

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:

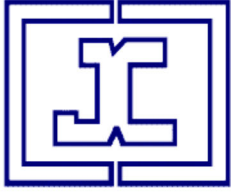
Type (Pick one): Fresh Water Treated Brine Untreated Brine Water/Brine
Source: Produced Water Other (Attach list)
Quality: Total Dissolved Solids: _____ mg/l Specific Gravity: _____ Additives: _____
(Attach water analysis, if available)

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
WATKINS E.M. SWDW 1
KENT MILBURN
TANK BATTERY
HASKELL KS

Sample ID#: 3076
ID: 208728
Report Date: 12-31-2018
Sample Date: 12-12-2018
at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	40680
Magnesium(as Mg)	10440
Barium(as Ba)	0.541
Strontium(as Sr)	1176
Sodium(as Na)	52522
Potassium(as K)	3380
Lithium(as Li)	61.50
Iron(as Fe)	0.837
Field Iron(as Fe)	0.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	0.00
Manganese(as Mn)	3.61
Zinc(as Zn)	1.27
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	203400
Sulfate(as SO ₄)	2175
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	235.00
Bicarbonate(as HCO ₃)	48.80
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)	0.500
Fluoride(as F)	0.00
Nitrate(as NO ₃)	0.00
Boron(as B)	93.06

PARAMETERS

Temperature(°F)	58.00
Sample pH	6.30
T.D.S.	295834
Conductivity:	897563
Resistivity:	1.11

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	0.221 >-0.001	1.89 17.55	2.31 23.88	0.354 -0.575	0.316 -93.28	< 0.001 -0.266	0.0142 -0.725	0.0703	0.0102
65.45	0.00	0.292 >-0.001	1.65 13.23	1.94 18.47	0.207 -1.19	0.266 -106.41	< 0.001 -0.221	0.0131 -0.740	0.166	0.0102
80.91	0.00	0.372 >-0.001	1.53 10.52	1.68 13.95	0.129 -2.06	0.238 -111.56	0.00109 -0.186	0.0118 -0.757	0.0819	0.0102
96.36	0.00	0.458 >-0.001	1.49 9.17	1.48 10.24	0.0855 -3.19	0.222 -112.24	0.00148 -0.158	0.0106 -0.776	0.107	0.0102
111.82	0.00	0.546 >-0.001	1.53 8.84	1.43 8.76	0.0592 -4.58	0.210 -111.05	0.00194 -0.136	0.00935 -0.796	0.113	0.0102
127.27	0.00	0.638 >-0.001	1.64 9.18	1.47 8.59	0.0418 -6.31	0.198 -110.46	0.00249 -0.118	0.00830 -0.817	0.0956	0.0102
142.73	0.00	0.732 >-0.001	1.82 9.91	1.50 8.34	0.0298 -8.45	0.187 -110.63	0.00311 -0.103	0.00738 -0.839	0.0777	0.0102
158.18	0.00	0.820 >-0.001	2.10 10.79	1.53 8.05	0.0216 -11.00	0.177 -111.55	0.00378 -0.0918	0.00656 -0.862	0.0761	0.0102
173.64	0.00	0.895 >-0.001	2.50 11.67	1.54 7.76	0.0158 -13.97	0.166 -113.21	0.00446 -0.0824	0.00582 -0.887	0.0744	0.0102
189.09	0.00	0.949 >-0.001	3.06 12.46	1.56 7.48	0.0117 -17.37	0.157 -115.62	0.00509 -0.0749	0.00515 -0.913	0.0358	0.0102
204.55	0.00	0.971 >-0.001	3.85 13.15	1.56 7.23	0.00876 -21.23	0.147 -118.84	0.00558 -0.0688	0.00453 -0.942	0.0290	0.0102
220.00	0.171	0.936 >-0.001	4.95 14.17	1.56 7.21	0.00661 -25.89	0.138 -126.89	0.00576 -0.0660	0.00446 -0.977	0.0391	0.0119
		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	Lbs per xSAT 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.

