

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

Petroleum Resource Mgmt      SanCo, LLC  
Hammond                              Gary Sanborn & Brian Anderson  
Gun Barrel H2O Leg

Report Date:      03-11-2019      Sampled:      01-24-2019 at 1047  
Sample #:            5401                      Sample ID:      KHamburg

### CATIONS

Calcium (as Ca)	2480
Magnesium (as Mg)	875.00
Barium (as Ba)	78.00
Strontium (as Sr)	0.00
Sodium (as Na)	26170
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)	11.50
Manganese (as Mn)	0.487
Zinc (as Zn)	0.00
Lead (as Pb)	0.00

### ANIONS

Chloride (as Cl)	49000
Sulfate (as SO <sub>4</sub> )	40.00
Bromine (as Br)	0.00
Dissolved CO <sub>2</sub> (as CO <sub>2</sub> )	35.00
Bicarbonate (as HCO <sub>3</sub> )	340.00
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.	77976
Molar Conductivity	108982
Resistivity	9.18
Sp.Gr.(g/mL)	1.05
Pressure(psia)	14.70
pCO <sub>2</sub> (psia)	0.00937
pH <sub>2</sub> S(atm)	0.00
Temperature (°F)	69.00
pH	7.41

### CORROSION RATE PREDICTION

CO <sub>2</sub> - H <sub>2</sub> S Rate(mpy)	0.00447
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**COMMENTS** All cations & anions are in mg/l

**FRENCH CREEK SOFTWARE, INC.**  
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# DownHole SAT(tm)

## FORMATION WATER DEPOSITION POTENTIAL INDICATORS

Petroleum Resource Mgmt	SanCo, LLC
Hammond	Gary Sanborn & Brian Anderson
Gun Barrel H2O Leg	
Report Date: 03-11-2019	Sampled: 01-24-2019 at 1047
Sample #: 5401	Sample ID: KHamburg

### SATURATION LEVEL

Calcite (CaCO <sub>3</sub> )	8.03
Aragonite (CaCO <sub>3</sub> )	7.57
Witherite (BaCO <sub>3</sub> )	0.0733
Strontianite (SrCO <sub>3</sub> )	0.00
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	0.00
Magnesite (MgCO <sub>3</sub> )	2.50
Anhydrite (CaSO <sub>4</sub> )	0.0106
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	0.0166
Barite (BaSO <sub>4</sub> )	27.87
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> )	714.15
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	0.00
Siderite (FeCO <sub>3</sub> )	41.95
Halite (NaCl)	0.0191
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> )	1.15
Aragonite (CaCO <sub>3</sub> )	1.14
Witherite (BaCO <sub>3</sub> )	-26.02
Strontianite (SrCO <sub>3</sub> )	-19.64
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	-0.0768
Magnesite (MgCO <sub>3</sub> )	0.663
Anhydrite (CaSO <sub>4</sub> )	-2146
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	-1650
Barite (BaSO <sub>4</sub> )	46.89
Celestite (SrSO <sub>4</sub> )	-585.97
Fluorite (CaF <sub>2</sub> )	-15.49
Calcium phosphate	>-0.001
Hydroxyapatite	-970.20
Silica (SiO <sub>2</sub> )	-94.84
Brucite (Mg(OH) <sub>2</sub> )	0.0165
Magnesium silicate	-288.88
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> )	1.48
Halite (NaCl)	-450085
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	-214431
Iron sulfide (FeS)	-0.0975

### SIMPLE INDICES

Langelier	1.17
Ryznar	5.07
Puckorius	4.38
Larson-Skold Index	248.52
Stiff Davis Index	0.438
Oddo-Tomson	0.193

### BOUND IONS

Calcium	2480	2451
Barium	78.00	78.00
Carbonate	14.12	0.786
Phosphate	0.00	0.00
Sulfate	40.00	20.44

### OPERATING CONDITIONS

Temperature (°F)	69.00
Time(mins)	3.00