

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:

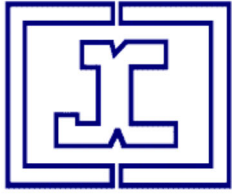
Type (Pick one): Fresh Water Treated Brine Untreated Brine Water/Brine
Source: Produced Water Other (Attach list)
Quality: Total Dissolved Solids: _____ mg/l Specific Gravity: _____ Additives: _____
(Attach water analysis, if available)

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	_____	_____	_____	_____	_____

DownHole SAT™ Water Analysis Report



JACAM LABORATORIES

SYSTEM IDENTIFICATION

LINN OPERATING
 HCU 3030 E SWD
 JEFF SULLIVAN
 DUMP LINE
 HAMILTON KS

Sample ID#: 3076
 ID: 208782
 Report Date: 01-02-2019
 Sample Date: 12-13-2018
 at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	3503
Magnesium(as Mg)	1451
Barium(as Ba)	1.62
Strontium(as Sr)	76.40
Sodium(as Na)	66560
Potassium(as K)	386.80
Lithium(as Li)	8.35
Iron(as Fe)	5.15
Field Iron(as Fe)	15.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	0.00
Manganese(as Mn)	0.356
Zinc(as Zn)	0.409
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	124400
Sulfate(as SO ₄)	2700
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	25.00
Bicarbonate(as HCO ₃)	30.50
Carbonate(as CO ₃)	0.00
Silica(as SiO ₂)	0.00
Phosphate(as PO ₄)	0.00
H ₂ S (as H ₂ S)	5.00
Fluoride(as F)	0.00
Nitrate(as NO ₃)	0.00
Boron(as B)	9.56

PARAMETERS

Temperature(°F)	51.10
T.D.S.	190881
Conductivity:	315268
Sample pH	7.17
Resistivity:	3.17

SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (atm)	Calcite CaCO ₃		Anhydrite CaSO ₄		Gypsum CaSO ₄ *2H ₂ O		Barite BaSO ₄		Celestite SrSO ₄		Siderite FeCO ₃		Mackawenite FeS		CO ₂ (mpy)	pCO ₂ (atm)
50.00	0.00	0.225	-0.0257	0.866	-67.66	1.21	89.99	25.86	0.922	0.495	-49.32	0.162	-0.0441	24.99	0.415	0.0171	0.00133
65.45	0.00	0.297	-0.0206	0.789	-109.79	1.07	30.69	15.80	0.899	0.435	-61.19	0.239	-0.0316	19.98	0.402	0.0321	0.00133
80.91	0.00	0.361	-0.0167	0.760	-122.30	0.961	-18.40	10.26	0.866	0.406	-67.63	0.324	-0.0226	16.06	0.388	0.00926	0.00133
96.36	0.00	0.403	-0.0141	0.770	-110.04	0.880	-57.71	7.04	0.823	0.392	-70.77	0.400	-0.0164	13.00	0.372	0.0121	0.00133
111.82	0.00	0.414	-0.0127	0.816	-79.44	0.881	-54.35	5.05	0.769	0.383	-72.38	0.452	-0.0125	10.63	0.355	0.0127	0.00133
127.27	0.00	0.399	-0.0120	0.901	-37.24	0.934	-27.41	3.67	0.698	0.374	-74.35	0.475	-0.0101	8.77	0.335	0.0107	0.00133
142.73	0.00	0.363	-0.0119	1.03	10.27	0.981	-7.12	2.70	0.603	0.363	-76.82	0.469	-0.00886	7.30	0.314	0.00864	0.00133
158.18	0.00	0.316	-0.0121	1.22	58.02	1.02	8.09	2.00	0.480	0.351	-79.76	0.438	-0.00823	6.10	0.290	0.00900	0.00133
173.64	0.00	0.266	-0.0124	1.49	102.48	1.06	19.47	1.50	0.319	0.338	-83.13	0.393	-0.00796	5.10	0.264	0.00931	0.00133
189.09	0.00	0.218	-0.0127	1.86	141.49	1.09	27.88	1.13	0.113	0.325	-86.93	0.341	-0.00789	4.26	0.236	0.00469	0.00133
204.55	0.00	0.177	-0.0130	2.39	174.28	1.12	34.00	0.864	-0.151	0.312	-91.16	0.288	-0.00795	3.53	0.204	0.00393	0.00133
220.00	0.171	0.138	-0.0138	3.09	203.70	1.12	35.28	0.654	-0.505	0.294	-97.92	0.231	-0.00845	3.26	0.182	0.00536	0.00155
		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}{CO₃}/K_{sp}. pCO₂ (atm) is the partial pressure of CO₂ in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

