

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>	_____	_____	_____	_____	_____



LINN OPERATING  
KENT MILBURN  
STANTON KSWILSON MS 1 SWDW  
TANK BATTERYReport Date: 12-31-2018      Sampled: 12-12-2018  
Sample #: 3076                                  at 0000  
  
Sample ID: 208721**SATURATION LEVEL**

Calcite (CaCO <sub>3</sub> )	0.0243
Aragonite (CaCO <sub>3</sub> )	0.0216
Witherite (BaCO <sub>3</sub> )	< 0.001
Strontianite (SrCO <sub>3</sub> )	< 0.001
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	0.00
Magnesite (MgCO <sub>3</sub> )	0.0129
Anhydrite (CaSO <sub>4</sub> )	0.637
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	0.809
Barite (BaSO <sub>4</sub> )	0.437
Celestite (SrSO <sub>4</sub> )	0.250
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> )	< 0.001
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	0.00
Siderite (FeCO <sub>3</sub> )	0.00207
Halite (NaCl)	0.378
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	< 0.001
Iron sulfide (FeS)	< 0.001

**MOMENTARY EXCESS (Lbs/1000 Barrels)**

Calcite (CaCO <sub>3</sub> )	-0.0102
Aragonite (CaCO <sub>3</sub> )	-0.0116
Witherite (BaCO <sub>3</sub> )	-25.58
Strontianite (SrCO <sub>3</sub> )	-0.702
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	-0.00403
Magnesite (MgCO <sub>3</sub> )	-0.0165
Anhydrite (CaSO <sub>4</sub> )	-74.63
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	-35.10
Barite (BaSO <sub>4</sub> )	-0.0990
Celestite (SrSO <sub>4</sub> )	-154.38
Fluorite (CaF <sub>2</sub> )	-1.91
Calcium phosphate	>-0.001
Hydroxyapatite	-203.58
Silica (SiO <sub>2</sub> )	-17.94
Brucite (Mg(OH) <sub>2</sub> )	< 0.001
Magnesium silicate	-70.23
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> )	-0.131
Halite (NaCl)	-48974
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	-87500
Iron sulfide (FeS)	-3.53

**SIMPLE INDICES**

Langelier	-0.795
Ryznar	6.59
Puckorius	3.97
Larson-Skold Index	1632
Stiff Davis Index	-0.841
Oddo-Tomson	-1.85

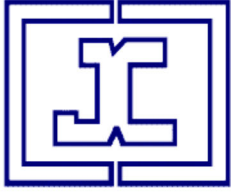
**BOUND IONS**

Calcium	6792	6582
Barium	0.130	0.130
Carbonate	0.149	< 0.001
Phosphate	0.00	0.00
Sulfate	1375	272.10

**TOTAL****FREE****OPERATING CONDITIONS**

Temperature (°F)	50.00
Time(secs)	0.00

# DownHole SAT™ Water Analysis Report



JACAM LABORATORIES

## SYSTEM IDENTIFICATION

LINN OPERATING  
WILSON MS 1 SWDW  
KENT MILBURN  
TANK BATTERY  
STANTON KS

Sample ID#: 3076  
ID: 208721  
Report Date: 12-31-2018  
Sample Date: 12-12-2018  
at 0000

## WATER CHEMISTRY

### CATIONS

Calcium(as Ca)	6792
Magnesium(as Mg)	3558
Barium(as Ba)	0.130
Srionium(as Sr)	182.50
Sodium(as Na)	82985
Potassium(as K)	607.50
Lithium(as Li)	8.24
Iron(as Fe)	2.05
Field Iron(as Fe)	0.00
Ammonia(as NH <sub>3</sub> )	0.00
Aluminum(as Al)	0.120
Manganese(as Mn)	1.48
Zinc(as Zn)	0.677
Lead(as Pb)	0.00

### ANIONS

Chloride(as Cl)	171600
Sulfate(as SO <sub>4</sub> )	1375
Bromine(as Br)	0.00
Dissolved CO <sub>2</sub> (as CO <sub>2</sub> )	175.00
Bicarbonate(as HCO <sub>3</sub> )	213.50
Carbonate(as CO <sub>3</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)	0.500
Fluoride(as F)	0.00
Nitrate(as NO <sub>3</sub> )	0.00
Boron(as B)	4.37

### PARAMETERS

Temperature(°F)	50.00
T.D.S.	250163
Resistivity:	2.05
Sample pH	5.00
Conductivity:	487477

## SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (atm)	Calcite CaCO <sub>3</sub>		Anhydrite CaSO <sub>4</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> O		Barite BaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Siderite FeCO <sub>3</sub>		Mackawenite FeS		CO <sub>2</sub> (mpy)	pCO <sub>2</sub> (atm)
50.00	0.00	0.0243	-0.0102	0.637	-74.63	0.809	-35.10	0.437	-0.0990	0.250	-154.38	0.00207	-0.131	< 0.001	-3.53	0.353	0.0965
65.45	0.00	0.0337	-0.00896	0.561	-93.14	0.689	-61.04	0.258	-0.221	0.213	-172.76	0.00321	-0.105	< 0.001	-3.58	1.40	0.0965
80.91	0.00	0.0446	-0.00792	0.523	-99.05	0.600	-82.39	0.162	-0.397	0.192	-181.35	0.00473	-0.0851	< 0.001	-3.63	1.25	0.0965
96.36	0.00	0.0566	-0.00708	0.514	-94.39	0.532	-99.31	0.108	-0.635	0.180	-184.36	0.00665	-0.0701	< 0.001	-3.70	1.63	0.0965
111.82	0.00	0.0693	-0.00640	0.528	-82.08	0.517	-97.23	0.0750	-0.944	0.170	-184.87	0.00896	-0.0587	< 0.001	-3.76	1.85	0.0965
127.27	0.00	0.0834	-0.00584	0.567	-65.16	0.533	-84.74	0.0530	-1.36	0.162	-185.87	0.0118	-0.0498	< 0.001	-3.84	1.89	0.0965
142.73	0.00	0.0990	-0.00538	0.632	-46.38	0.544	-75.27	0.0379	-1.93	0.153	-187.64	0.0153	-0.0428	< 0.001	-3.92	1.88	0.0965
158.18	0.00	0.116	-0.00500	0.729	-27.79	0.553	-68.07	0.0274	-2.67	0.144	-190.13	0.0194	-0.0373	< 0.001	-4.00	1.76	0.0965
173.64	0.00	0.133	-0.00469	0.868	-10.79	0.559	-62.64	0.0201	-3.65	0.136	-193.35	0.0242	-0.0329	< 0.001	-4.10	1.63	0.0965
189.09	0.00	0.151	-0.00443	1.06	3.90	0.563	-58.62	0.0148	-4.90	0.127	-197.32	0.0295	-0.0294	< 0.001	-4.20	0.874	0.0965
204.55	0.00	0.167	-0.00424	1.33	16.02	0.564	-55.76	0.0111	-6.49	0.120	-202.11	0.0351	-0.0265	< 0.001	-4.31	0.619	0.0965
220.00	0.171	0.179	-0.00425	1.70	26.20	0.559	-56.21	0.00829	-8.54	0.111	-212.09	0.0404	-0.0250	< 0.001	-4.48	0.611	0.113
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. {Ca}{CO<sub>3</sub>}/K<sub>sp</sub>. pCO<sub>2</sub> (atm) is the partial pressure of CO<sub>2</sub> in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

