

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 | _____ | _____ | _____ | _____ | _____ |

Water Analysis Report

Attention: **Michael.Walters@ecolab.com**

Location Code: **375713**

Sample ID: **AK30937**

Login Batch: **2018-02-22-001-LP1**

Collection Date: **02/18/2018**

Receive Date: **02/22/2018**

Report Date: **02/26/2018**

Customer: **Great Plains Energy Inc (1505558)**

Region: **Kansas(KS)**

Location: **Trego County, KS**

System: **Disposal System**

Equipment: **Flax SWD**

Lab ID: **ABU-0055**

Sample Point: **Water Tank**

| Analyses | Result | Unit |
|---------------|----------------|------|
| Dissolved CO2 | 273 | mg/L |
| Dissolved H2S | 35 | mg/L |
| pH | 6.8 | |
| Pressure | <.25 | psi |
| Temperature | 50 | ° F |

| Analyses | Result | Unit |
|---------------------------|-----------------|----------|
| Bicarbonate | 503 | mg/L |
| Conductivity (Calculated) | 53799 | µS - cm3 |
| Ionic Strength | 0.66 | |
| Resistivity | 0.186 | ohms - m |
| Specific Gravity | 1.019 | |
| Total Dissolved Solids | 34432.06 | mg/L |

| Cations | Result | Unit |
|-----------|-----------------|------|
| Iron | 0.509 | mg/L |
| Manganese | 0.038 | mg/L |
| Barium | 0.097 | mg/L |
| Strontium | 43.40 | mg/L |
| Calcium | 1329 | mg/L |
| Magnesium | 368.8 | mg/L |
| Sodium | 11197.22 | mg/L |

| Anions | Result | Unit |
|----------|--------------|------|
| Chloride | 18947 | mg/L |
| Sulfate | 2043 | mg/L |

| Scale Type | Result |
|----------------------|--------------|
| Anhydrite CaSO4 SI | -0.90 |
| Barite BaSO4 PTB | 0.0 |
| Barite BaSO4 SI | 0.29 |
| Calcite CaCO3 SI | -0.43 |
| Celestite SrSO4 SI | 0.00 |
| Gypsum CaSO4 SI | -0.42 |
| Hemihydrate CaSO4 SI | -0.31 |

Saturation Index Calculation (Tomson-Oddo Model)

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Water Analysis Report

Attention: **Michael.Walters@ecolab.com**

Location Code: **294906**

Sample ID: **AK30938**

Login Batch: **2018-02-22-001-LP1**

Collection Date: **02/18/2018**

Receive Date: **02/22/2018**

Report Date: **02/26/2018**

Customer: **H&M Petroleum Corporation (1508375)**

Region: **Not Available**

Location: **Scott County, KS**

System: **Production System**

Equipment: **Well French #1 SWD**

Lab ID: **ABU-0055**

Sample Point: **Water Tank**

| Analyses | Result | Unit |
|---------------|----------------|------|
| Dissolved CO2 | 228 | mg/L |
| Dissolved H2S | 35 | mg/L |
| pH | 7.0 | |
| Pressure | <.25 | psi |
| Temperature | 50 | ° F |

| Analyses | Result | Unit |
|---------------------------|-----------------|----------|
| Bicarbonate | 320 | mg/L |
| Conductivity (Calculated) | 89221 | µS - cm3 |
| Ionic Strength | 1.04 | |
| Resistivity | 0.112 | ohms - m |
| Specific Gravity | 1.034 | |
| Total Dissolved Solids | 57102.02 | mg/L |

| Cations | Result | Unit |
|-----------|-----------------|------|
| Iron | 0.211 | mg/L |
| Manganese | 0.055 | mg/L |
| Barium | 0.050 | mg/L |
| Strontium | 26.85 | mg/L |
| Calcium | 844.0 | mg/L |
| Magnesium | 320.0 | mg/L |
| Sodium | 20475.85 | mg/L |

| Anions | Result | Unit |
|----------|--------------|------|
| Chloride | 30331 | mg/L |
| Sulfate | 4784 | mg/L |

| Scale Type | Result |
|----------------------|--------------|
| Anhydrite CaSO4 SI | -0.77 |
| Barite BaSO4 PTB | 0.0 |
| Barite BaSO4 SI | 0.18 |
| Calcite CaCO3 SI | -0.81 |
| Celestite SrSO4 PTB | 1.1 |
| Celestite SrSO4 SI | 0.03 |
| Gypsum CaSO4 SI | -0.33 |
| Hemihydrate CaSO4 SI | -0.27 |

Saturation Index Calculation (Tomson-Oddo Model)

Comments

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