

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

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)

OPERAT	OR: License #	API No. 15		
Name:_		Spot Description: _		
Address	1:		_ Sec Twp	S. R East West
Address	2:		Feet from No	rth / South Line of Section
City:			Feet from Ea	st / West Line of Section
Contact	Person:	County:		
Phone:	()	Lease Name:	Wel	#:
_ 1.	Name and upper and lower limit of each production interval to	•		
	Formation:	(Perfs):		
	Formation:	,		
	Formation:	(Perfs):		
	Formation:	(Perfs):		
	Formation:	(Perfs):		
<u> </u>	Estimated amount of fluid production to be commingled from e	each interval:		
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:			BWPD:
□ 3.□ 4.	Plat map showing the location of the subject well, all other well 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 ope	erator.	ses within a 1/2 mile radius of
For Con	nmingling of PRODUCTION ONLY, include the following:			
5.	Wireline log of subject well. Previously Filed with ACO-1:	Yes No		
☐ 6.	Complete Form ACO-1 (Well Completion form) for the subject	_		
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 comr	mingled.	
current ir 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.	Sı	ubmitted Electron	ically
l —	Office Use Only			t in the application. Protests must be a filed wihin 15 days of publication of

Date: _

Denied Approved 15-Day Periods Ends: __

Approved By:

	Α	В	С	D	Е	F	G	Н	1	1	K
1	Produced Fluids #	Б	1	2	3	4	5	11		<u> </u>	I N
	Parameters	Units	Input	Input	Input	Input	Input		Click her	re	Click
3	Select the brines	Select fluid	7	Ī		V	Ī	Mixed brine:	to run SS	-	
4	Sample ID	by checking						Cell H28 is	10 1411 00	•	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	Ба	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	osum	
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	
	F	(mg/l)						0.00	-3.96	-3.90	0.06
	Br'	(mg/l)						0.00		ydrite	3.00
	SiO2	(mg/l) SiO2						0.00	-3.47	-3.36	0.12
_			100.00	224.00	250.00	200 00	254.00				0.12
	HCO3 Alkalinity**	(mg/l as HCO3)	190.00	234.00	259.00	268.00	254.00	241.03	Cele	estite	
	CO3 Alkalinity	(mg/l as CO3)						_			
	Carboxylic acids**	(mg/l)						0.00		Sulfide	
27	Ammonia	(mg/L) NH3						0.00	-0.16	-0.22	-0.06
28	Borate	(mg/L) H3BO3						0.00	Zinc S	Sulfide	
29	TDS (Measured)	(mg/l)						72781			
30	Calc. Density (STP)	(g/ml)	1.038	1.051	1.050	1.048	1.045	1.047	Calcium	fluoride	
31	CO ₂ Gas Analysis	(%)	19.97	18.76	22.41	35.53	33.79	26.16			
	H ₂ S Gas Analysis***	(%)	0.0289	0.0292	0.0296	0.0306	0.0151	0.0269		rbonate	
33	Total H2Saq	(mgH2S/l)	1.00	1.00	1.00	1.00	0.50	0.90	-0.74	-0.51	0.23
34	pH, measured (STP)	pН	5.67	5.76	5.72	5.54	5.55	5.63	Inhibitor ne	eeded (mg/L)	
	Chasse one ention	0-CO2%+Alk,							Calcite	NTMP	
35	Choose one option to calculate SI?		0	0	0	0					
	Gas/day(thousand cf/day)	(Mcf/D)	•		0	U		0	0.00	0.00	
	Oil/Day	(B/D)	0	0	1	1	1	4	Barite	BHPMP	1
	Water/Day	(B/D)	100	100	100	100	100	500	0.00	0.00	
39	For mixed brines, enter val	ues for temperat	tures and pressi	res in Cells (H	(40-H43)			(Enter H40-H43)		Н	
40	Initial T	iucs for tempera						(Lince 1140-1143)	р	п	
41		(F)	66.0	71.0	70.0	41.0	49.0	60.0	5.69	5.60	1
	Final T		66.0	71.0	70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (5.60 CentiPoise)	
	Final T Initial P	(F)	66.0 25.0	71.0 25.0	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	Initial P Final P	(F) (F) (psia) (psia)	66.0	71.0	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	Initial P Final P Use TP on Calcite sheet?	(F) (F) (psia) (psia) 1-Yes;0-No	66.0 25.0	71.0 25.0	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	Initial P Final P Use TP on Calcite sheet? API Oil Grav.	(F) (F) (psia) (psia) 1-Yes;0-No API grav.	66.0 25.0	71.0 25.0	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 ne	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eeded (mg/L)	
42 43 44 45 46	Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav.	(F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav.	66.0 25.0	71.0 25.0	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	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eded (mg/L) HDTMP	
42 43 44 45 46 47	Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day	(F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 25.0	71.0 25.0	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	Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day	(F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav.	66.0 25.0	71.0 25.0	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	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eded (mg/L) HDTMP	
42 43 44 45 46 47 48 49	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) (B/D)	66.0 25.0	71.0 25.0	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	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) (B/D)	66.0 25.0	71.0 25.0	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	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 25.0	71.0 25.0	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	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) (B/D) (N) (N) STP:	66.0 25.0	71.0 25.0	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	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)	66.0 25.0	71.0 25.0	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	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 25.0	71.0 25.0	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	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	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) (N) STP: (%) (mgH2S/I) (pH) (%)	66.0 25.0	71.0 25.0	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	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	(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	66.0 25.0	71.0 25.0	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	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 \$\times\$Cations=	(F) (F) (psia) (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 25.0	71.0 25.0	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	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	(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	66.0 25.0	71.0 25.0	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	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 SCations= EAnions=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./l) (equiv./l)	66.0 25.0	71.0 25.0	70.0 25.0	41.0 25.0 25.0	49.0 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	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) (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 25.0 25.0 0 0	71.0 25.0 25.0	70.0 25.0 25.0 1nhibitor NTMP	41.0 25.0 25.0 Unit Converter	49.0 25.0 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 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	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 \$\textstyle{\textstyle{2}}\text{Collections=} \$\text{\$\	(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	66.0 25.0 25.0 0 0	71.0 25.0 25.0	70.0 25.0 25.0	41.0 25.0 25.0 Unit Converter From Unit	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 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	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,S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated E\(\text{Calculated}\) Alkalinity Caclulated E\(\text{Calculated}\) E\(\tex	(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	66.0 25.0 25.0 0 0	71.0 25.0 25.0	70.0 25.0 25.0 1nhibitor NTMP	41.0 25.0 25.0 Unit Converter	49.0 25.0 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 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 60 61 62 63	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 Have ScaleSoftPitzer	(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) (equiv./I) Input 120	66.0 25.0 25.0 0 0	71.0 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 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	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 Have ScaleSoftPitzer pick inhibitor for you?	(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) (equiv./I) (mg/I) Input 120	0 0 0 0 Unit min	# 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 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 63 64 65	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 SCations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, 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) (equiv./I) (mg/I) Input 120	0 0 0 0 Unit min	# 1 2 3 4	Inhibitor NTMP BHPMP PAA DTPMP	Unit Converter From Unit °C m³ m³	49.0 25.0 25.0 25.0 (From metric Value 80 100 100	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit	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 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66	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 SCations= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed,	(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) (mg/I) Input 120 1 4	0 0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 5 5	Inhibitor NTMP BHPMP PAA DTPMP PPCA	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 55 56 57 58 59 60 61 62 63 64 65 66 67	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 Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st 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) (mg/I) Input 120 1 4	0 0 0 0 Unit min 1-Yes;0-No #	# 1 2 3 4 5 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 43 44 45 46 47 48 49 50 51 52 53 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69	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 Have ScaleSoftPitzer pick inhibitor # is: If you select Mixed, 1st inhibitor # is: % of 1st inhibitor is:	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./l) (equiv./l) (mg/l) Input 120 1 4 1 50	0 0 0 0 Unit min 1-Yes;0-No # # %	## 1 2 3 4 4 5 5 6 7 7	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA HEDP	Unit Converte 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	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	

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

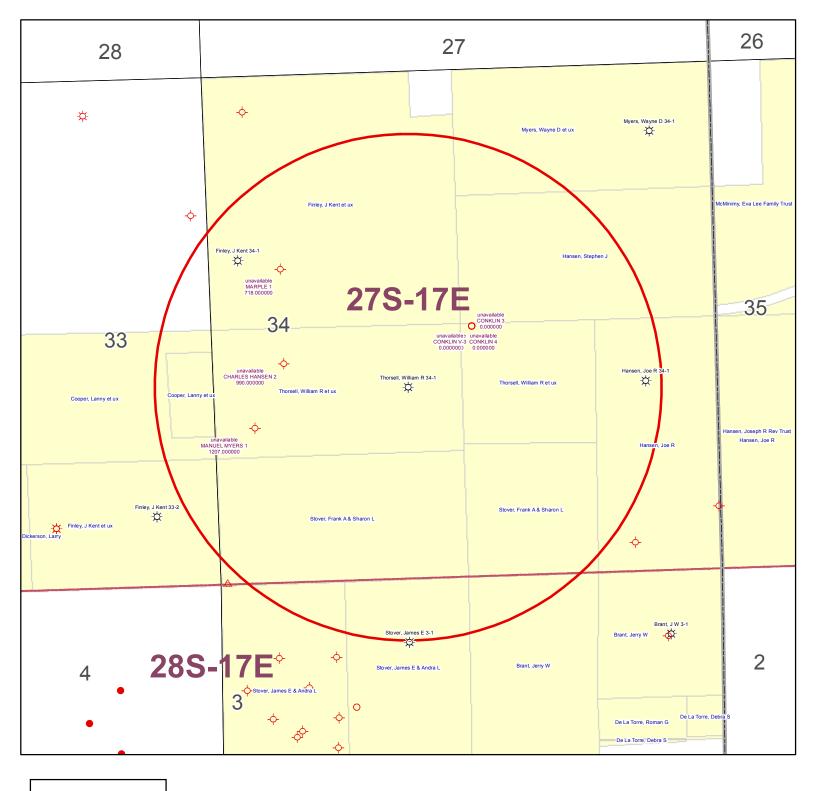
			Ratio			
	20%	20%	20%	20%	20	
Component (mg/L)	Brine 1	Brine 2	Brine 3	Brine 4	Brine 5	Mixed Brine
Calcium	1836	2452	2044	1920	1948	1952
Magnesium	1096	872	1200	953	858	865
Barium	0	0	0	0	0	0
Strontium	0	0	0	0	0	0
Bicarbonate	190	234	259	268	254	253
Sulfate	1	1	8	1	1	1
Chloride	36299	48965	47874	45632	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



KGS STATUS

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

Thorsell, William R 34-1 34-27S-17E 1" = 1,000'

Form ACO-1 September 1999 Form Must Be Typed

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

Operator: License # 33344	API No. 15 - 205-26800 - 00 - 00-
Name: Quest Cherokee, LLC	County: Wilson
Address: 211 W. 14th Street	w/2 -e/2 - ne - sw Sec. 34 Twp. 27 S. R. 17 V East West
City/State/Zip: Chanute, KS 66720	1980 feet from S / N (circle one) Line of Section
Address: 211 W. 14th Street City/State/Zip: Chanute, KS 66720 Purchaser: Bluestem Pipeline, LLC Operator Contact Person: Jennifer R. Ammann	2120 feet from E (W) (circle one) Line of Section
Operator Contact Person: Jennifer R. Ammann	Footages Calculated from Nearest Outside Section Corner:
	(circle one) NE SE NW SW
Phone: (620) 431-9500	Lease Name: Thorsell, Williams R. Well #: 34-1
License: 33783	Field Name: Cherokee Basin CBM
Wellsite Geologist: Ken Recoy	Producing Formation: Multiple
Designate Type of Completion:	Elevation: Ground: 996 Kelly Bushing: n/a
New Well Re-Entry Workover	Total Depth: 1212 Plug Back Total Depth: 1206.07
OilSWDSIOWTemp. Abd.	Amount of Surface Pipe Set and Cemented at 20 Feet
Gas ENHR SIGW	Multiple Stage Cementing Collar Used?
Dry Other (Core, WSW, Expl., Cathodic, etc)	If yes, show depth setFeet
If Workover/Re-entry: Old Well Info as follows:	If Alternate II completion, cement circulated from 1206.07
Operator:	feet depth to_surface w/_125 sx cmt.
Well Name:	AH2-DG-12/21
Original Comp. Date: Original Total Depth:	Drilling Fluid Management Plan
Deepening Re-perf Conv. to Enhr./SWD	(Data must be collected from the Reserve Pit)
· · ·	Chloride content ppm Fluid volume bbls
Plug Back Plug 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.:
7/16/06 7/17/06 7/25/06	Quarter Sec TwpS. R East West
Spud Date or Date Reached TD Completion Date or Recompletion Date	·
	County: Docket No.:
INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas 67202, within 120 days of the spud date, recompletion, workover information of side two of this form will be held confidential for a period of 12 107 for confidentiality in excess of 12 months). One copy of all wireline logs at TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells.	or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. It months if requested in writing and submitted with the form (see rule 82-3-101) months if requested in writing and submitted with this form. ALL CEMENTING
All requirements of the statutes, rules and regulations promulgated to regulat herein are complete and correct to the best of my knowledge.	e the oil and gas industry have been fully complied with and the statements
Signature: Limber L. Ammoun	KCC Office Use ONLY
Title: New Well Development Coordinator Date: 11/15/06	Letter of Confidentiality Received
Subscribed and sworn to before me this 15th day of 900embl	· · · · · · · · · · · · · · · · · · ·
Subscribed and sworn to before me this 10 day of 1000000	, Wireline Log Received
20 <u>06</u> .	Geologist Report Received
Notary Public: Duva Klayman	UIC Distribution
811 2010	
	TERRA KLAUMAN

Operator Name: Qu	est Cherokee, LL	.c	Lease Name:	Thorsell, Wil	liams R.	Well #: 34-1	g11
Sec. 34 Twp. 2	27 S. R. <u>17</u>	✓ East	County: Wilse	on			
ested, time tool ope emperature, fluid re	en and closed, flowin covery, and flow rate	and base of formations g and shut-in pressures es if gas to surface test, final geological well site	s, whether shut-in pr along with final cha	essure reached	static level, hydi	rostatic pressure	s, bottom hole
Orill Stem Tests Take		Yes _✓ No	<u>₹</u> .		ion (Top), Depth		Sample
Samples Sent to Ge	ological Survey	_ Yes ✓ No	Nan See	ne attached		Тор	Datum
Cores Taken		Yes _√ No					
Electric Log Run (Submit Copy)		✓ Yes \[☐ No					
List All E. Logs Run:	:		İ				
Compensated Dual Induction Gamma Ray (•						
			G RECORD N t-conductor, surface, in		ction, etc.		
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4	8-5/8"	20	20	"A"	4	
Production	6-3/4	4-1/2	10.5#	1206.07	"A"	125	
Purpose:	Depth		AL CEMENTING / SO	UEEZE RECOR		D A dallai	
Plug Off Zone	Top Bottom	Type of Cement	#Sacks Used		rype and	Percent Additives	
Shots Per Foot		ION RECORD - Bridge PI			acture, Shot, Ceme		i Depth
4	1113-1115	- Footage of Each Interval F	enoraleu	·	/ 250bbls water w/ 2% I		
4	928-930/841-84	3/806-809		300gal 15%HCLw	/ 650bbls water w/ 2% K	(CL, Biocide, 10000# 2	0/40 sand 928-930/841-8
							806-809
4	712-716/702-70	 06		300gal 15%HCLw	550bbls water w/ 2% K	CL, Biocide, 13000# 2	0/40 sand 712-716/702-7
TUBING RECORD 2	Size -3/8"	Set At 1101.36	Packer At n/a	Liner Run	Yes Z N	lo	
Date of First, Resume	rd Production, SWD or	Enhr. Producing M	ethod Flowi	ng 🔽 Pum	ping Gas l	_iftOthe	т (Explain)
Estimated Production Per 24 Hours	oil n/a	Bbls. Gas Omcf	Mcf Wa	_	Bbls.	Gas-Oil Ratio	Gravity
Disposition of Gas		COMPLETION		Production Inte	erval		
Vented ✓ Solo	Used on Lease	Open Hol		Dually Comp.	Commingled		



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

TICKET NUMBER 1652

FIFED TICKET REF#

FOREMAN _________

TREATMENT REPORT & FIELD TICKET CEMENT

DATE		WELL	NAME & NUMBE	R	SECTION	TOWNSHIP	HANGE	
7-25.06	Thors	اعدال	1. Mion	34-1	34	27	7:7	WE
FOREMAN / OPERATOR	TIME	TIME OUT	LESS LUNCH	TRUCK #	TRAILER #	TRUCI HOUR	s	EMPLOYEE SIGNATURE
Jaci B	7.00	1:45		903427		6.7		100 Black or
Tim. A	6:30		i	903255		7.0		the 3mg
MAUCVICK P	7:00			903206		C T	5 /	A Contract of
DAVIDE	7:00				932452	4.	75 K	SOM DIE
TROY W	7:00			903106		4.7	5	May stor
Pussell. A	7:00	V		1 extra		1 6.7	5 1	there
JOB TYPE LONGS+	ring HOLES	SIZE 2		HOLE DEPTH /2				41/2 10.5
CASING DEPTH /2 (06.07 DRILL I	PIPE		TUBING	OTH	ER		
SLUBBY WEIGHT / 4		Y VOL		WATER gal/sk	CEM	ENT LEFT in	CASING_	0
DISPLACEMENT 19	23 DISPLA	CEMENT P	SI	MIX PSI	RATE	= <u>LID</u>	۶ <u>۰</u>	
DEMARKO.								:
P: 2 200	00150	11+	s soutace	. Installe	1 Cement	head	RAN	15 K gel
7 10 1	- 1 1 Aug	4 1	25 SKS	of Cemerat	to one	A 40 - 40	500 F	Ecce. Mus
PPP	<u> </u>	<u> </u>	J. 10 11 +	top: U Sal	Float =			(miles
		Piug	70 00	700: 50				
RECEIV KANSAS CORPORATION	ON COMMISSION							
			-					
NOV 1.6	Zuub							
CONSERVATION	DIVISION			· 4!!0			1	
WICHITA	KS /200			ing 4!12				
	``	6		lizers				
931310		_		tractor				
607253		3 hr	Cosing	troclar				
ACCOUNT CODE	QUANTITY or	UNITS		DESCRIPTION OF SE	ERVICES OR PRODU	JCT		TOTAL AMOUNT
903427	\$ 4.7	5 ,	Foreman Pickup					
903255	7.24	1	Cement Pump Tru	uck				
903206		15 6	Bulk Truck		<u>.</u> <u>.</u> <u>.</u> .	,		
1104		120 <1	Portland Cement		ž. Y. // 1.	2.17		
1124)	50/50 POZ Blend	Coment B	31/2" +	<u> </u>		
1126	1		OWC - Blend Ce	ment 41/2 wife	DER Plug			
1110	T	12 51	Gilsonite					
1107		/ SK	Flo-Seal					2
1118		315K	Premium Gel					
1215A	1901	:	KGL		<u> </u>	*		341.51
1111B		2 5K	Sodium Silicate-	Calchlorid	<u>e</u>			. 7
1123	7000 a	ا لد	City Water		 			
903140	6	.75 hr	Transport Truck					
932420		.75 hr	Transport Trailer					
903106	4.	75 hr	80 Vac					(* ·
Ravin 4513		antinociale in a second	41/2	Floatshoe	·		. 1	

Michael Drilling, LLC P.O. Box 402 Iola, KS 66749 620-365-2755

71706

Company:

Quest Cherokee LLC

Address:

9520 North May Ave, Suite 300

Oklahoma City, Oklahoma 73120

Ordered By: Donnie Meyers

Date: 07/17/06

Lease:

Thorseli, William R.

County: Wilson

Well#:

34-1

API#: 15-205-26800-00-00

Drilling Log

FEET	DESCRIPTION	FEET	DESCRIPTION
0-20	Overburden	700-707	Black Shale
20-41	Wet Sand	707-714	Lime
41-134	Lime	710	Gas Test 10" at 1/2" Choke
134-170	Shale Shale	714-715	Black Shale
170-300	Lime Con As	715-716	Coal
300-308	Black Shale	716-736	Sandy Shale
308-311	Lime CEI		Making Lots Of Water
311-340	Shale Shale Shale	736-755	Sand
340-408	Lime 65 MM	755-770	Sandy Shale
408-420	Sandy Shale	770-788	Shale
420-431	Black Shale	788-789	Coal
431-459	Shale	789-840	Shale
459-480	Sandy Lime	840-843	Coal
480-574	Sandy Shale	843-860	Shale
574-580	Sand	860-885	Sand
580-612	Shale	885-895	Shaie
612-615	Lime	895-897	Coal
615-618	Coal	897-915	Shale
618-647	Lime	915-935	Sand
647-650	Black Shale	935-945	Sandy Shale
650-683	Sandy Shale	945-958	Water and Sand
683-684	Coal	958-960	Coal
684-7 0 0	Lime	960-1098	Sand
695	Gas Test 10" at 1/2" Choke	1050	To Much Water For Gas Test

Michael Drilling, LLC P.O. Box 402 Iola, KS 66749 620-365-2755

71706	
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Company:

Quest Cherokee LLC

Address:

9520 North May Ave, Suite 300

Oklahoma City, Oklahoma 73120

Ordered By: Donnie Meyers

Date: 07/17/06

Lease: Thorsell, William R.

County: wilson

Well#: 34-1

API#: 15-205-26800-00-00

Drilling Log

	<u> </u>		
FEET	DESCRIPTION	FEET	DESCRIPTION
1098-1113	Shale	:	
1113-1115	Coal		
1115-1120	Shale		
1120-1212	Missippi Lime		
1212	To Much Water For Gas Test	:	
1212	TD		
	Surface 20'		
			·
			,
	RECEIVED KANSAS CORPORATION COMMISSION		
	KANSAS CORPORATION COMMI		
	NOV 1 6 2006		
	CONSERVATION DIVISION WICHITA, KS		
	e [*] .		
	·		
			Marie III.
			· · · · · · · · · · · · · · · · · · ·

POSTROCK



Current Completion

SPUD DATE: 7-16-2006

WELL : Thorsell, William R 34-1

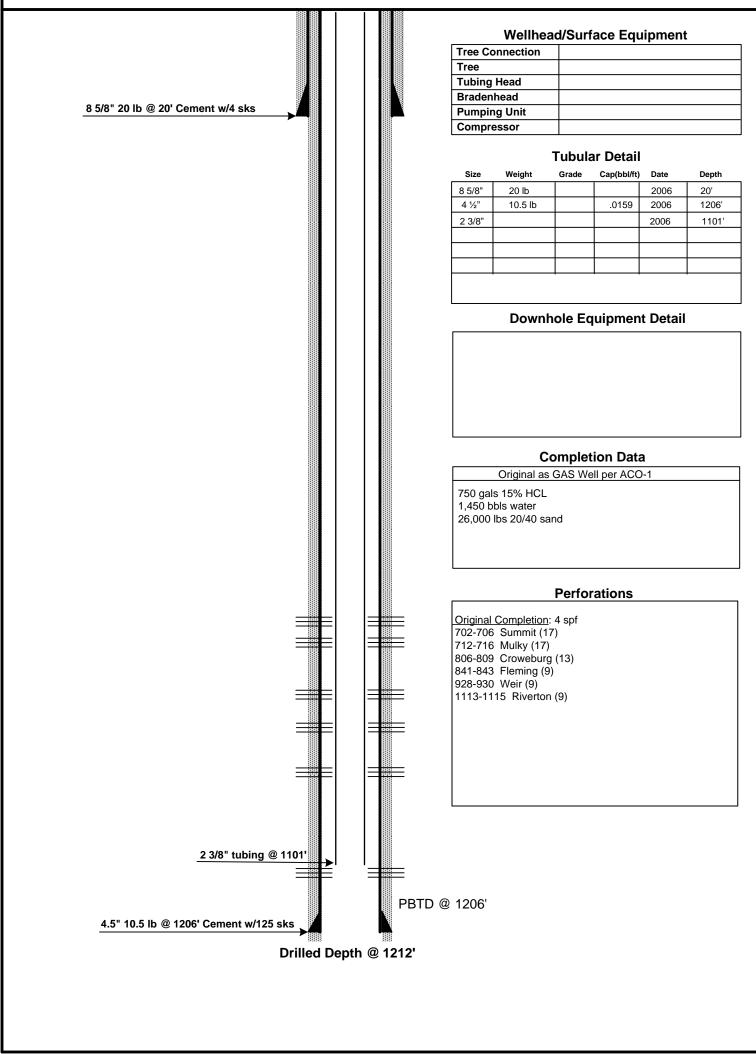
FIELD : Cherokee Basin

STATE : Kansas COUNTY : Wilson

COMP. Date: 7-25-2006 API: 15-205-26800-00-00

LOCATION: 34-27S-17E (NE,SW)

ELEVATION: 996'



PREPARED BY: POSTROCK

APPROVED BY: _

DATE: Dec, 2012

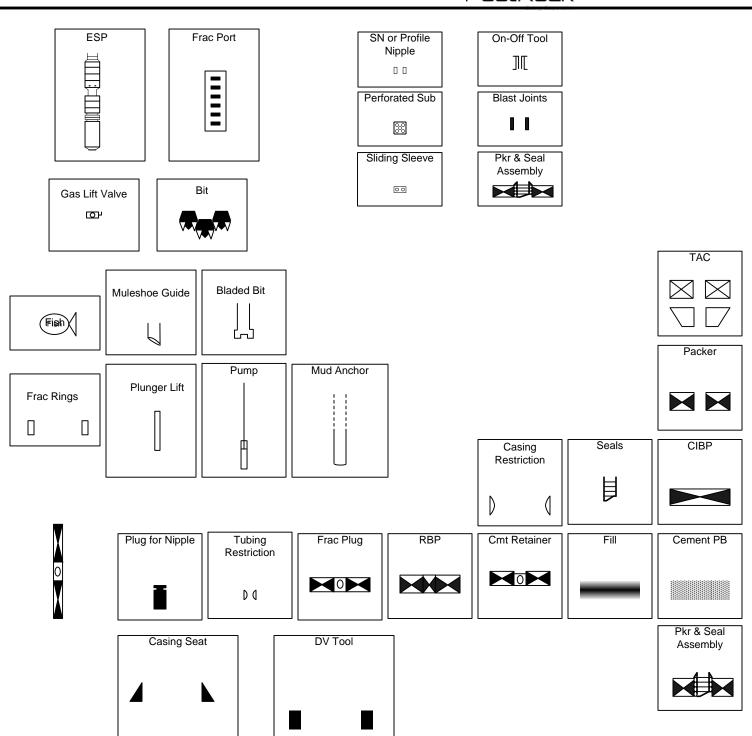
DATE:_

POSTROCK



LEGEND

PostRock[®]



THORSELL, WILLIAM R 34-1

1 NAME & UPPE						
FORMATION:	RIVERTON	(PERFS):	1113 -			
FORMATION:	BARTLESVILLE	(PERFS):	954 -	960		
FORMATION:		(PERFS):				
FORMATION:		(PERFS):				
FORMATION:		(PERFS):		·		
FORMATION:		(PERFS):				
FORMATION:		(PERFS):		·		
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FORMATION:		(PERFS):		·		
FORMATION:		(PERFS):				
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FORMATION:		(PERFS): _				
	MOUNT OF FLUID PRODUCTION TO	· · · · -	M EACH INT	ERVAL MCFPD:	2.83 0 BWPD:	5.5
2 ESTIMATED A		BE COMMINGLED FROM			2.83 0 BWPD: 0 BWPD:	5.5
2 ESTIMATED AI FORMATION:	RIVERTON	BE COMMINGLED FROM BOPD:	0	MCFPD:		
2 ESTIMATED AN FORMATION:	RIVERTON BARTLESVILLE	BE COMMINGLED FROM BOPD: BOPD:	0	MCFPD: _	0 BWPD:	
2 ESTIMATED AI FORMATION: FORMATION: FORMATION:	RIVERTON BARTLESVILLE 0	BE COMMINGLED FROM BOPD: BOPD: BOPD:	0	MCFPD: MCFPD:	0 BWPD: BWPD:	
2 ESTIMATED AI FORMATION: FORMATION: FORMATION:	RIVERTON BARTLESVILLE 0 0	BE COMMINGLED FROM BOPD: BOPD: BOPD: BOPD: BOPD:	0	MCFPD: MCFPD: MCFPD: MCFPD:	0 BWPD: BWPD: BWPD:	
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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 17th of

January A.D. 2013, 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

17th day of January, 2013

PENNY L. CASE 回回回 Notary Public -My Appt. Expires

Notary Public Sedgwick County, Kansas

Printer's Fee: \$132.40

PUBLISHED IN THE WICHITA EAGLE
JANUARY 17, 2013 (3227046)
BEFORE THE STATE CORPORATION
COMMISSION OF THE STATE OF KANSAS

NOTICE OF FILING APPLICATION
RE: In the Maller of Postrock
Midconlinent Production, LLC
Application for Commingling of
Production in the Thorsell, William R
34-1 located in Wilson County,
Keyster

Kansas.
TO: All Oll & Gas Producers, Unleased
Mineral Interest Owners,

34-1 localed in Wilson County, Kansas,
TO: All Oll & 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 filled an application to commingle the Summit, Mulky, Croweburg, Felming, Weir, Riverton and Barllesville producing formations at the Thorsell, William R 34-1, localed in the W2 E2 NE SW, S34-T275-R17E, Approximately 1992 FSL & 2098 FWL, Wilson Coulny, Kansas.
Any persons who object to or profest this application shall be required to file their objections or profest 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 profests shall be filed pursuant to Commission regulations and mulsi state specific reasons why granting the application may cause waste, vlotale 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 internselves 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 Oktahoma City, Oktahoma 73102 (405) 660-7704

PROOF OF PUBLICATION

STATE OF KANSAS Wilson County - SS

JOSEPH S. and RITA M. RELPH, of lawful age, being duly sworn upon oath that they are the Owners and Publishers of the WILSON COUNTY CITIZEN:

THAT said newspaper has been published at least weekly fifty (50) times a year and has been so published for at least five years prior to the first publication of the attached notice:

THAT said newspaper is a general circulation on a daily, or weekly, or monthly, or yearly basis in;

WILSON COUNTY, KANSAS and is NOT a trade, religious or fraternal publication and has been PRINTED and PUBLISHED in Wilson County, Kansas.

THE ATTACHED was published on the following dates in a regular issue of said newspaper:

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1st publication was made on the	2/21	day o
Janua	ry20	13
2nd publication was made on the		day of
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4th publication was made on the		_day of
5th publication was made on the		_day of
6th publication was made on the		_day of
	20-	7
TOTAL PUBLICATION FEE, \$_	377)
(Signed) Juseph Cen	le	
Subscribed and sworn to before me, this	Z 1 ′ 1	day of
January	/	3
	Motary	y Public)
My commission expires aug-	30,20	14

(Published in the Wilson County Citizen on Monday, January 21, 2013.)

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 Thorsell, William R 34-1 located in Wilson 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, Croweburg, Felming, Weir, Riverton and Bartlesville producing formations at the Thorsell, William R 34-1, located in the W2 E2 NE SW, S34-T27S-R17E, Approximately 1992 FSL & 2028 FWL, Wilson 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 (405) 660-7704 971 cpy.



Re:		INGLING OF PRODUCTION OR FLUIDS ACO-4	
	Well Name: THORSELL, WILLIAM R 34-1	Legal Location: W2E2NESW S34-T27S-R17E	
he und	ersigned hereby certificates that he / she is a duly authorize	zed agent for the applicant, and that on the day Start of FEBRUARY	<u> </u>
2013	, a true and correct copy of the application re	ferenced above was delivered or mailed to the following parties:	
lote: A	copy of this affidavit must be served as a part of the applic	eation.	
	Name Address (Attach additional sheets if necessary)		
SEE	ATTACHED		
<i>,</i>	MINORED		
		•	
		IANI OOM OOMNEY CITIZEN	
	test that notice of the filing of this application was publishe	d in the VILSON COUNTY CITIZEN , the official county publ	licatio
WIL	SON	county. A copy of the affidavit of this publication is attached.	
ed this	day of FEBRUARY		
		(11.5/	
		Applicant or Duly Authorized Agent	
	, Subscribed and sv	worn to before me this day ofFEBRUARY, 2013	3
		Dennile D. Brale	
	JENNIFER R. BEAL	Notary Public My Commission Expires: Quly 30, 2016	
	OFFICIAL MY COMMISSION EXPIRES	My Commission Expires: Quelo 30, 2016	

THORSELL, WILLIAM R 34-1

33-27S-17E

RR ROW
AT&SF Railway Co
PO Box 961089
Fort Worth, TX 76161

NE/4 less tract & less RR ROW

Joseph J & Karen Varndell & Rozella M. Giddens Family Trust & Conklin Family Rev. Trust 23707 2000 Rd Chanute, KS 66720

THORSELL, WILLIAM R 34-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS Offset Operators, Unleased Mineral Owners and Landowners acreage (Attach additional sheets if necessary) Legal Description of Leasehold: SEE ATTACHED I hereby certify that the statements made herein are true and correct to the best of my knowledge and belief. $_{ m day\ of}$ FEBRUARY 2013 Subscribed and sworn before me this _ JENNIFER R. BEAL MY COMMISSION EXPIRES My Commission Expires: _

THORSELL, WILLIAM R 34-1

33-27S-17E

RR ROW AT&SF Railway Co PO Box 961089 Fort Worth, TX 76161

NE/4 less tract & less RR ROW

Joseph J & Karen Varndell & Rozella M. Giddens Family Trust & Conklin Family Rev. Trust 23707 2000 Rd Chanute, KS 66720 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

February 25, 2013

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

RE: Approved Commingling CO021306

Thorsell, William R. 34-1, Sec. 34-T27S-R17E, Wilson County

API No. 15-205-26800-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on February 11, 2013, 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 CO021306 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