



**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  
E.M. WATKINS SWD  
MICHAEL BELLOWY  
FLOWLINE  
HASKELL KS

Sample ID#: 3076  
ID: 117606  
Report Date: 01-26-2016  
Sample Date: 01-18-2016  
at 0000

## WATER CHEMISTRY

### CATIONS

Calcium(as Ca)	42300
Magnesium(as Mg)	11500
Barium(as Ba)	1.39
Strontium(as Sr)	1055
Sodium(as Na)	50756
Potassium(as K)	2957
Lithium(as Li)	64.16
Iron(as Fe)	2.69
Field Iron(as Fe)	0.00
Ammonia(as NH <sub>3</sub> )	0.00
Aluminum(as Al)	0.00
Manganese(as Mn)	3.53
Zinc(as Zn)	4.00
Lead(as Pb)	0.00

### ANIONS

Chloride(as Cl)	209000
Sulfate(as SO <sub>4</sub> )	0.00
Bromine(as Br)	0.00
Dissolved CO <sub>2</sub> (as CO <sub>2</sub> )	440.00
Bicarbonate(as HCO <sub>3</sub> )	6.10
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)	83.05

### PARAMETERS

Temperature(°F)	43.00
T.D.S.	299455
Conductivity:	947610
Sample pH	5.80
Resistivity:	1.06

## 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	0.00786	>-0.001	0.00	-19.06	0.00	-17.67	0.00	-7.43	0.00	-156.73	< 0.001	-0.118	0.00	-1.42	0.0524	0.00209
65.45	0.00	0.0104	>-0.001	0.00	-19.72	0.00	-18.91	0.00	-9.33	0.00	-166.26	< 0.001	-0.0943	0.00	-1.44	0.169	0.00209
80.91	0.00	0.0133	>-0.001	0.00	-19.33	0.00	-19.87	0.00	-11.33	0.00	-167.90	< 0.001	-0.0766	0.00	-1.47	0.0557	0.00209
96.36	0.00	0.0165	>-0.001	0.00	-18.08	0.00	-20.56	0.00	-13.38	0.00	-165.28	< 0.001	-0.0632	0.00	-1.50	0.0729	0.00209
111.82	0.00	0.0198	>-0.001	0.00	-16.22	0.00	-19.53	0.00	-15.47	0.00	-161.13	< 0.001	-0.0529	0.00	-1.53	0.0785	0.00209
127.27	0.00	0.0235	>-0.001	0.00	-14.02	0.00	-17.59	0.00	-17.77	0.00	-158.02	< 0.001	-0.0451	0.00	-1.56	0.0707	0.00209
142.73	0.00	0.0274	>-0.001	0.00	-11.74	0.00	-16.05	0.00	-20.34	0.00	-156.12	< 0.001	-0.0389	0.00	-1.60	0.0615	0.00209
158.18	0.00	0.0316	>-0.001	0.00	-9.55	0.00	-14.83	0.00	-23.21	0.00	-155.36	< 0.001	-0.0341	0.00	-1.64	0.0563	0.00209
173.64	0.00	0.0359	>-0.001	0.00	-7.58	0.00	-13.86	0.00	-26.41	0.00	-155.70	< 0.001	-0.0302	0.00	-1.68	0.0513	0.00209
189.09	0.00	0.0401	>-0.001	0.00	-5.89	0.00	-13.10	0.00	-30.00	0.00	-157.14	< 0.001	-0.0272	0.00	-1.72	0.0210	0.00209
204.55	0.00	0.0441	>-0.001	0.00	-4.50	0.00	-12.53	0.00	-34.01	0.00	-159.70	< 0.001	-0.0248	0.00	-1.77	0.0149	0.00209
220.00	0.171	0.0468	>-0.001	0.00	-3.50	0.00	-12.55	0.00	-39.23	0.00	-168.51	< 0.001	-0.0236	0.00	-1.85	0.0197	0.00245

  

	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	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}{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.

