

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™ Water Analysis Report



JACAM LABORATORIES

## SYSTEM IDENTIFICATION

LINN OPERATING  
HCU 1441 B SWD  
DREW LOTT  
FLOWLINE  
HAMILTON KS

Sample ID#: 3076  
ID: 145340  
Report Date: 03-06-2017  
Sample Date: 01-24-2017  
at 0000

## WATER CHEMISTRY

### CATIONS

Calcium(as Ca)	5795
Magnesium(as Mg)	1819
Barium(as Ba)	0.204
Strontium(as Sr)	160.30
Sodium(as Na)	37812
Potassium(as K)	573.00
Lithium(as Li)	22.47
Iron(as Fe)	0.0510
Field Iron(as Fe)	0.00
Ammonia(as NH <sub>3</sub> )	0.00
Aluminum(as Al)	2.28
Manganese(as Mn)	0.0330
Zinc(as Zn)	2.00
Lead(as Pb)	0.00

### ANIONS

Chloride(as Cl)	78200
Sulfate(as SO <sub>4</sub> )	1925
Bromine(as Br)	0.00
Dissolved CO <sub>2</sub> (as CO <sub>2</sub> )	100.00
Bicarbonate(as HCO <sub>3</sub> )	108.00
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)	0.00
Fluoride(as F)	0.00
Nitrate(as NO <sub>3</sub> )	0.00
Boron(as B)	24.15

### PARAMETERS

Temperature(°F)	52.00
T.D.S.	124059
Conductivity:	177967
Sample pH	6.80
Resistivity:	5.62

## 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	0.711	-0.00775	0.863	-53.43	1.34	98.75	3.01	0.0807	0.955	-4.46	0.00459	-0.388	0.00	-0.431	0.0615	0.00994
65.45	0.00	0.979	>-0.001	0.787	-85.47	1.18	56.20	1.85	0.0554	0.842	-17.00	0.00709	-0.338	0.00	-0.436	0.115	0.00994
80.91	0.00	1.29	0.00607	0.760	-94.27	1.06	20.84	1.20	0.0204	0.789	-23.65	0.0104	-0.297	0.00	-0.442	0.0463	0.00994
96.36	0.00	1.62	0.0118	0.772	-83.74	0.977	-7.59	0.828	-0.0251	0.763	-26.81	0.0145	-0.263	0.00	-0.449	0.0462	0.00994
111.82	0.00	1.95	0.0166	0.820	-59.22	0.981	-6.07	0.596	-0.0819	0.750	-28.35	0.0192	-0.235	0.00	-0.456	0.0331	0.00994
127.27	0.00	2.28	0.0207	0.908	-26.32	1.04	11.77	0.435	-0.157	0.734	-30.24	0.0246	-0.211	0.00	-0.464	0.0149	0.00994
142.73	0.00	2.59	0.0240	1.04	9.93	1.10	24.91	0.321	-0.255	0.715	-32.60	0.0305	-0.191	0.00	-0.473	0.0314	0.00994
158.18	0.00	2.86	0.0264	1.24	45.64	1.15	34.55	0.239	-0.384	0.694	-35.39	0.0363	-0.174	0.00	-0.483	0.0326	0.00994
173.64	0.00	3.03	0.0275	1.51	78.22	1.19	41.59	0.180	-0.550	0.672	-38.58	0.0415	-0.161	0.00	-0.493	0.0338	0.00994
189.09	0.00	3.10	0.0273	1.89	106.30	1.23	46.69	0.136	-0.764	0.648	-42.13	0.0453	-0.150	0.00	-0.504	0.0170	0.00994
204.55	0.00	3.05	0.0259	2.43	129.45	1.26	50.34	0.104	-1.03	0.623	-46.05	0.0472	-0.142	0.00	-0.516	0.0143	0.00994
220.00	0.171	2.84	0.0235	3.15	150.40	1.27	51.86	0.0794	-1.39	0.590	-51.98	0.0462	-0.138	0.00	-0.534	0.0194	0.0116

  

	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels	Lbs per xSAT 1000 Barrels
50.00							
65.45							
80.91							
96.36							
111.82							
127.27							
142.73							
158.18							
173.64							
189.09							
204.55							
220.00							

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.

