

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

1093831

Form ACO-4 Form must be typed March 2009

APPLICATION FOR COMMINGLING OF Commingling ID # _ PRODUCTION (K.A.R. 82-3-123) OR FLUIDS (K.A.R. 82-3-123a)

OPERA	OR: License #	API No. 15		
Name:_		Spot Description:		
Address	1:		Sec TwpS. F	R Bast West
Address	2:		Feet from North /	South Line of Section
City:	State: Zip:+		Feet from East /	West Line of Section
Contact	Person:	County:		
Phone:	()	Lease Name:	Well #:	
1.	Name and upper and lower limit of each production interval to	be commingled:		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
2.	Estimated amount of fluid production to be commingled from e			
	Formation:		MCFPD:	
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:		MCFPD:	
	Formation:	BOPD:	MCFPD:	_ BWPD:
	Formation:	BOPD:	MCFPD:	_ BWPD:
□ 3.□ 4.	Plat map showing the location of the subject well, all other we the subject well, and for each well the names and addresses of Signed certificate showing service of the application and affide	of the lessee of record or oper	ator.	thin a 1/2 mile radius of
For Con	nmingling of PRODUCTION ONLY, include the following:			
<u> </u>	Wireline log of subject well. Previously Filed with ACO-1:	Yes No		
☐ 6.	Complete Form ACO-1 (Well Completion form) for the subject	well.		
For Con	nmingling of FLUIDS ONLY, include the following:			
7.	Well construction diagram of subject well.			
8.	Any available water chemistry data demonstrating the compat	ibility of the fluids to be comm	ingled.	
current in mingling	/IT: I am the affiant and hereby certify that to the best of my nformation, knowledge and personal belief, this request for comis true and proper and I have no information or knowledge, which istent with the information supplied in this application.	Su	bmitted Electronical	ly
KCC	C Office Use Only	Protests may be filed by any	party having a valid interest in the	application. Protests must be

Date: _

Approved By:

-	Α	В	С	D	Е	F	G	Н	1		K
1	Produced Fluids #	В	1	2	3	4	5	11	•	<u> </u>	
	Parameters	Units	Input	Input	Input	Input	Input		Click he	re	Click
3	Select the brines	Select fluid		Ī		V	Ī	Mixed brine:	to run SS	-	
4	Sample ID	by checking						Cell H28 is	to ruii oc	•	Click
5	Date	the box(es),	3/19/2012	3/4/2012	3/14/2012	1/20/2012	1/20/2012	STP calc. pH.	————		
6	Operator	Row 3	PostRock	PostRock	PostRock	PostRock	PostRock	Cells H35-38			Click
7	Well Name		Ward Feed	Ward Feed	Clinesmith	Clinesmith	Clinesmith	are used in	Goal Seek	SSP	
8	Location		#34-1	#4-1	#5-4	#1	#2	mixed brines			Click
9	Field		CBM	CBM	Bartles	Bartles	Bartles	calculations.			
10	Na ⁺	(mg/l)*	19,433.00	27,381.00	26,534.00	25689.00	24220.00	24654.20	Initial(BH)	Final(WH)	SI/SR
11	K ⁺ (if not known =0)	(mg/l)						0.00	Saturation Index	values	(Final-Initial)
	Mg ²⁺	(mg/l)	1,096.00	872.00	1,200.00	953.00	858.00	995.91		lcite	
	Ca ²⁺	(mg/l)	1,836.00	2,452.00	2,044.00	1920.00	1948.00	2040.23	-0.73	-0.60	0.13
	Sr ²⁺		1,050.00	2,432.00	2,044.00	1720.00	1740.00				0.13
	Ba ²⁺	(mg/l)						0.00	Da	rite	
.,		(mg/l)						0.00			
	Fe ²⁺	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn ²⁺	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb ²⁺	(mg/l)						0.00	Gyp	sum	
19	Cl	(mg/l)	36,299.00	48,965.00	47,874.00	45632.00	43147.00	44388.44	-3.19	-3.18	0.00
20	SO ₄ ²⁻	(mg/l)	1.00	1.00	8.00	1.00	1.00	2.40	Hemil	ıydrate	
21	F.	(mg/l)						0.00	-3.96	-3.90	0.06
	Br'	(mg/l)						0.00		ydrite	
	SiO2	(mg/l) SiO2						0.00	-3.47	-3.36	0.12
_	HCO3 Alkalinity**	(mg/l as HCO3)	190.00	234.00	259.00	268.00	254.00	241.03		estite	
	CO3 Alkalinity	(mg/l as CO3)	170.00	434.00	237,00	200.00	234.00	241.03	Cen		
	Carboxylic acids**	(mg/l)						0.00	Inor 6	Sulfide	
27	Ammonia	(mg/L) NH3						0.00	-0.16	-0.22	-0.06
_											-0.00
	Borate	(mg/L) H3BO3						0.00	Zinc	Sulfide	
	TDS (Measured)	(mg/l)	4.040	4.0=4				72781	~		
	Calc. Density (STP) CO ₂ Gas Analysis	(g/ml)	1.038 19.97	1.051 18.76	1.050 22.41	1.048 35.53	1.045	1.047	Calcium	fluoride	
	- ,	(%)		0.0292			33.79	26.16	I C.	-l	
	H ₂ S Gas Analysis*** Total H2Saq	(%)	0.0289	1.00	0.0296	0.0306	0.0151 0.50	0.0269	-0.74	rbonate -0.51	0.23
_	_	(mgH2S/l)	1.00 5.67	5.76	1.00 5.72	1.00 5.54	5.55	5.63		eeded (mg/L)	0.23
34	pH, measured (STP)	pH 0-CO2%+Alk,	5.07	5./0	5.72	5.54	5.55	5.03	Calcite	NTMP	
	Choose one option								Calcite	NIMI	
35	to calculate SI?	2-CO2%+pH	0	0	0	0	0				
36	Gas/day(thousand cf/day)	(Mcf/D)						0	0.00	0.00	
	Oil/Day	(B/D)	0	0	1	1	1	4	Barite	BHPMP	
	Water/Day	(B/D)	100	100	100	100	100	500	0.00	0.00	
	For mixed brines, enter val			mag in Calle (H	(40 H42)						
-	Initial T			`		44.0	40.0	(Enter H40-H43)		Н	
		(F)	66.0	71.0	70.0	41.0	49.0	60.0	5.69	5.60	1
	Final T	(F) (F)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (5.60 CentiPoise)	
42	Final T Initial P	(F) (F) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196	5.60 CentiPoise) 0.826	
42 43	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (1.196 Heat Capaci	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44	Final T Initial P Final P Use TP on Calcite sheet?	(F) (F) (psia) (psia) I-Yes;0-No	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959	
42 43 44 45	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44 45 46	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav.	(F) (F) (psia) (psia) I-Yes;0-No API grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor no	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eeded (mg/L)	
42 43 44 45 46 47 48	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00	
42 43 44 45 46 47 48 49 50	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG//Day Conc. Multiplier H* (Strong acid) *	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) †	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH' (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/l) (pH)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated SCations= EAnions=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= ECations= Calc TDS=	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textit{\Sigma}\$ (STP) Exhions= \$\textit{\Sigma}\$ (STD)= Inhibitor Selection	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0 Unit Converter	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 60 61 62 63	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated 2Cations= £Anions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you?	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	# 1 2 3	Inhibitor NTMP BHPMP PAA	Unit Converter From Unit C m³	49.0 25.0 25.0 25.0 (From metric Value 80 100	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor no Gypsum 0.00 Anhydrite 0.00 Value 176 3,531	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Eanions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is:	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	71.0 71.0 25.0 25.0 1 1 1 2 3 4	Inhibitor NTMP BHPMP PAA DTPMP	Unit Converter From Unit °C m³ m³ MPa	49.0 25.0 25.0 25.0 (From metric Value 80 100 1,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= ZAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor # is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit °C m³ m³ MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed,	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I) (mg/l) Input 120 1 4 1 50	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 4 5 6 6 7	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA HEDP	Unit Converter From Unit C m³ m³ MPa Bar Torr	49.0 25.0 25.0 25.0 25.0 Value 80 100 1,000 496 10,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia psia psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194 193	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68 69	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * OH* (Strong base) * Ouality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor is: % of 1st inhibitor is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 0 Unit min 1-Yes;0-No # # %	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit °C m³ m³ MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	

Saturation Index Calculations

Champion Technologies, Inc. (Based on the Tomson-Oddo Model)

Brine 1: Ward Feed Yard 34-1
Brine 2: Ward Feed Yard 4-1
Brine 3: Clinesmith 5-4
Brine 4: Clinesmith 1
Brine 5: Clinesmith 2

			Ratio			
	20%	20%	20%	20%	20	
Component (mg/L)	Brine 1	Brine 2	Brine 3	Brine 4	Brine 5	Mixed Brine
Calcium	1836	2452	2044	1920	1948	1952
Magnesium	1096	872	1200	953	858	865
Barium	0	0	0	0	0	0
Strontium	0	0	0	0	0	0
Bicarbonate	190	234	259	268	254	253
Sulfate	1	1	8	1	1	1
Chloride	36299	48965	47874	45632	43147	43206
CO ₂ in Brine	246	220	264	422	405	401
Ionic Strength	1.12	1.48	1.46	1.38	1.31	1.31
Temperature (°F)	89	89	89	89	89	89
Pressure (psia)	50	50	120	120	120	119

Saturation Index

Calcite	-1.71	-1.41	-1.48	-1.68	-1.69	-1.69
Gypsum	-3.71	-3.64	-2.82	-3.73	-3.72	-3.69
Hemihydrate	-3.70	-3.65	-2.83	-3.74	-3.71	-3.69
Anhydrite	-3.89	-3.79	-2.97	-3.89	-3.88	-3.85
Barite	N/A	N/A	N/A	N/A	N/A	N/A
Celestite	N/A	N/A	N/A	N/A	N/A	N/A

PTB

Calcite	N/A	N/A	N/A	N/A	N/A	N/A
Gypsum	N/A	N/A	N/A	N/A	N/A	N/A
Hemihydrate	N/A	N/A	N/A	N/A	N/A	N/A
Anhydrite	N/A	N/A	N/A	N/A	N/A	N/A
Barite	N/A	N/A	N/A	N/A	N/A	N/A
Celestite	N/A	N/A	N/A	N/A	N/A	N/A

CONFIDENTIAL KANSAS CORPORATION COMMISSION

OIL & GAS CONSERVATION DIVISION

CCCOOOO Form ACO-1 September 1999 Must Be Typed

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

Operator: License # 33344	API No. 15 - 133-27093-0000
	County: Neosho
Name: Quest Cherokee, LLC Address: 211 W. 14th Street City/State/Zip: Chanute, KS 66720 Purchaser: Bluestem Pipeline, LLC Operator Contact Person: Jennifer R. Ammann	
City/State/Zip: Chanute, KS 66720	1980 feet from S /(N) (circle one) Line of Section
City/State/Zip: Chanute, KS 66720 Purchaser: Bluestem Pipeline, LLC Operator Contact Person: Jennifer R. Ammann	660 feet from E (W) (circle one) Line of Section
Operator Contact Person: Jennifer R. Ammann	Footages Calculated from Nearest Outside Section Corner:
Phone: (620) 431-9500	(circle one) NE SE (NW) SW
Contractor: Name: TXD Drilling	Lease Name: Hines Farms Well #: 23-1
License: 33837	Field Name: Cherokee Basin CBM
Wellsite Geologist: Ken Recoy	Producing Formation: multiple
Designate Type of Completion:	Elevation: Ground: 890 Kelly Bushing: n/a
New Well Re-Entry Workover	Total Depth: 917 Plug Back Total Depth: 906.57
OilSIOWTemp. Abd.	Amount of Surface Pipe Set and Cemented at 22 Feet
✓ Gas ENHR SIGW	Multiple Stage Cementing Collar Used?
	If yes, show depth setFeet
Dry Other (Core, WSW, Expl., Cathodic, etc)	If Alternate II completion, cement circulated from 906.57
If Workover/Re-entry: Old Well Info as follows:	'feet depth to Surface w/ 125 sx cmt.
Operator:	sx cm.
Well Name:	Drilling Fluid Management Plan
Original Comp. Date:Original Total Depth:	(Data must be collected from the Heserve Pit)
Deepening Re-perf Conv. to Enhr./SWD	Chloride content ppm Fluid volume bbls
Plug BackPlug Back Total Depth	Dewatering method used
Commingled Docket No	Location of fluid disposal if hauled offsite:
Dual Completion Docket No	Operator Name:
Other (SWD or Enhr.?) Docket No.	Lease Name: License No.:
8/28/07 8/29/07 8/30/07	Quarter Sec TwpS. R East West
Spud Date or Recompletion Date Date Reached TD Completion Date or Recompletion Date	County: Docket No.:
	booker No.
Kansas 67202, within 120 days of the spud date, recompletion, worker	th the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, wer or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. 12 months if requested in writing and submitted with the form (see rule 82-3-
107 for confidentiality in excess of 12 months). One copy of all wireline log TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged well	s and geologist well report shall be attached with this form. ALL CEMENTING s. Submit CP-111 form with all temporarily abandoned wells.
All requirements of the statutes, rules and regulations promulgated to regulate herein are complete and correct to the best of my knowledge.	late the oil and gas industry have been fully complied with and the statements
Signature: Dennify R. Ammann	KCC Office Use ONLY
Title: New Well Development Coordinator Date: 12/19/07	Letter of Confidentiality Received
Subscribed and sworn to before me this 19th day of	If Denied, Yes Date:
20 <u>07</u>	Wireline Log Received KANSAS CORPORATION COMMISSION Geologist Report Received
Notary Public: Derra Klauman	UIC Distribution DEC 2.6 2007
Date Commission Expires: 8-4-3010 Note	PIRES 8-4-000 WICHITA, KS

Operator Name: Que	est Cherokee, LL	С	Lease	Name:	Hines Farms		Well #: 23-1	
Sec. 23 Twp. 2	8 S. R. 19	☑ East ☐ West	County	: Neosl	10			
ested, time tool oper emperature, fluid red	n and closed, flowing covery, and flow rate	and base of formations pg and shut-in pressures if gas to surface test, final geological well site	, whether sh along with fi	nut-in pr	essure reached	static level, hydr	ostatic pressur	es, bottom hole
Drill Stem Tests Take (Attach Additional		☐ Yes ☐ No		Δr	.og; Format	tion (Top), Depth	and Datum	` Sample
Samples Sent to Geo	ological Survey	Yes No		Nam See	e attached		Тор	Datum
Cores Taken Electric Log Run (Submit Copy)		☐ Yes ☐ No ☐ Yes ☐ No						
List All E. Logs Run:								
Compensated I Dual Induction Gamma Ray No	Log	n Log						
			RECORD		ew Used	_4:4		
Purpose of String	Size Hole Drilled	Report all strings set- Size Casing Set (In O.D.)	Weig Lbs.	ght	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4	8-5/8"	22		22	"A"	5	
Production	6-3/4	4-1/2	10.5		906.57	"A"	125	
,	•	-		-		·		<u> </u>
		ADDITIONA	L CEMENTIN	NG / SQ	JEEZE RECOR	D	•	
Purpose: Perforate Protect Casing Plug Back TD Plug Off Zone	Depth Top Bottom	Type of Cement	#Sacks	Used		Type and	Percent Additives	
Shots Per Foot		ON RECORD - Bridge Plu Footage of Each Interval Pe		Ţ,		acture, Shot, Cemei Amount and Kind of M		d Depth
4	796-799/745-747/7	39-741			50 0ge l 15%HCLw/ 46 b	bls 2%kcl water, 646bbls wate	1 w/ 2% KCL, Blocide, 5900	
4	589-591/532-534/4	98-501/474-478			400gal 15%HCLw/ 41 b	bls 2%kd water, 546bbls wate	r w/ 2% KCL, Biocide, 4300	739-741 # 20/40 sand 589-591/532-53
								498-501/474-47
4	392-396/379-383				300gal 15%HCLw/ 46 b	bla 2%kci water, 646bbls wate	r w/ 2% KCL. Blocide, 6700	# 20/40 sand 392-396/379-38
TUBING RECORD	Size	Set At	Packer A	t	Liner Run	Yes N	0	
Date of First, Resument waiting on pipelin		Enhr. Producing Me	ethod	Flowin	g 🕝 Pump	ing Gas L	ift Othe	er (Explain)
Estimated Production Per 24 Hours	Oil	Bbls. Gas	Mcf	Wat	er · [Bbls.	Gas-Oil Ratio	Gravity
Disposition of Gas	METHOD OF C	COMPLETION			Production Inte	rval		
Vented Sold	Used on Lease bmit ACO-18.)	Open Hole Other (Spec	ш		Dually Comp.	Commingled		
		1			. :			



211 W. 14TH STREET, CHANUTE, KS 66720 620-431-9500

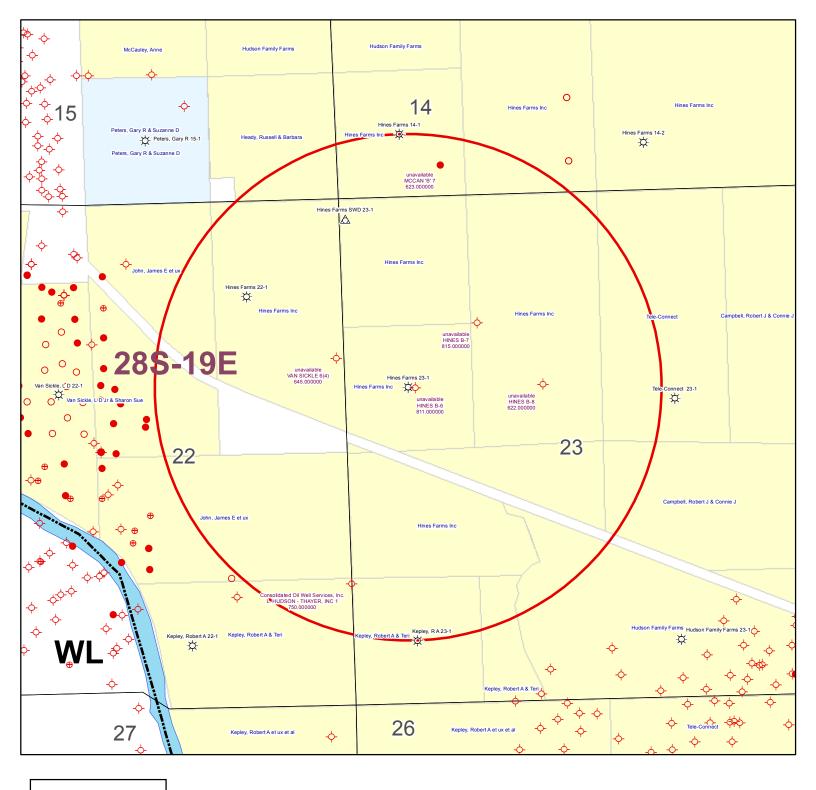
TICKET NUMBER 2383

FIELD TICKET REF # FOREMAN Joe

-623020

TREATMENT REPORT & FIELD TICKET CEMENT

V	· ·	WELLT	NAME & NUMBER	}	SECTION	TOWNSHIP	RANGE	COUNTY
DATE	11:00				23	38	19	NO
8-30-01 FOREMAN/	TIME	TIME	LESS	TRUCK	TRAILER #	TRUC	1	EMPLOYEE SIGNATURE
OPERATOR	IN_	OUT	LUNCH	#	#	7		Joe Blanche
Ju-e	10:00	1:00		903427		1		Joe Bankon
Tim .				903255		 		
Tyler	ν			903600				01111
MANGRICK		\top	V	931585	931590)		1V1/ 401
DANIEL	W.	1		931420		1 1	7	5. well 5
NOINO DEDTU OA	6.57 DOIL	PIPE	•	HOLE DEPTH9	01F	1EK		
	145 CLUB	DV VOI	•	WATER gal/sk	CEN	MENT LEFT in	CASING_	_
DISPLACEMENT)	4.45 DISPI	LACEMENT PS	SI	MIX PSI	RAT	E <u>-1pbr</u>	<u> </u>	
•				sel of 8 hbs			<u> </u>	
	,							IDENTIAL Z 0 2007
	900	2.57	f+ 4½	Cosing				
·	901	6.57 5		Cosing				
	901		Centrali	· /				
ACCOUNT	901 QUANTITY	5	Centrali	ze P5	SERVICES OR PROD	UCT		
CODE	QUANTITY	or UNITS	Centrali	zers at shae	SERVICES OR PROD	UCT		Z U 2007
903427	QUANTITY	or UNITS	Centrali H12 flo	zers at Shore DESCRIPTION OF S	SERVICES OR PROD	JUCT		Z () 2007
903427 903255	QUANTITY	5 1 or UNITS 3 hr 3 hr	Central: H12 (10)	zers at Shore DESCRIPTION OF S	SERVICES OR PROD	UCT		Z () 2007
903427	QUANTITY	or UNITS hr hr kr kr kr kr kr kr kr kr	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement	zers Of Share DESCRIPTION OF S				Z () 2007
903427 903255 903600	QUANTITY	or UNITS 3 hr 3 hr 3 hr 15 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement	ZERS OF Shore DESCRIPTION OF S ICK	os 312 H			Z () 2007
903427 903255 903600 1104	QUANTITY	or UNITS 3 hr 3 hr 3 hr 15 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC - Blend Cement	ZERS OF Shore DESCRIPTION OF S ICK				Z (J 2007 KCC
903427 903255 903600 1104	QUANTITY	or UNITS 3 hr 3 hr 3 hr 15 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC = Blend Cell Gilsonite	ZERS OF Shore DESCRIPTION OF S ICK	os 312 H			Z () 2007
903427 903427 903600 1104 1124	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK 1 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal	ZERS OF Shore DESCRIPTION OF S ICK	es 312 H	r3	DEC	Z U 2007 KCC TOTAL AMOUNT
CODE 903427 903255 903600 1104 1126 1110 1107 1118	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/56 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal Premium Gel	ZERS OF Shore DESCRIPTION OF S ICK	es 312 H	r3	DEC	Z U 2007 KCC TOTAL AMOUNT
CODE 903427 903255 903600 1104 1124 1126 1110 1107 1118 1215A	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK 1 SK 1 SK 1 SK 1 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal Premium Gel KCL	DESCRIPTION OF S Jok Gement Bally ment L1/2 W	es 312 H	r3	DEC	Z Ú 2007 KCC TOTAL AMOUNT
CODE 903427 903255 903600 1104 1124 1126 1110 1107 1118 1215A 1111B	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK 1 SK 1 SK 1 SK 1 SK 1 SK 2 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal Premium Gel KCL Sedium Silicate	DESCRIPTION OF S JOHN THE LINE WITH THE LIN	es 312 H	r3	DEC	Z Ú 2007 KCC TOTAL AMOUNT
CODE 903427 903255 903600 1104 1124 1126 1110 1107 1118 1215A	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK 1 SK 1 SK 1 SK 1 SK 2 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/56 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal Premium Gel KCL Sedium Silicate City Water	DESCRIPTION OF S Jok Gement Bally ment L1/2 W	es 312 H	RE KANSAS CORF	DEC	TOTAL AMOUNT MMISSION 07
CODE 903427 903255 903600 1104 1124 1126 1110 1107 1118 1215A 1111B	QUANTITY	5 1 or UNITS 3 hr 3 hr 15 SK 2 1 12 SK 1 SK 1 SK 1 SK 1 SK 1 SK 2 SK	Foreman Pickup Cement Pump Tru Bulk Truck Portland Cement 50/50 POZ Blend OWC - Blend Cel Gilsonite Flo-Seal Premium Gel KCL Sedium Silicate	DESCRIPTION OF S JOHN	es 312 H	RE KANSAS CORF	DEC	TOTAL AMOUNT MMISSION 07



KGS STATUS

- → DA/PA
- EOR
- **⇔** GAS
- △ INJ/SWD
- OIL
- **★** OIL/GAS
- OTHER

Hines Farms 23-1 23-28S-19E 1" = 1,000'

POSTROCK



Current Completion

WELL : Hines Farms 23-1
FIELD : Cherokee Basin

SPUD DATE: 8/28/2007 COMP. Date: 8/30/2007 API:15-133-27093-00-00

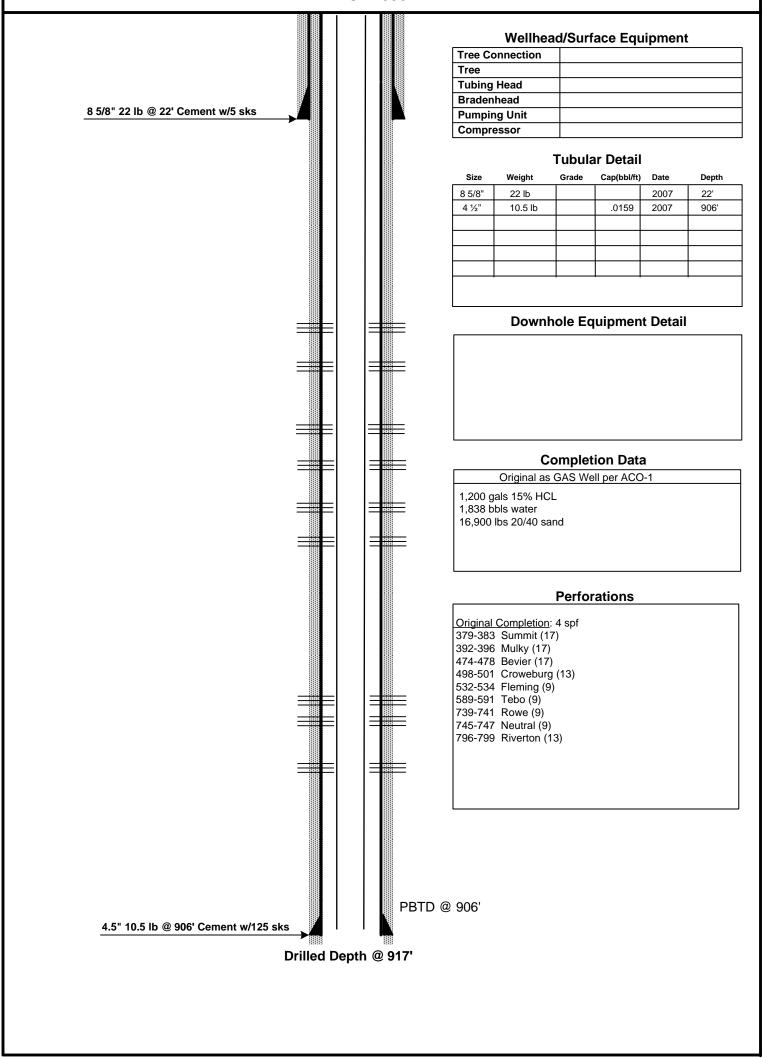
STATE: Kansas
COUNTY: Neosho

PREPARED BY: POSTROCK

APPROVED BY: _

LOCATION: 23-28S-19E (NW,SW)

ELEVATION: 890'



DATE: Sept, 2012

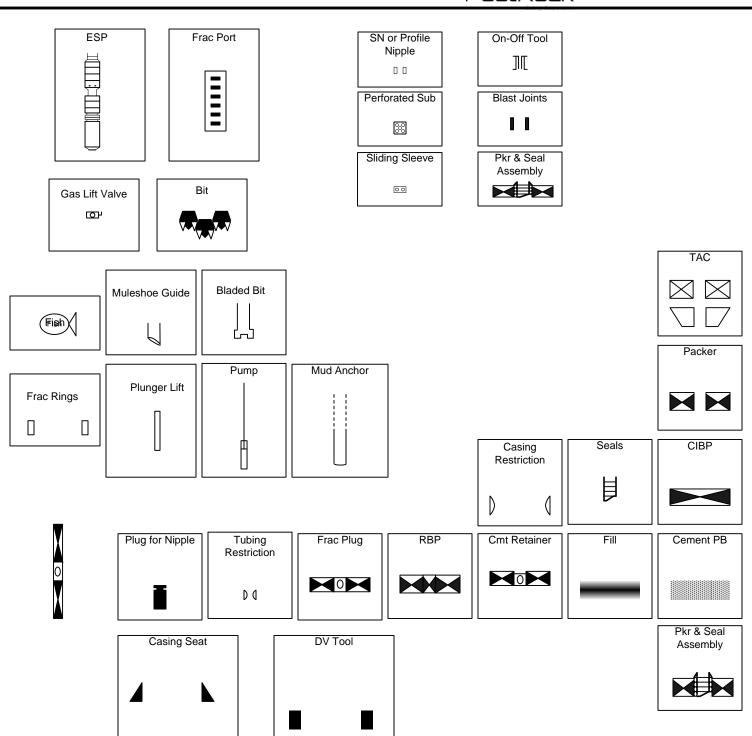
DATE:_

POSTROCK



LEGEND

PostRock[®]



FORMATION:	TEBO	(PERFS):	589 -	591			
FORMATION:	ROWE	(PERFS):	739 -	741			
FORMATION:	NEUTRAL	(PERFS):	745 -	747			
FORMATION:	RIVERTON	(PERFS):	796 -	799			
FORMATION:	CATTLEMAN	(PERFS):	566 -	570			
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):		-			
2 ESTIMATED A	MOUNT OF FLUID PRODUCTION TO BE	COMMINGLED FROM					
2 ESTIMATED A FORMATION:	TEBO	COMMINGLED FROM BOPD:	0	MCFPD:	2.5	BWPD:	19.78
2 ESTIMATED A FORMATION: FORMATION:	TEBO ROWE	COMMINGLED FROM BOPD: BOPD:		MCFPD:	2.5	BWPD:	19.78
2 ESTIMATED A FORMATION: FORMATION: FORMATION:	TEBO ROWE NEUTRAL	COMMINGLED FROM BOPD: BOPD: BOPD:	0	MCFPD:MCFPD:	2.5 2.5	BWPD: BWPD:	19.78 19.78
2 ESTIMATED A FORMATION: FORMATION:	TEBO ROWE NEUTRAL	COMMINGLED FROM BOPD: BOPD: BOPD: BOPD:	0	MCFPD: MCFPD: MCFPD: MCFPD:	2.5	BWPD: BWPD: BWPD:	19.78
2 ESTIMATED A FORMATION: FORMATION: FORMATION:	TEBO ROWE NEUTRAL RIVERTON	COMMINGLED FROM BOPD: BOPD: BOPD:	0 0 0	MCFPD:MCFPD:	2.5 2.5	BWPD: BWPD:	19.78 19.78
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2 ESTIMATED A FORMATION: FORMATION: FORMATION: FORMATION: FORMATION:	TEBO ROWE NEUTRAL RIVERTON CATTLEMAN	COMMINGLED FROM BOPD: BOPD: BOPD: BOPD: BOPD:	0 0 0 0	MCFPD: MCFPD: MCFPD: MCFPD: MCFPD:	2.5 2.5 2.5	BWPD: BWPD: BWPD:	19.78 19.78 19.78
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Δffidav	it of Notice Served	Laurence	
Re:	Application for: APPLICATION FOR COMMINGLI	NG OF PRODUCTION OR FLUIDS A	CO-4
	Well Name: HINES FARMS 23-1	Legal Location: NESWSWNW	
The unde	ersigned hereby certificates that he / she is a duly authorized age		
2012	, a true and correct copy of the application reference		
A4-4 A			
Note: A	copy of this affidavit must be served as a part of the application.	Addrona (Attach additional chapte if non	onegad
CONI	Name	Address (Attach additional sheets if nec	
CON	SOLIDATED OIL WELL SERVICE, INC	PO BOX 884, CHANUT	E, NS 00/20
SEE	ATTACHED		
	, , , , , , , , , , , , , , , , , , , ,		
I further a	ttest that notice of the filing of this application was published in th	_e THE CHANUTE TRIBUNE	, the official county publication
of NE		county. A copy of the affidavit of this publication	is attached.
	s 15TH day of OCTOBER	2012	
Signed thi	s 15TH day of OCTOBER ,	2012	
		Applicant or Duly Authorized Agent	
	Subscribed and sworn to	before methis <u>15TH</u> day of <u>OCTOB</u>	ER 2012
	MILITARY STATES	0 1 0 %	
	JENNIFER R. BEAL SEAL MY COMMISSION EXPIRES	Notary Public). ()	
	7-80-2014	My Commission Expires:	20, 2016
			,

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22-28S-19E

tract S of RR in E/2 NE/4

Judith L Moyer

17175 Irving Rd Chanute, KS 66720 our lessor in another tract

22, 23-28S-19E

AT&SF & BN&SF Railway Co.

Railroad ROW

PO Box 961089

Fort Worth, TX 76161

HINES FARMS 23-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS

	eased Mineral Owners and Landown	ners acreage	
ach additional sheets		Legal Description of Leasehold:	
E ATTACHED	Name:	Legal Description of Leasenoid.	
EATIACHED			
by certify that the st	atements made herein are true and corre	ect to the best of my knowledge and belief.	
		Des Mours	,
		Annihant and the Authorizant Annih	
		Applicant or Duly Authorized Agent	0040
	Subscribed a	and sworn before me this 15TH day of OCTOBER	2012
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OFFICIAL	JENNIFER R. BEAL MY COMMISSION EXPIRES	Notary Public)	
SEAL	7-20-2014		11/2
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LEGAL LOCATION SPOT CURR_OPERA

S22-T28S-R19E NE NE SE SE Consolidated Oil Well Services, Inc.

22-28S-19E

tract S of RR in E/2 NE/4

Judith L Moyer

17175 Irving Rd Chanute, KS 66720

22, 23-28S-19E

AT&SF & BN&SF Railway Co.

Railroad ROW

Fort Worth, TX 76161

PO Box 961089

NOTES

our lessor in another tract

BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS NOTICE OF FILING APPLICATION

RE: In the Matter of Postrock Midcontinent Production, LLC Application for Commingling of Production in the Hines Farms 23-1 located in Neosho County, Kansas.

TO: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomever concerned.

You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has filed an application to commingle the Summit, Mulky, Bevier, Croweburg, Fleming, Tebo, Rowe, Neutral, Riverton and Cattleman producing formations at the Hines Farms 23-1, located in the NE SW SW NW, S23-T28S-R19E, Approximately 1983 FNL & 659 FWL, Neosho County, Kansas.

Any persons who object to or protest this application shall be required to file their objections or protest with the Conservation Division of the State Corporation Commission of the State of Kansas within fifteen (15) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why granting the application may cause waste, violate correlative rights or pollute the natural resources of the State of Kansas.

All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly. All person and/or companies wishing to protest this application are required to file a written protest with the Conservation Division of the Kansas Oil and Gas Commission.

Upon the receipt of any protest, the Commission will convene a hearing and protestants will be expected to enter an appearance either through proper legal counsel or as individuals, appearing on their own behalf.

Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704

A COPY OF THE AFFIDAVIT OF PUBLICATION MUST ACCOM-PANY ALL APPLICATIONS

Affidavit of Publication 4

STATE OF KANSAS, NEOSHO COUNTY, ss: *Rhonda Howerter*, being first duly sworn, deposes and says: That *she* is *Classified Manager* of *THE CHANUTE TRIBUNE*, a daily newspaper printed in the State of Kansas, and published in and of general circulation in Neosho County, Kansas, with a general paid circulation on a daily basis in Neosho County, Kansas, and that said newspaper is not a trade, religious or fraternal publication.

Said newspaper is a daily published at least weekly 50 times a year: has been so published continuously and uninterruptedly in said county and state for a period of more than five years prior to the first publication of said notice; and has been admitted at the post office of Chanute, in said county as second class matter.

That the attached notice is a true copy thereof and was published in the regular and entire issue of said newspaper for \(\text{consecutive} \) \
, 2012, 2012
, 2012, 2012
Phonda Howert
Subscribed and sworn to and before me this Only 2012 Notary Public
My commission expires: January 9, 2015
Printer's Fee
Affidavit, Notary's Fee\$ 3.00
Additional Copies\$
Total Publication Fees \$ 73.74



AFFIDAVIT

STATE OF KANSAS

- SS.

County of Sedgwick

Mark Fletchall, of lawful age, being first duly sworn, deposeth and saith: That he is Record Clerk of The Wichita Eagle, a daily newspaper published in the City of Wichita, County of Sedgwick, State of Kansas, and having a general paid circulation on a daily basis in said County, which said newspaper has been continuously and uninterruptedly published in said County for more than one year prior to the first publication of the notice hereinafter mentioned, and which said newspaper has been entered as second class mail matter at the United States Post Office in Wichita, Kansas, and which said newspaper is not a trade, religious or fraternal publication and that a notice of a true copy is hereto attached was published in the regular and entire Morning issue of said The Wichita Eagle for _1_ issues, that the first publication of said notice was

made as aforesaid on the 11th of

October A.D. 2012, with

subsequent publications being made on the following dates:

And affiant further says that he has personal knowledge of the statements above set forth and that they are true.

Subscribed and sworn to before me this

11th day of October, 2012

PENNY L, CASE Notary Public-My Appt. Expires

Notary Public Sedgwick County, Kansas

Printer's Fee: \$132.40

LEGAL PUBLICATION

PUBLISHED IN THE WICHITA EAGLE
OCTOBER 11, 2012 (321)703)
BEFORE THE STATE CORPORATION
COMMISSION
OF THE STATE OF KANSAS
NOTICE OF FILING APPLICATION
RE in the Malter of Postrock Midcontinent
Production, LLC Application for
Commingling of Production in the Hines
Farms 23-1 located in Neosho County Farms 23-1 located in Neosho County,

Kansas.
TO: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomever concerned.
You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has illed an application to commingle the Summit, Mulky, Bevier, Croweburg, Flenting, Tebo, Rowe, Neutral, Riverton and Catileman producing formations at the Hines Farms 23-1, located in the NE SW SW NW, \$23-T285-R19E, Approximately 1983 FML & 659 FWL, Neesho Approximately 1983 FNL & 659 FWL, Neosho County, Kansas.

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Upon the receipt of any protest, the Commission will convene a hearing and protestants will be expected to enter an appearance either through proper legal counsel appearance eliment in tough in open tegal course or as individuals, appearing on their own behalf. Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704

Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Sam Brownback, Governor

Mark Sievers, Chairman Thomas E. Wright, Commissioner Shari Feist Albrecht, Commissioner

October 30, 2012

Clark Edwards
PostRock Midcontinent Production LLC
Oklahoma Tower
210 Park Ave, Ste 2750
Oklahoma City, OK 73102

RE: Approved Commingling CO101205

Hines Farms 23-1 Sec. 23-T28S-R19E, Neosho County

API No. 15-133-27093-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on October 16, 2012, has been reviewed and approved by the Kansas Corporation Commission (KCC) per K.A.R. 82-3-123. Notice was examined and found to be proper per K.A.R. 82-3-135a. No protest had been filed within the 15-day protest period.

Based upon the depth of the Riverton formation perforations, total oil production shall not exceed 100 BOPD and total gas production shall not exceed 50% of the absolute open flow (AOF).

File form ACO-1 upon re-completion of the well to commingle.

Commingling ID number CO101205 has been assigned to this approved application. Use this number for well completion reports (ACO-1) and other correspondence that may concern this approved commingling.

Sincerely,

Rick Hestermann Production Department