

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	_____	_____	_____	_____	_____

COMPANY: PHILLIPS EXPLORATION
 LEASE/WELL #: AMERINE 3
 DATE: 10/20/09
 REV: 5/6/86

STIFF-DAVIS

FORMULA SI = pH - pCa - pAlk - K

pH is the pH of the sample of water
 pCa is the negative logarithm of the calcium concentration
 pAlk is the negative logarithm of the total alkalinity
 k is a constant determined by the amount of dissolved solids and temperature

pH (6.10)
 Ca (12512) pCa = 0.5047333
 HCO3 = (167.75) pAlk = 2.5606673

	Mg/L		
Na (	78,305)	x 2.2 E-5	1.7227
Ca (	12,512)	x 5.0 E-5	0.6256
Mg (	1,970)	x 8.2 E-5	0.1616
Cl (	143,400)	x 1.4 E-5	2.0076
HCO3 (	168)	x 0.8 E-5	0.0013
SO4 (	50)	x 2.1 E-5	0.0011
TOTAL IONIC STRENGTH			4.5199

TEMP (F)	K Value	SI Value
68	2.28	0.75
86	2.01	1.02
104	1.56	1.47
122	1.12	1.91
140	0.00	3.03
158	8888.00	-8884.97
176	8888.00	-8884.97
194	8888.00	-8884.97

Note: Positive SI indicates scaling.
 Negative indicates corrosion.

VALUE =		X	Y
FROM GRAPH	3.1	1	5
	14	2	12
		3	14
		4	15

Water Analysis

Analysis #: **26276**



JACAM Chemicals, L. L. C.

205 S. Broadway
P.O. Box 96
STERLING, KS 67579

620-278-3355
Fax 620-278-2112
Web: www.jacam.com

Email: solutions@jacam.com

Company: PHILLIPS EXPLORATION
Field: PHILLIPS
Lease: AMERINE 3
Location: KINGMAN COUNTY, KS
Description:
Well:
Sample Point: BLEEDER

Date: **October 20, 2009**

Attention: JOHN MORAN

DISSOLVED SOLIDS

CATIONS	mg/l	meq/l
Sodium, Na (calc)	78,304.65	3,404.55
Calcium, Ca	12,512.00	622.49
Magnesium, Mg	1,970.42	161.51
Barium, Ba	3.00	0.04
Iron, Fe	300.00	16.13

ANIONS	mg/l	meq/l
Hydroxyl, OH		
Carbonate, CO3		
Bicarbonate, HCO3	167.75	2.75
Sulfate, SO4	50.00	1.02
Chloride, Cl	143,400.00	4,039.44
Sulfide, S	0.00	0.00

OTHER PROPERTIES

pH	6.10
Specific Gravity	1.140
Dissolved Oxygen, (mg/l)	
Dissolved Carbon Dioxide	824.00
Sulfide as H2S, (ppm)	0.00
Sample Temp:	90F. 32C.

Total Dissolved Solids (mg/l)	236,708	
Total Ionic Strength	4.5199	
Maximum CaSO4, (calc.)	76	
Maximum BaSO4, (calc.)	5	
	mg/l	meq/l
Total Hardness	39,200.00	784.00

ESTIMATED MINERAL CONTENT AT SAMPLE TEMPERATURE

	meq/l	mg/l	lbs/kbbf
CaCO3	0.00	0.00	0.00
CaSO4	1.12	76.00	27.00
BaSO4	0.05	5.00	2.00

Note:

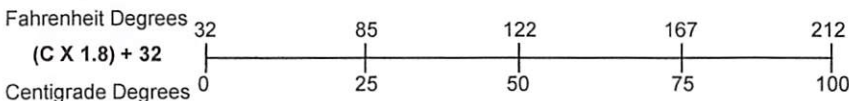
Since scale forming molecules can exist in solution, refer to the CaCO3 saturation index for CaCO3, or the solubilities for CaSO4 and BaSO4, and compare with the calculated amounts above to determine if precipitated scale may be possible.

Conclusion:

Calcium Carbonate scaling index not calculated. TIS above 4.
Calcium Sulfate scale is indicated. See appropriate chart for temperature ranges.
Barium Sulfate scale is indicated below 7 degrees Centigrade.

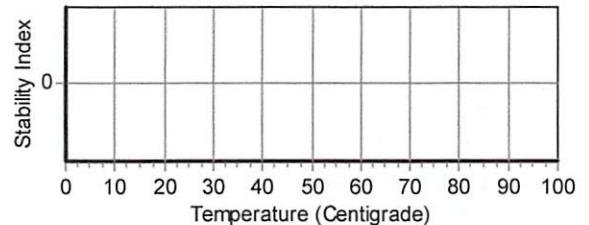
Remarks:

SAMPLE DATE 10/09/09
RECEIVE DATE 10/09/09
SAMPLE IS COLORLESS
WSI 3407 = 7 MG/L

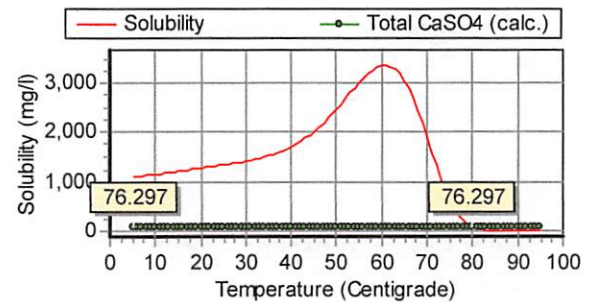


Scaling Indices vs. Temperature

Calcium Carbonate Saturation Index



Calcium Sulfate Solubility



Barium Sulfate Solubility

