: 2/2/2018

Complete Water Analysis Report SSP v.8

Customer:	Great Plains Energy	Sample Date:	2/19/2018
District:		Log Out Date:	
Area:	Oberlin,ks	Sample ID:	
Lease:	Sauvage#2 SWD	Analyst:	Greg Pollnow
Sample Point Name	Tank to Disposal	Chemical Used:	
Sales Rep:	Greg Pollnow	Comments:	

Great Plains Energy, Sauvage#2 SWD, Tank to Disposal

Field Data		Analysis of Sample					
		Anions:		mg/L		meq/L	
Initial Temperature (°F):	40	Chloride (Cl⁻):	54000	1521.1	Sodium (Na⁺):	30681	1339.8
Final Temperature (°F):	100	Sulfate (SO₄²⁻):	600	12.5	Potassium (K⁺):	0	0.0
Initial Pressure (psi):	1	Borate (H₃BO₃):	0.0	0.0	Magnesium (Mg²⁺):	486	40.0
Final Pressure (psi):	25	Fluoride (F⁻):	0.0	0.0	Calcium (Ca²⁺):	3200	159.7
pH:		Bromide (Br⁻):	0.0	0.0	Strontium (Sr²⁺):	0	0.0
pH at time of sampling:	5.8	Nitrite (NO₂⁻):	0.0	0.0	Barium (Ba²⁺):	0.0	0.0
pH at time of analysis:	NA	Nitrate (NO₃⁻):	0.0	0.0	Iron (Fe²⁺):	25.0	0.9
pH used in Calcs:	6	Phosphate (PO₄³⁻):	0.0	0.0	Manganese (Mn²⁺):	0.00	0.0
Alkalinity by Titration:	mg/L	Silica (SiO₂):	0.0	0.0	Lead (Pb²⁺):	0.00	0.0
Bicarbonate (HCO₃⁻):	280				Zinc (Zn²⁺):	0.0	0.0
Carbonate (CO₃²⁻):	0				Aluminum (Al³⁺):	0.0	0.0
Hydroxide (OH⁻):	0				Chromium (Cr³⁺):	0.0	0.0
aqueous CO₂ (ppm):	110	Organic Acids:	mg/L	meq/L	Cobalt (Co²⁺):	0.0	0.0
aqueous H₂S (ppm):	5	Formate:	0.0	0.0	Copper (Cu²⁺):	0.0	0.0
aqueous O₂ (ppb):	0	Acetate:	0.0	0.0	Molybdenum (Mo²⁺):	0.0	0.0
Calculated TDS (mg/L):	89272	Propionate:	0.0	0.0	Nickel (Ni²⁺):	0.0	0.0
Density/Specific Gravity (g/cm³):	1.0600	Butyrate:	0.0	0.0	Tin (Sn²⁺):	0.0	0.0
Measured Density/Specific Gravity	0	Valerate:	0.0	0.0	Titanium (Ti²⁺):	0.0	0.0
Conductivity (µmhos):	0				Vanadium (V²⁺):	0.0	0.0
MCF/D:	0				Zirconium (Zr²⁺):	0.0	0.0
BOPD:	0				Total Hardness:	8600	N/A
BWPD:	0	Anion/Cation Ratio:		1.00			

Conditions		Barite (BaSO₄)		Calcite (CaCO₃)		Gypsum (CaSO₄·2H₂O)		Anhydrite (CaSO₄)	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amount	Index	Amt (PTB)
100°F	25 psi		0.000	0.31	21.919	-0.63	0.000	-0.75	0.000
93°F	24 psi		0.000	0.26	19.009	-0.63	0.000	-0.78	0.000
87°F	23 psi		0.000	0.21	15.925	-0.64	0.000	-0.81	0.000
80°F	22 psi		0.000	0.17	12.647	-0.64	0.000	-0.84	0.000
73°F	20 psi		0.000	0.12	9.155	-0.65	0.000	-0.87	0.000
67°F	19 psi		0.000	0.07	5.416	-0.65	0.000	-0.90	0.000
60°F	18 psi		0.000	0.02	1.383	-0.66	0.000	-0.93	0.000
53°F	17 psi		0.000	-0.04	0.000	-0.66	0.000	-0.97	0.000
47°F	16 psi		0.000	-0.09	0.000	-0.67	0.000	-1.00	0.000
40°F	15 psi		0.000	-0.16	0.000	-0.69	0.000	-1.04	0.000

Conditions		Celestite (SrSO₄)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO₃)	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)
100°F	25 psi		0.000	-1.62	0.000	-9.44	0.000	-0.08	0.000
93°F	24 psi		0.000	-1.62	0.000	-9.46	0.000	-0.15	0.000
87°F	23 psi		0.000	-1.61	0.000	-9.48	0.000	-0.21	0.000
80°F	22 psi		0.000	-1.61	0.000	-9.50	0.000	-0.28	0.000
73°F	20 psi		0.000	-1.60	0.000	-9.51	0.000	-0.35	0.000
67°F	19 psi		0.000	-1.59	0.000	-9.53	0.000	-0.42	0.000
60°F	18 psi		0.000	-1.59	0.000	-9.54	0.000	-0.50	0.000
53°F	17 psi		0.000	-1.58	0.000	-9.55	0.000	-0.57	0.000
47°F	16 psi		0.000	-1.57	0.000	-9.55	0.000	-0.65	0.000
40°F	15 psi		0.000	-1.56	0.000	-9.55	0.000	-0.73	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.



ScaleSoftPitzer™
SSP2010

