



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
HILL SWD
MICHAEL BELLOMY
FLOWLINE
SUMNER KS

Sample ID#: 3076
ID: 117384
Report Date: 01-22-2016
Sample Date: 01-13-2016
at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	12270
Magnesium(as Mg)	3027
Barium(as Ba)	0.204
Strontium(as Sr)	239.80
Sodium(as Na)	64418
Potassium(as K)	670.50
Lithium(as Li)	9.36
Iron(as Fe)	5.36
Field Iron(as Fe)	0.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	0.00
Manganese(as Mn)	0.0120
Zinc(as Zn)	1.28
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	145200
Sulfate(as SO ₄)	875.00
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	120.00
Bicarbonate(as HCO ₃)	12.20
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)	5.97

PARAMETERS

Temperature(°F)	56.00
T.D.S.	216306
Conductivity:	383006
Resistivity:	2.61
Sample pH	5.54

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	0.00798	-0.00705	0.594	-54.29	0.806	-21.63	0.435	-0.157	0.208	-161.96	0.00120	-0.0537	0.00381	-1.73	0.0833	0.00473
65.45	0.00	0.0108	-0.00621	0.532	-64.59	0.699	-35.95	0.261	-0.340	0.180	-176.72	0.00183	-0.0424	0.00374	-1.76	0.294	0.00473
80.91	0.00	0.0140	-0.00554	0.505	-66.89	0.619	-47.70	0.167	-0.598	0.166	-182.19	0.00264	-0.0341	0.00363	-1.79	0.120	0.00473
96.36	0.00	0.0176	-0.00500	0.505	-62.49	0.559	-56.95	0.113	-0.937	0.158	-182.54	0.00367	-0.0279	0.00348	-1.83	0.157	0.00473
111.82	0.00	0.0214	-0.00457	0.528	-53.30	0.553	-54.76	0.0803	-1.36	0.153	-180.76	0.00491	-0.0232	0.00329	-1.87	0.172	0.00473
127.27	0.00	0.0256	-0.00422	0.577	-41.31	0.579	-46.36	0.0578	-1.93	0.147	-179.72	0.00644	-0.0196	0.00313	-1.91	0.161	0.00473
142.73	0.00	0.0301	-0.00393	0.653	-28.28	0.602	-39.93	0.0421	-2.67	0.142	-179.64	0.00828	-0.0169	0.00299	-1.96	0.146	0.00473
158.18	0.00	0.0348	-0.00371	0.766	-15.54	0.621	-35.00	0.0310	-3.63	0.136	-180.45	0.0104	-0.0147	0.00285	-2.01	0.133	0.00473
173.64	0.00	0.0396	-0.00353	0.925	-3.96	0.637	-31.24	0.0230	-4.84	0.130	-182.15	0.0128	-0.0129	0.00272	-2.06	0.120	0.00473
189.09	0.00	0.0442	-0.00339	1.15	6.02	0.650	-28.39	0.0173	-6.35	0.124	-184.72	0.0154	-0.0115	0.00259	-2.12	0.0483	0.00473
204.55	0.00	0.0482	-0.00330	1.46	14.27	0.661	-26.28	0.0131	-8.22	0.118	-188.21	0.0181	-0.0104	0.00245	-2.18	0.00305	0.00473
220.00	0.171	0.0505	-0.00335	1.89	21.34	0.663	-26.00	0.00995	-10.57	0.112	-196.89	0.0204	-0.00987	0.00260	-2.27	0.00	0.00554

	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	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.

