

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	_____	_____	_____	_____	_____
	<b>TOTAL</b>	_____	_____	_____	_____	_____



**DownHole SAT(tm)**  
FORMATION WATER CHEMISTRY INPUT

Enterra  
Hanke SWD

Pro-Stim Chemicals  
Troy Pelton

Report Date: 08-01-2018      Sampled: 07-27-2018 at 0823  
Sample #: 4516                      Sample ID: WBaten

**CATIONS**

Calcium (as Ca)	4880
Magnesium (as Mg)	4082
Barium (as Ba)	77.00
Strontium (as Sr)	0.00
Sodium (as Na)	57736
Potassium (as K)	0.00
Lithium (as Li)	0.00
Ammonia (as NH <sub>3</sub> )	0.00
Aluminum (as Al)	0.00
Iron (as Fe)	48.00
Manganese (as Mn)	2.83
Zinc (as Zn)	0.00
Lead (as Pb)	0.00

**ANIONS**

Chloride (as Cl)	110000
Sulfate (as SO <sub>4</sub> )	650.00
Bromine (as Br)	0.00
Dissolved CO <sub>2</sub> (as CO <sub>2</sub> )	150.00
Bicarbonate (as HCO <sub>3</sub> )	140.00
Carbonate (as CO <sub>3</sub> )	0.00
Oxalic acid (as C <sub>2</sub> O <sub>4</sub> )	0.00
Silica (as SiO <sub>2</sub> )	0.00
Phosphate(as PO <sub>4</sub> )	0.00
H <sub>2</sub> S (as H <sub>2</sub> S)	0.00
Fluoride (as F)	0.00
Nitrate (as NO <sub>3</sub> )	0.00
Boron (as B)	0.00

**PARAMETERS**

Calculated T.D.S.	171386
Molar Conductivity	282744
Resistivity	3.54
Sp.Gr.(g/mL)	1.11
Pressure(psia)	14.70
pCO <sub>2</sub> (psia)	0.00994
pH <sub>2</sub> S(atm)	0.00
Temperature (°F)	70.00
pH	6.93

**CORROSION RATE PREDICTION**

CO <sub>2</sub> - H <sub>2</sub> S Rate(mpy)	0.00477
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**COMMENTS** All anions & cations are in mg/l

FRENCH CREEK SOFTWARE, INC.  
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460



**DownHole SAT(tm)**  
**FORMATION WATER**  
**DEPOSITION POTENTIAL INDICATORS**

Enterra  
Hanke SWD

Pro-Stim Chemicals  
Troy Pelton

Report Date: 08-01-2018      Sampled: 07-27-2018 at 0823  
 Sample #: 4516                      Sample ID: WBaten

**SATURATION LEVEL**

Calcite (CaCO <sub>3</sub> )	1.42
Aragonite (CaCO <sub>3</sub> )	1.33
Witherite (BaCO <sub>3</sub> )	0.00297
Strontianite (SrCO <sub>3</sub> )	0.00
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	0.00
Magnesite (MgCO <sub>3</sub> )	1.28
Anhydrite (CaSO <sub>4</sub> )	0.188
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	0.257
Barite (BaSO <sub>4</sub> )	112.40
Celestite (SrSO <sub>4</sub> )	0.00
Fluorite (CaF <sub>2</sub> )	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO <sub>2</sub> )	0.00
Brucite (Mg(OH) <sub>2</sub> )	< 0.001
Magnesium silicate	0.00
Iron hydroxide (Fe(OH) <sub>3</sub> )	30.59
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	0.00
Siderite (FeCO <sub>3</sub> )	7.88
Halite (NaCl)	0.122
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	< 0.001
Iron sulfide (FeS)	0.00

**FREE ION MOMENTARY EXCESS (ppm)**

Calcite (CaCO <sub>3</sub> )	0.0238
Aragonite (CaCO <sub>3</sub> )	0.0202
Witherite (BaCO <sub>3</sub> )	-39.40
Strontianite (SrCO <sub>3</sub> )	-24.95
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	-0.0271
Magnesite (MgCO <sub>3</sub> )	0.0151
Anhydrite (CaSO <sub>4</sub> )	-905.57
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	-695.94
Barite (BaSO <sub>4</sub> )	129.10
Celestite (SrSO <sub>4</sub> )	-679.84
Fluorite (CaF <sub>2</sub> )	-8.97
Calcium phosphate	>-0.001
Hydroxyapatite	-820.41
Silica (SiO <sub>2</sub> )	-81.42
Brucite (Mg(OH) <sub>2</sub> )	0.00571
Magnesium silicate	-258.64
Iron hydroxide (Fe(OH) <sub>3</sub> )	< 0.001
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	>-0.001
Siderite (FeCO <sub>3</sub> )	0.0818
Halite (NaCl)	-291499
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	-244211
Iron sulfide (FeS)	-0.108

**SIMPLE INDICES**

Langelier	0.825
Ryznar	5.28
Puckorius	4.75
Larson-Skold Index	1423
Stiff Davis Index	0.490
Oddo-Tomson	-0.331

**BOUND IONS**

Calcium	4880	4805
Barium	77.00	77.00
Carbonate	7.20	0.0485
Phosphate	0.00	0.00
Sulfate	650.00	158.01

**TOTAL      FREE**

**OPERATING CONDITIONS**

Temperature (°F)	70.00
Time(mins)	3.00

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