

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 | _____ | _____ | _____ | _____ | _____ |



Baker Hughes
1625
Plainville Kansas 67663

Report Date: 2/26/2020

Complete Water Analysis Report SSP v.8

| | | | |
|-------------------|---------------------------|----------------|-----------|
| Customer: | Great Plains | Sample Date: | 2/20/2020 |
| District: | Kansas | Log Out Date: | |
| Area: | Norton | Sample ID: | |
| Lease: | Shulte No. 2 SWD | Analyst: | Tim Beims |
| Sample Point Name | Tank to Shulte 2 SWD well | Chemical Used: | |
| Sales Rep: | Tim Beims | Comments: | |

Great Plains, Shulte No. 2 SWD, Tank to Shulte 2 SWD well

| Field Data | | | Analysis of Sample | | | | | | |
|--|------------|---|--------------------|--------|---------------------------------|----------|--------|-------|--|
| | | | Anions: | | | Cations: | | | |
| | | | mg/L | meq/L | mg/L | meq/L | mg/L | meq/L | |
| Initial Temperature (°F): | 71 | Chloride (Cl): | 57600 | 1622.5 | Sodium (Na ⁺): | 29476 | 1287.2 | | |
| Final Temperature (°F): | 85 | Sulfate (SO ₄ ²⁻): | 500 | 10.4 | Potassium (K ⁺): | 0 | 0.0 | | |
| Initial Pressure (psi): | 15 | Borate (H ₃ BO ₃): | 0.0 | 0.0 | Magnesium (Mg ²⁺): | 1040 | 85.6 | | |
| Final Pressure (psi): | 15 | Fluoride (F): | 0.0 | 0.0 | Calcium (Ca ²⁺): | 5200 | 259.5 | | |
| | | Bromide (Br): | 0.0 | 0.0 | Strontium (Sr ²⁺): | 0 | 0.0 | | |
| pH: | | Nitrite (NO ₂): | 0.0 | 0.0 | Barium (Ba ²⁺): | 0 | 0.0 | | |
| pH at time of sampling: | 6.0 | Nitrate (NO ₃): | 0.0 | 0.0 | Iron (Fe ²⁺): | 9 | 0.3 | | |
| pH at time of analysis: | NA | Phosphate (PO ₄ ³⁻): | 0.0 | 0.0 | Manganese (Mn ²⁺): | 20 | 0.7 | | |
| pH used in Calcs: | 6.0 | Silica (SiO ₂): | 0.0 | 0.0 | Lead (Pb ²⁺): | 0 | 0.0 | | |
| | | | | | Zinc (Zn ²⁺): | 0 | 0.0 | | |
| | | | | | Aluminum (Al ³⁺): | 0.0 | 0.0 | | |
| | | | | | Chromium (Cr ³⁺): | 0.0 | 0.0 | | |
| | | | | | Cobalt (Co ²⁺): | 0.0 | 0.0 | | |
| | | | | | Copper (Cu ²⁺): | 0.0 | 0.0 | | |
| | | | | | Molybdenum (Mo ²⁺): | 0.0 | 0.0 | | |
| | | | | | Nickel (Ni ²⁺): | 0.0 | 0.0 | | |
| | | | | | Tin (Sn ²⁺): | 0.0 | 0.0 | | |
| | | | | | Titanium (Ti ²⁺): | 0.0 | 0.0 | | |
| | | | | | Vanadium (V ²⁺): | 0.0 | 0.0 | | |
| | | | | | Zirconium (Zr ²⁺): | 0.0 | 0.0 | | |
| | | | | | Total Hardness: | 16500 | | | |
| Alkalinity by Titration: | mg/L meq/L | | | | | | | | |
| Bicarbonate (HCO ₃ ⁻): | 160 2.6 | | | | | | | | |
| Carbonate (CO ₃ ²⁻): | 0 0.0 | | | | | | | | |
| Hydroxide (OH): | 0 0.0 | | | | | | | | |
| | | | | | | | | | |
| aqueous CO ₂ (ppm): | 70 0.0 | | | | | | | | |
| aqueous H ₂ S (ppm): | 15 0.0 | | | | | | | | |
| aqueous O ₂ (ppb): | | | | | | | | | |
| Calculated TDS (mg/L): | 83315 | | | | | | | | |
| Density/Specific Gravity (g/cm ³): | 1.0750 | | | | | | | | |
| Measured Density/Specific Gravity | 0 | | | | | | | | |
| Conductivity (µmhos): | 0 | | | | | | | | |
| MCF/D: | 0 | | | | | | | | |
| BOPD: | 0 | | | | | | | | |
| BWPD: | 0 | | | | | | | | |
| | | Anion/Cation Ratio: | | 1.00 | | | | | |

| 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 | Amount | Index | Amt (PTB) |
| 85°F | 15 psi | | 0.000 | 0.07 | 3.567 | -0.56 | 0.000 | -0.74 | 0.000 |
| 83°F | 15 psi | | 0.000 | 0.06 | 2.936 | -0.56 | 0.000 | -0.75 | 0.000 |
| 82°F | 15 psi | | 0.000 | 0.05 | 2.294 | -0.56 | 0.000 | -0.75 | 0.000 |
| 80°F | 15 psi | | 0.000 | 0.03 | 1.641 | -0.56 | 0.000 | -0.76 | 0.000 |
| 79°F | 15 psi | | 0.000 | 0.02 | 0.976 | -0.56 | 0.000 | -0.77 | 0.000 |
| 77°F | 15 psi | | 0.000 | 0.01 | 0.342 | -0.56 | 0.000 | -0.78 | 0.000 |
| 76°F | 15 psi | | 0.000 | -0.01 | 0.000 | -0.57 | 0.000 | -0.78 | 0.000 |
| 74°F | 15 psi | | 0.000 | -0.02 | 0.000 | -0.57 | 0.000 | -0.79 | 0.000 |
| 73°F | 15 psi | | 0.000 | -0.04 | 0.000 | -0.57 | 0.000 | -0.80 | 0.000 |
| 71°F | 15 psi | | 0.000 | -0.05 | 0.000 | -0.57 | 0.000 | -0.81 | 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) |
| 85°F | 15 psi | | 0.000 | -1.59 | 0.000 | -10.14 | 0.000 | -1.01 | 0.000 |
| 83°F | 15 psi | | 0.000 | -1.59 | 0.000 | -10.15 | 0.000 | -1.03 | 0.000 |
| 82°F | 15 psi | | 0.000 | -1.59 | 0.000 | -10.16 | 0.000 | -1.05 | 0.000 |
| 80°F | 15 psi | | 0.000 | -1.59 | 0.000 | -10.17 | 0.000 | -1.07 | 0.000 |
| 79°F | 15 psi | | 0.000 | -1.59 | 0.000 | -10.17 | 0.000 | -1.09 | 0.000 |
| 77°F | 15 psi | | 0.000 | -1.58 | 0.000 | -10.18 | 0.000 | -1.11 | 0.000 |
| 76°F | 15 psi | | 0.000 | -1.58 | 0.000 | -10.19 | 0.000 | -1.12 | 0.000 |
| 74°F | 15 psi | | 0.000 | -1.58 | 0.000 | -10.20 | 0.000 | -1.14 | 0.000 |
| 73°F | 15 psi | | 0.000 | -1.58 | 0.000 | -10.21 | 0.000 | -1.16 | 0.000 |
| 71°F | 15 psi | | 0.000 | -1.58 | 0.000 | -10.21 | 0.000 | -1.18 | 0.000 |

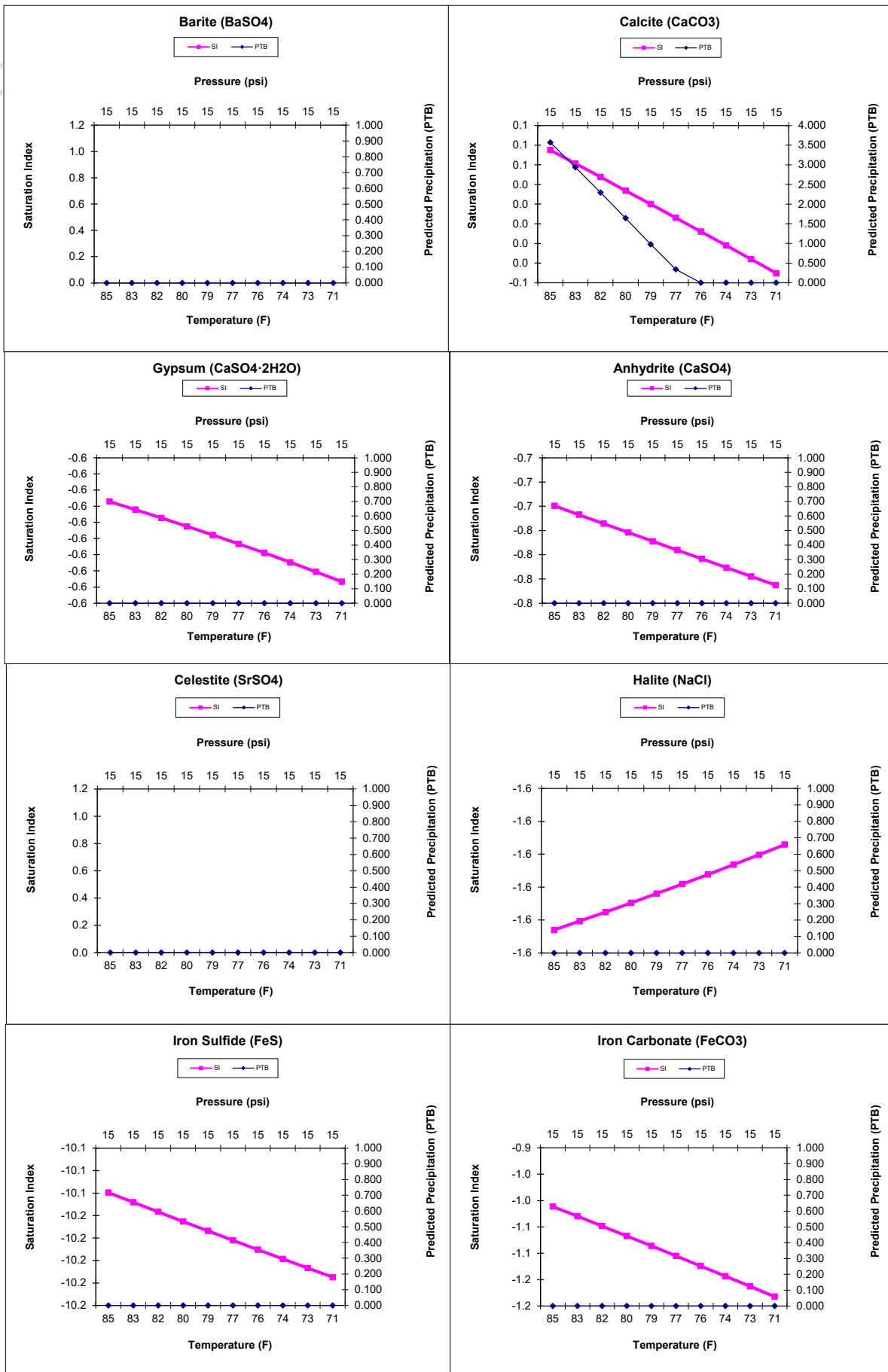
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

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.



Sample ID: Great Plains, Shulte No. 2 SWD, Tank to Shulte 2 SWD well



| Customer | District | Area | Lease | Sample Point | Salesman |
|-----------------|-----------------|-------------|-------------------------------|---------------------|-----------------|
| Great Plains | Kansas | Norton | ulte No. 2 SW to Shulte 2 SWD | | Tim Beims |

| Sampling Date | Analysis Date | Sample ID | Analyst | Chemical Used | Comments |
|----------------------|----------------------|------------------|----------------|----------------------|-----------------|
| 2/20/2020 | 1/0/1900 | 0 | Tim Beims | 0 | 0 |

| Total Dissolved Solids | Anion-Cation Ratio | Total Hardness | Density | Conductivity |
|-------------------------------|---------------------------|-----------------------|----------------|---------------------|
| 83315 | 1.00 | 16500 | 1.075 | 0.000 |

| ppm CO2 (aq) | ppm H2S (aq) | ppb O2 (aq) | pH field | pH lab | pH in calc | Bicarbonate | Carbonate | Hydroxide |
|---------------------|---------------------|--------------------|-----------------|---------------|-------------------|--------------------|------------------|------------------|
| 0.00 | 0.00 | 0.00 | 6.00 | NA | 0.00 | 160 | 0 | 0 |

| Chloride | Sulfate | Borate | Flouride | Bromide | Nitrite | Nitrate | Phosphate | Silica | Formate |
|-----------------|----------------|---------------|-----------------|----------------|----------------|----------------|------------------|---------------|----------------|
| 57600 | 500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 |

| Acetate | Propionate | Butyrate | Valerate | Sodium | Potassium | Magnesium | Calcium | Strontium |
|---------|------------|----------|----------|--------|-----------|-----------|---------|-----------|
| 0.0 | 0.0 | 0.0 | 0.0 | 29476 | 0 | 1040 | 5200 | 0 |

| | | | | | | | | |
|---------------|-------------|------------------|-------------|-------------|-----------------|-----------------|----------------|---------------|
| Barium | Iron | Manganese | Zinc | Lead | Aluminum | Chromium | Colbalt | Copper |
| 0.0 | 9.00 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | |
|--------------------|---------------------|---------------------|----------------------|--------------------|---------------------|-----------------------|
| Barite SI 1 | Barite PTB 1 | Calcite SI 1 | Calcite PTB 1 | Gypsum SI 1 | Gypsum PTB 1 | Anhydrite SI 1 |
| | 0 | 0.07 | 4 | -0.56 | 0 | -0.74 |

| | | | | | | | |
|------------------------|-----------------------|------------------------|------------------|-------------------|-----------------|------------------|-------------------|
| Anhydrite PTB 1 | Celestite SI 1 | Celestite PTB 1 | NaCl SI 1 | NaCl PTB 1 | FeS SI 1 | FeS PTB 1 | FeCO3 SI 1 |
| 0 | | 0 | -1.59 | 0 | -10.14 | 0 | -1.01 |

| | | | | | | |
|--------------------|-------------------|-----------------------|--------------------|---------------------|---------------------|----------------------|
| FeCO3 PTB 1 | SSP Temp 2 | SSP Pressure 2 | Barite SI 2 | Barite PTB 2 | Calcite SI 2 | Calcite PTB 2 |
| 0 | 71°F | 15 psi | | 0 | -0.05 | 0 |

| | | | | | | |
|--------------------|---------------------|-----------------------|------------------------|-----------------------|------------------------|------------------|
| Gypsum SI 2 | Gypsum PTB 2 | Anhydrite SI 2 | Anhydrite PTB 2 | Celestite SI 2 | Celestite PTB 2 | NaCl SI 2 |
| -0.57 | 0 | -0.81 | 0 | | 0 | -1.58 |

| NaCl PTB 2 | FeS SI 2 | FeS PTB 2 | FeCO3 SI 2 | FeCO3 PTB 2 |
|------------|----------|-----------|------------|-------------|
| 0 | -10.21 | 0 | -1.18 | 0 |