

### 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)

OPERATOR: License #	API No. 15	API No. 15				
Name:	Spot Description:	:				
Address 1:		Sec Twp	S. R			
Address 2:		Feet from N	lorth / South Line of Section			
City: State: Zip:	+	Feet from E	east / West Line of Section			
Contact Person:	County:					
Phone: ()	Lease Name:	W	ell #:			
_						
Name and upper and lower limit of each product	ŭ					
Formation:	(Perfs	):				
Formation:	(Perfs	):				
Formation:	(Perfs	):				
Formation:	(Perfs	):				
Formation:	(Perfs	):				
2. Estimated amount of fluid production to be comm	aingled from each interval:					
Formation:	-	MCEDD:	BWPD:			
Formation:			BWPD:			
Formation:			BWPD:			
		_				
Formation:			BWPD:			
Formation:	ВОРО:	MCFPD:	BWPD:			
3. Plat map showing the location of the subject well the subject well, and for each well the names and	· ·	•	ases within a 1/2 mile radius of			
4. Signed certificate showing service of the application	tion and affidavit of publication as requi	red in K.A.R. 82-3-135a.				
For Commingling of PRODUCTION ONLY, include the f	ollowing:					
5. Wireline log of subject well. Previously Filed with	n ACO-1: Yes No					
6. Complete Form ACO-1 (Well Completion form) for	or the subject well.					
For Commingling of FLUIDS ONLY, include the followin	ng:					
7. Well construction diagram of subject well.						
8. Any available water chemistry data demonstration	g the compatibility of the fluids to be co	mmingled.				
AFFIDAVIT: I am the affiant and hereby certify that to the current information, knowledge and personal belief, this required mingling is true and proper and I have no information or known is inconsistent with the information supplied in this applicate.	luest for com- vledge, which	Submitted Electro	nically			
KCC Office Use Only			est in the application. Protests must be			
☐ Denied ☐ Approved	in writing and comply with the notice of application.	h K.A.R. 82-3-135b and must	be 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		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.	<b>————</b>		
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	0.00		Click
9	Field		CBM	CBM	Bartles	Bartles	Bartles	calculations.			
10	Na <sup>+</sup>	(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 <sup>+</sup> (if not known =0)	(mg/l)						0.00	Saturation Index	values	(Final-Initial)
	Mg <sup>2+</sup>	(mg/l)	1,096.00	872.00	1,200.00	953.00	858.00	995.91		lcite	
	Ca <sup>2+</sup>	(mg/l)	1,836.00	2,452.00	2,044.00	1920.00	1948.00	2040.23	-0.73	-0.60	0.13
	Sr <sup>2+</sup>		1,050.00	2,432.00	2,044.00	1720.00	1740.00				0.13
	Ba <sup>2+</sup>	(mg/l)						0.00	Da	rite	
.,		(mg/l)						0.00			
	Fe <sup>2+</sup>	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn <sup>2+</sup>	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb <sup>2+</sup>	(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 <sub>4</sub> <sup>2-</sup>	(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 <sub>2</sub> 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 <sub>2</sub> 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/ <sup>0</sup> 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/ <sup>0</sup> 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/ <sup>0</sup> 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/ <sup>0</sup> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> S Gas Total H <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 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 <sub>2</sub> 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 ne 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 <sub>2</sub> 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 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 <sub>2</sub> S Gas Total H <sub>2</sub> Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Exhions= 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 <sub>2</sub> 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 <sup>3</sup> 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 <sub>2</sub> S Gas Total H <sub>2</sub> 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 <sub>2</sub> 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 <sup>3</sup> 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 <sub>2</sub> 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

# KANSAS CORPORATION COMMISSION OR IGINAL OIL & GAS CONSERVATION DIVISION

Form ACO-1 September 1999 Form Must Be Typed

WICHITA, KS

# WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

Operator: License # Name: Quest Cherokee, LLC         Address: 211 W. 14th Street         County: Wilson
Address: 211 W. 14th Street  City/State/Zip: Chanute, KS 66720  Purchaser: Bluestem Pipeline, LLC  Operator Contact Person: Jennifer R. Ammann  Phone: (620 ) 431-9500  Contractor: Name: TXD Services, LP  License: 33837  Wellste Geologist: Ken Recoy  Designate Type of Completion:  ✓ New Well Re-Entry Workover  — Oil SWD SIOW Temp. Abd.  ✓ Gas ENHR SIGW  Dry Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Original Comp. Date: Original Total Depth:  — Deepening Re-perf. Conv. to Enhr/SWD  Plug Back Plug Back Total Depth  — Commingled Docket No.  — Dual Completion Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?)  9/28/06  10/1/06  10/1/06  10/2/06  1060  feet from S (n)/circle ane) Line of Section  feed from E (w E from E) W (circle ane) Line of Section  feed from E (w E from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of Section  feed from E) W (circle ane) Line of S
City/State/Zip: Chanute, KS 66720  Purchaser: Bluestem Pipeline, LLC  Operator Contact Person: Jennifer R. Ammann  Phone: (620  ) 431-9500  Contractor: Name: TXD Services, LP  License: 33837  Wellsite Geologist: Ken Recoy  Designate Type of Completion:  ✓ New Well Re-Entry Workover  — Oil SWD SIOW Temp. Abd.  ✓ Gas ENHR SIGW  Dry Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Original Comp. Date: Original Total Depth:  — Deepening Re-perf. Corn. to Enhr/SWD  Plug Back Plug Back Total Depth  — Commingled Docket No.  — Dual Completion Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?)  9/28/06  10/1/06  10/1/06  10/1/06  10/2/06
Purchaser: Bluestem Pipeline, LLC  Operator Contact Person: Jennifer R. Ammann  Phone: (620
Operator Contact Person: Jennifer R. Ammann  Phone: (620
Phone: (620
Wellsite Geologist: Ken Recoy  Designate Type of Completion:  ✓ New Well Re-Entry Workover  — Oil SWD SIOW Temp. Abd.  ✓ Gas ENHR SIGW  — Dry Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Operator:  — Deepening Re-perf. Conv. to Enhr/SWD  — Plug Back Plug Back Total Depth:  — Commingled Docket No.  — Dual Completion  Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?) Docket No.  — 1048  Kelly Bushing: n/a  Total Depth: 1356 Plug Back Total Depth:  If Alternate II completion, cement circulated from 1347.32  Feet Multiple Stage Cementing Collar Used?  If Alternate II completion, cement circulated from 1347.32  feet depth to surface w/ 171 sx cmt.  Drilling Fluid Management Plan Alt I Ntt (0 60 8)  (Data must be collected from the Reserve Pit)  Chloride content ppm Fluid volume bbls  Dewatering method used  Location of fluid disposal if hauled offsite:  Operator Name:  Lease Name: License No.  — License No.
Wellsite Geologist: Ken Recoy  Designate Type of Completion:  ✓ New Well Re-Entry Workover  — Oil SWD SIOW Temp. Abd.  ✓ Gas ENHR SIGW  — Dry Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Operator:  — Deepening Re-perf. Conv. to Enhr/SWD  — Plug Back Plug Back Total Depth:  — Commingled Docket No.  — Dual Completion  Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?) Docket No.  — Other (SWD or Enhr.?) Docket No.  — 1048  Kelly Bushing: n/a  Total Depth: 1356 Plug Back Total Depth:  If Alternate II completion, cement circulated from 1347.32  Feet Multiple Stage Cementing Collar Used?  If Alternate II completion, cement circulated from 1347.32  feet depth to surface w/ 171 sx cmt.  Drilling Fluid Management Plan Alt I Ntt (0 60 8)  (Data must be collected from the Reserve Pit)  Chloride content ppm Fluid volume bbls  Dewatering method used  Location of fluid disposal if hauled offsite:  Operator Name:  Lease Name: License No.  — License No.
Wellsite Geologist: Ken Recoy         Designate Type of Completion:
Designate Type of Completion:  ✓ New WellRe-Entry Workover
✓ New Well       Re-Entry       Workover         ✓ Oil       SWD       SIOW       Temp. Abd.         ✓ Gas       ENHR       SIGW         Dry       Other (Core, WSW, Expl., Cathodic, etc)       If yes, show depth set       Feet         If Workover/Re-entry:       Old Well Info as follows:       If Alternate II completion, cement circulated from 1347.32         Operator:       Well Name:       Original Comp. Date:       Original Total Depth:       Despening       Re-perf.       Conv. to Enhr./SWD       Chloride content       ppm       Fluid volume       bbls         Dewatering method used       Dewatering method used       Location of fluid disposal if hauled offsite:         Operator Name:       Operator Name:       Lease Name:       License No.:
OilSWDSIOWTemp. Abd. OasENHRSIGW
Multiple Stage Cementing Collar Used? ☐Yes ☑No ☐ Dry ☐ Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Operator: ☐ Original Comp. Date: ☐ Original Total Depth: ☐ Deepening ☐ Re-perf. ☐ Conv. to Enhr/SWD ☐ Plug Back ☐ Plug Back ☐ Plug Back Total Depth ☐ Commingled ☐ Docket No. ☐ Other (SWD or Enhr.?) ☐ Docket No.
Dry Other (Core, WSW, Expl., Cathodic, etc)  If Workover/Re-entry: Old Well Info as follows:  Operator: Original Comp. Date: Original Total Depth: Conv. to Enhr./SWD  Plug Back Plug Back Total Depth  Commingled Docket No Other (SWD or Enhr.?)  Other (SWD or Enhr.?) Docket No Other (SWD or Enhr.?)  Docket No Other (SWD or Enhr.?)  If yes, show depth set Feet  If Alternate II completion, cement circulated from 1347.32  feet depth to _surface /171 sx cmt.  Drilling Fluid Management Plan / I/
If Alternate II completion, cement circulated from 1347.32  feet depth to surface w/ 171 sx cmt.  Well Name:  Original Comp. Date:  Deepening Re-perf.  Plug Back Plug Back Plug Back Total Depth  Commingled Docket No.  Dual Completion Other (SWD or Enhr.?)  Docket No.  9/28/06  10/1/06  If Alternate II completion, cement circulated from 1347.32  feet depth to surface w/ 171 sx cmt.  Drilling Fluid Management Plan Alt Alt Alt Order (Data must be collected from the Reserve Pit)  Chloride content ppm Fluid volume bbls Dewatering method used  Location of fluid disposal if hauled offsite:  Operator Name:  Lease Nam
Operator:
Well Name:  Original Comp. Date:  Deepening  Re-perf.  Conv. to Enhr./SWD  Plug Back  Plug Back  Plug Back Total Depth  Commingled  Docket No.  Dual Completion  Other (SWD or Enhr.?)  Docket No.  9/28/06  Docket No.  10/1/06  Docket No.  10/2/06  Drilling Fluid Management Plan Alt The New Collected from the Reserve Pit)  (Data must be collected from the Reserve Pit)  Chloride content  ppm Fluid volume  bbls  Dewatering method used  Location of fluid disposal if hauled offsite:  Operator Name:  Lease Name:  Lease Name:  License No.:
Original Comp. Date:Original Total Depth:
Deepening Re-perf. Conv. to Enhr./SWD Plug Back Plug Back Total Depth Commingled Docket No. Dual Completion Docket No. Other (SWD or Enhr.?) Docket No.  9/28/06 10/1/06 10/2/06  Conv. to Enhr./SWD Chloride content ppm Fluid volume bbls Dewatering method used Location of fluid disposal if hauled offsite:  Operator Name: Lease Name: License No.:
Plug BackPlug Back Total DepthDewatering method used
Commingled
Dual Completion Docket No Other (SWD or Enhr.?) Docket No Docket No License No.: License No.: License No.: License No.: Docket No License No.:
Other (SWD or Enhr.?)
9/28/06 10/1/06 10/2/06 Lease Name: License No.:
Recompletion Date Recompletion Date County: Docket No.:
INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 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 logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.
All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements nerein are complete and correct to the best of my knowledge.
Signature: Annifus B American KCC Office Use ONLY
Title: New Well Development Coordinator Date: 1/23/07 Letter of Confidentiality Received
Subscribed and sworn to before me this 230 day of \( \) \( \
20 57 . Wireline Log Received
Geologist Report Received Proper rep
MODELVED.
Notary Public: UIC Distribution KANSAS CORPORATION COMMISSI
MODELVED.

Operator Name: Que	est Cherokee, LL	.C	Lease	Name:	Olson, Ruby	Α.	Well #:10-1		
	<sup>28</sup> S. R. <u>16</u>			y: Wilson					
ested, time tool oper emperature, fluid red	n and closed, flowin covery, and flow rate	and base of formations g and shut-in pressure es if gas to surface test final geological well sit	es, whether sh t, along with f	hut-in pre	ssure reached	static level, hydi	rostatic pressure	es, bottom hole	
rill Stem Tests Take (Attach Additional		☐ Yes 🗸 No		<b>√</b> Lo	og Forma	tion (Top), Depth		Sample	
amples Sent to Ge	ological Survey	☐ Yes 🗸 No		Name See	e attached		Тор	Datum	
ores Taken		Yes Vo			attaonoa				
lectric Log Run (Submit Copy)		Yes No							
ist All E. Logs Run:									
Dual Induction Compensated	n Log d Density/Neu	tron Log							
		CASIN Report all strings s	NG RECORD et-conductor, su	Ne 🔲 Ne urface, inte		ction, etc.			
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Wei		Setting Depth	Type of Cement	# Sacks Used	Type and Percent	
Surface	12-1/4	8-5/8"	20		20	"A"	5		
Production	6-3/4	4-1/2	10.5		1347.32	"A"	171		
		ADDITION	IAL CEMENTI	NG / SQU	JEEZE RECOR	D			
Purpose:  Perforate Protect Casing Plug Back TD Plug Off Zone	Depth Top Bottom	Type of Cement	#Sacks	s Used		Type and	Percent Additives		
Shots Per Foot		ION RECORD - Bridge F					ent Squeeze Record  **Material Used**  Depth		
	waiting on pipel		Periorated		(/	Amount and Kind Of R	wateriai Useu)	Бери	
TUBING RECORD	Size	Set At	Packer A	<b>A</b> t	Liner Run	Yes N	lo .		
Date of First, Resumer	rd Production, SWD or	Enhr. Producing I	Method	Flowing	g Dumi	oing Gas l	Lift Othe	er (Explain)	
Estimated Production Per 24 Hours	Oil	Bbls. Gas	Mcf	Wate	or .	Bbls.	Gas-Oil Ratio	Gravity	
Disposition of Gas	METHOD OF	COMPLETION			Production Inte	erval			
Vented Sold	Used on Lease	Open Ho		f C	oually Comp.	Commingled			

TXD SERVICES LP.





## TXD SERVICES LP

RIG#	101		S. 10	T. 28	3	R. 16		To the second	Y
API#	205-26922	-0000	County:	Wils	on	F + 3	492' -	0~	** ***
	Elev:	1,048'	Location	Kans	sas		596'	0	. ^
		(E)					<b>6</b> 90'	-0	
Operator:	Quest Che	rokee, LLC					754'	- 0	,
Address:	9520 N. M	ay Ave, Suite	∋ 300				785'	0 .	
	Oklahoma	City, OK. 73	120				880'	0	, ,
Well #	10-1	-	Lease Name	e Olso	n, Ru	by A.	1,2871	1 - 1/4"	1.68
Footage Locat	tion	660	ft from the	(N)	Line	-	1,360'	3 - 1/4"	2.92
		660	ft from the	(E)	Line				
Drilling Contra	ctor:	TXD	SERVICE	S LP					
Spud Date;			Geologist:					······	
Date Complete	ed: 10/01/06	3	Total Dep	th: 1,36	30'				
·									
			MI THE	6-8-275.A	and Section				
	Surface	Production		2.2-1.1-107	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
Size Hole	12-1/4"	6-3/4"				***			
	8-5/8"						f		
Weight	24#							-	
Setting Depth	20'							<del></del>	
Type Cement	portland	]		-					
Sacks	5			_					

Formation	Тор	Btm.	Formation	Тор	Btm.	Formation	Тор	Btm.	1
top soil	Ó	33	shale	807	823		Tiup	Dilli.	4
shale	33		coal	823	830			<del> </del>	} .
lime	189		lime	830	860		<del> </del>		
shale	210		sand	860	870			-	1
ime	314		coal	870		L.			
shale	370		shale	875	954		<del> </del> -	ļ	ļ
ime	389		coal	954	960		<del> </del>	<del>                                     </del>	ł
shale	460		shale	960	982		<del></del>	<del> </del>	ł
coal	492	The second second	coal	982	984			<del> </del>	ł
ime	496		shale	984	1,012		<del></del>	<del> </del>	ł
shale	586	618	coal	1,012	1,015		+	<del> </del>	ł
ime	518		shale	1.015	1,064		<del></del>	<del></del>	<b>!</b> ·
sand/shale	524		lime	1,064	1.071	·	14000-	RECEIV	<b>E</b> D
ime	539	670	sand/ahale	1,071	1,165		- KANSAS (	ORPORATION	COMMISS
shale	670	680	sand	1,165	1,201	***************************************		AN 2 4 2	
coal	680	682	shale	1,201	1,232		*	1418 Z 4 A	hu/
hale	682	728	coal	1,232	1,234		CON	ERVATION D	
:oal	726		shale	1,234	1,238		1	WICHITA, KS	VISION
hale	730		coal	1,238	1,240		+		
me	780		shale	1,240	1,250		<del> </del> -		
oal	781		lime	1,250	1,360	<u> </u>	<del> </del>	<b></b>	
hale	782	793		1	1,000	· · · · · · · · · · · · · · · · · · ·	+		İ
oal	793	807			-		+	,	



Resource Corporation

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

### TICKET NUMBER 1841

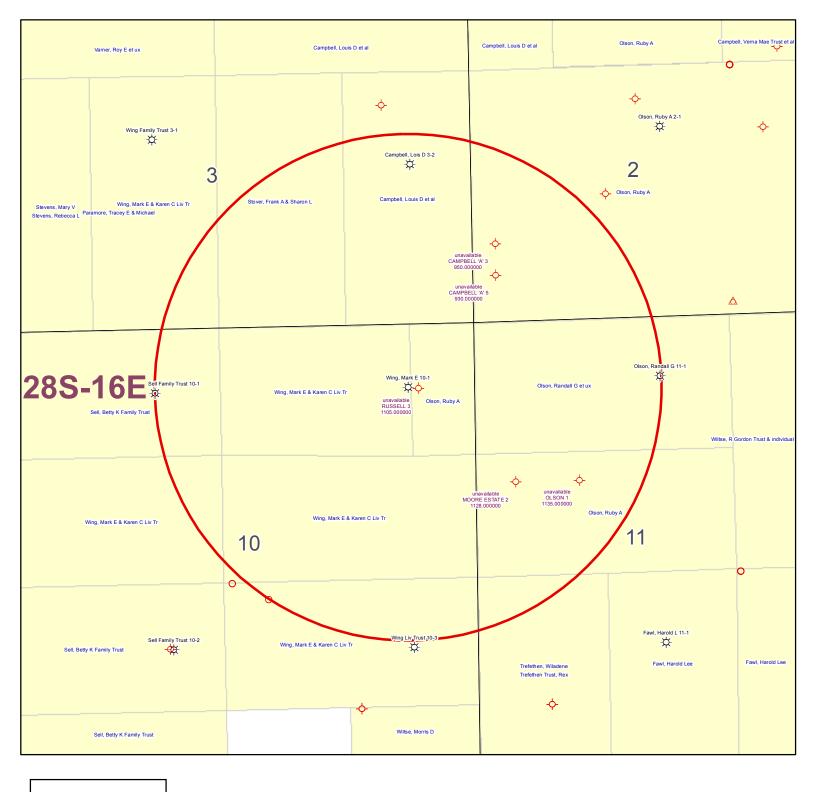
FIELD TICKET REF#

FOREMAN 500

616620

# TREATMENT REPORT & FIELD TICKET CEMENT

DATE		WEL	L NAME & NUMBER		SECTION	TOWNSHIP	RANGE	COUNTY
10-2-06	0150N	Rub	4 10-1		10	28	16	WL
FOREMAN / OPERATOR	TIME	TIME OUT	LESS LUNCH	TRUCK #	TRAILER #	TRUC HOUF	3.1	EMPLOYEE SIGNATURE
Joe. B	9:30	11:30		903427		2		a Ble ha
4305 · T	1			903197			· U	1 estrum
MARK · B	-			903230			* 7	na Mr
DAVID.C				903142	932452		\\delta\lambda	and land
Craig. 6				931500				raig I
Russell-A				1903206	<u> </u>	1	<del>//</del>	1/10
JOB TYPE <u>Louis≤</u> 1				IOLE DEPTH 13:			/EIGHT <u>分</u>	1/2 10.5
CASING DEPTH 12								
SLURRY WEIGHT 1								<u></u>
DISPLACEMENT 21	<u>. ५८</u> displa	CEMENT F	PSI M	IIX PSI	RATE	: <u>НЬ</u>	pm	
REMARKS:				•			•	<u>-</u>
Tristalted Co	ement hea	1 RAN	4 SKS go	1 4 14 1	bldye q	- 171	< K >	of cement
To got due to	Surface.	Tlush pi	imp. Pumpu	wiper plug 1	to bottom	d 5.5	Float	Shae
	<i>/</i>	200					· ·_w	
1.						manual + 5 ** - 5 **		· agsia.
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	٠.							
	1347	.32	T+ 411/2	Casing				
		7	Centrali	J				
		,	Hila Floo					
ACCOUNT CODE	QUANTITY or U	JNITS		DESCRIPTION OF SE	ERVICES OR PRODUC	СТ		TOTAL AMOUNT
9034127	)	2	Foreman Pickup			Kancac	RECE	IVED
9032305	2	h/	Cement Pump Truck	(		- E-FORE		TON COMMISSION
901974	)	hr	Bulk Truck				JAN 2	4 2007
	10	60 SK	Portland Cement			CC	WREEMAN	Non-vers
1124		1	50/50 POZ Blend Co	ement Boll	o 3''		WICHTRA	Y DIAISION
1126		ł	OWG Blend Ceme	m 211/2 10	iper plug			
1110		7 sx	Gilsonite					
1107	1.	5 sk	Flo-Seal					
1118	<u>L</u>	1 3K	Premium Gel					
1215A	لمهل		KCL				3.	<del>*</del>
1111B		3 SX	Sodium Silicate (	Calchlerid :	Q		10.5%	
1123	7000 50		City Water					
903142		2 br	Transport Truck					
932452		2 hr	Transport Trailer					
931500 F		2 hr	80 Vac		LLOUI			



### **KGS STATUS**

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

Wing, Mark E 10-1 10-28S-16E 1" = 1,000'

### **POSTROCK**



## **Current Completion**

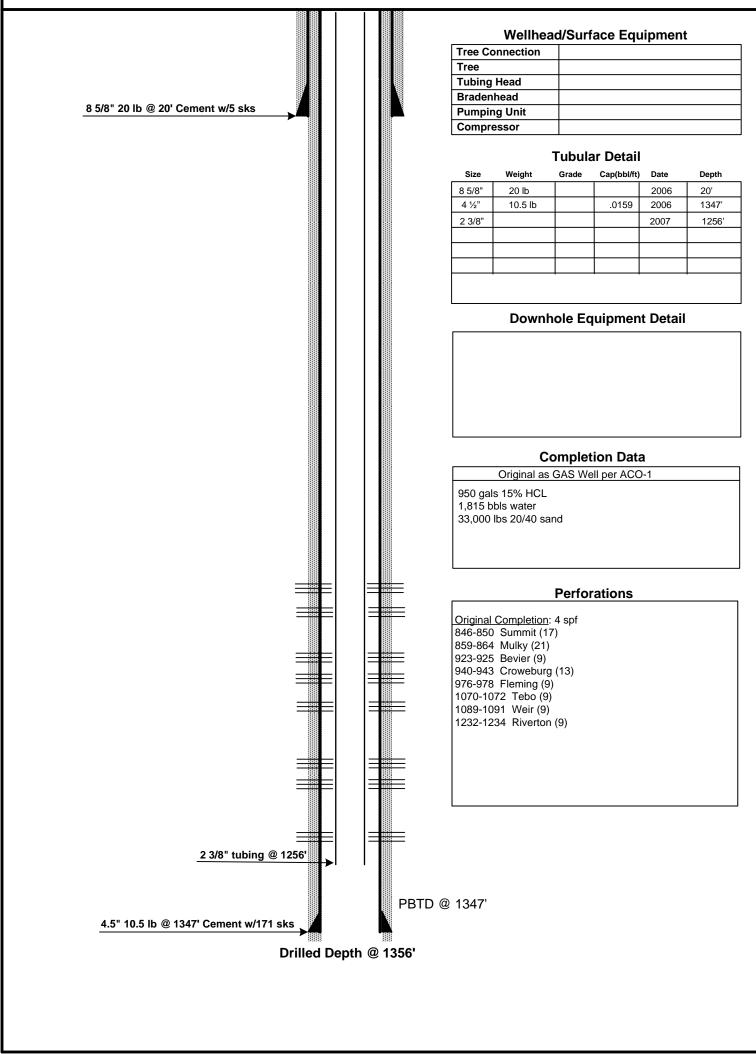
: Wing, Mark 10-1 **WELL FIELD** : Cherokee Basin

SPUD DATE: 9/28/2006 COMP. Date: 10/2/2006 API: 15-205-26922-00-00

**STATE** : Kansas COUNTY : Wilson

LOCATION: 10-28S-16E (NE,NE)

**ELEVATION: 1048'** 



PREPARED BY: POSTROCK APPROVED BY: \_

**DATE:** Sept, 2012

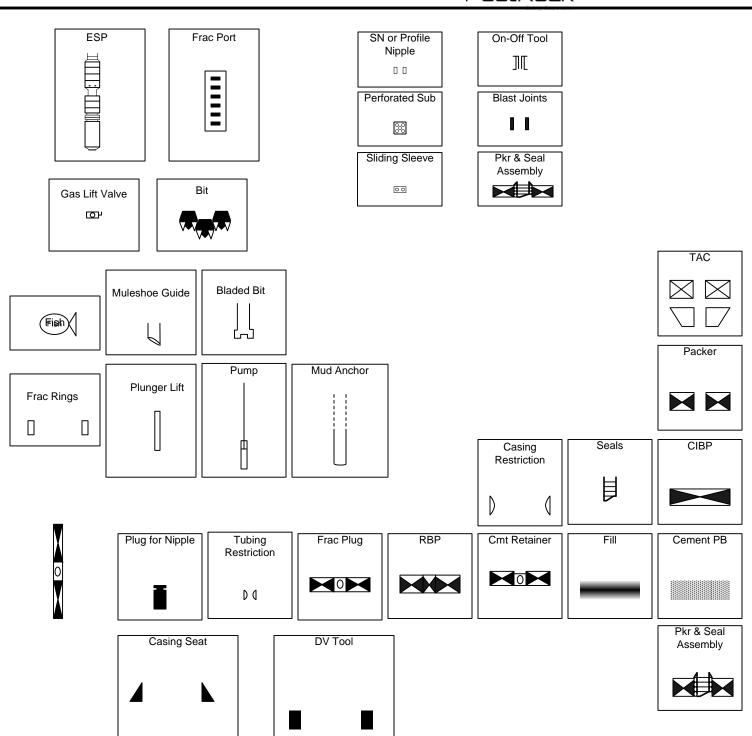
DATE:\_

# **POSTROCK**



### **LEGEND**

### PostRock<sup>®</sup>



### WING, MARK 10-1

1 NAME & UPPE	R & LOWER LIMIT OF EACH PRODU	ICTION INTERVAL TO E	BE COMMING	LED			
FORMATION:	TEBO	(PERFS):	1070 -	1072			
FORMATION:	WEIR	(PERFS):	1089 -	1091			
FORMATION:	RIVERTON	(PERFS):	1232 -	1234			
FORMATION:	BARTLESVILLE	(PERFS):	1102 -	1108			
FORMATION:	BARTLESVILLE	(PERFS):	1115 -	1119			
FORMATION:	BARTLESVILLE	(PERFS):	1138 -	1144			
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
2 FCTIMAATED AM	ACLINIT OF FLUID PRODUCTION TO			TDV/AI			
	MOUNT OF FLUID PRODUCTION TO		_		2 20	DW/DD.	0
FORMATION:	TEBO	BOPD:	0	MCFPD:	2.38	BWPD:	0
FORMATION:	WEIR	BOPD:	0	MCFPD:	2.38	BWPD:	0
FORMATION:	RIVERTON	BOPD:	0	MCFPD:	2.38	BWPD:	0
FORMATION:	BARTLESVILLE	BOPD:	1	MCFPD:	0	BWPD:	6.67
FORMATION:	BARTLESVILLE	BOPD:	1	MCFPD:	0	BWPD:	6.67
FORMATION:	BARTLESVILLE	BOPD:	1	MCFPD:	0	BWPD:	6.67
FORMATION:	0	BOPD:		MCFPD:		BWPD:	
FORMATION:	0	BOPD:		MCFPD:		BWPD:	
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FORMATION:	0	BOPD:		MCFPD:		BWPD:	
FORMATION:	0	BOPD:		MCFPD:		BWPD:	

		L	
Affidavi	it of Notice Served		
Re:	Application for: APPLICATION FOR COMMINGLE	LING OF PRODUCTION OR FLUIDS ACO-4	
	Well Name: WING, MARK 10-1	Legal Location: SENWNENE S10-T28	
The unde	ersigned hereby certificates that he / she is a duly authorized ag	gent for the applicant, and that on the day	)BER .
2012		ced above was delivered or mailed to the following parties:	
Mala: Ac	copy of this affidavit must be served as a part of the application.	-	
NOIR. A	copy of this affidavit must be served as a part of the application.  Name	n. · Address (Attach additional sheets if necessary)	
POSTI		·	M CITY OK 73102-5641
PUSH	ROCK MIDCONTINENT PRODUCTION, LLC	; 210 PARK AVENUE, SUITE 2700, ONEATION	A OH1, OK 10102-00-1
I Swithor of	" The state of the files of this application was published in	WILSON COUNTY CITIZEN	, the official county publication
of WIL	ttest that notice of the filing of this application was published in ${\sf tSON}$		
of	11	county. A copy of the affidavit of this publication is attached.	
Signed this	is 15 <sup>+2</sup> day of OCTOBER	2012	
		( ) ens / hours	/
		Applicant or Duly Authorized Agent	
æ	Subscribed and sworn	n to before me this	
4	JENNIFER R. BEAL	a. D. Bull	
	SEAL MY COMMISSION EXPIRES  7-20-2010	Notary Public Start	
<b>(</b> L	Million 1 OU CVYY II	My Commission Expires: Auly 80,0	3016

### WING, MARK 10-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS

Offset Operators, Unleased Mineral Owners and Landowners acreage (Attach additional sheets if necessary)	
	Legal Description of Leasehold:
POSTROCK MIDCONTINENT PRODUCTION, LLC	POSTROCK HAS LEASED ALL ACREAGE IN THE 1/2
	MILE RADIUS
nereby certify that the statements made herein are true and correct to the best	of my knowledge and belief
to any control and the statements made notices are and direction to best to	of my minimizege und benefit
	( ) & Morres
Appl	olicant or Duly Authorized Agent
Subscribed and sworn bet	fore me.this 15 <sup>th</sup> day of OCTOBER 2012
Substitute and swort per	
JENNIFER R. BEAL	Gennific R. Beal
7-20-2014 My C	Commission Expires: Aug 2010

#### **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.

Fletchall

Subscribed and sworn to before me this

11th day of October, 2012

PENNY L. CASE Notary Public - State of Kanse My Appt, Expires

Notary Public Sedgwick County, Kansas

Printer's Fee: \$132.40

### LEGAL PUBLICATION

PUBLISHED IN THE WICHITA EAGLE OCTOBER 11, 2012 (32)1679) BEFORE THE STATE CORPORATION COMMISSION

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 Wing,
Mark 10-1 located in Wilson County,

Kansas.
TO: All Oil & Gas Producers, Unleased Mineral.
Inherest 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, Bevier, Croweburg,
Fieming, Tebo, Weir, Riverion and Bartiesville
producing formations at the Wing, Mark 10-1,
located in the SE NW NE NE, 510-T28S-R16E,
Approximately 458 EMI & 403 EFET. Wilson. Approximately 658 FNL & 693 FEL, Wilson

Approximately 658 FNL & 693 FEL, Wilson-County, 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 filteen (15) days from the date of this publication. These profests 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.

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 tile a written protest with the Conservation Division of the Kansas Oil and

Conservation by the Adnas on the Cas Commission.

Upon the receipt of any profest, the Commission will convene a hearing and profestants, will be expected to enter an appearance either through proper legal counset. appearance enner inrough roper legal counse or as Individuals, appearing on their own behalf. Postrock Midconlinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 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:

1st publication was made on the 1646	day of
	. 20/2
2nd publication was made on the	day of
	. 20
3rd publication was made on the	day of
	. 20
4th publication was made on the	day of
	. 20
5th publication was made on the	day of
	. 20
6th publication was made on the	day of
. / .	. 20
TOTAL PUBLICATION FEE: \$	
(Signed) / Ciac I. Willistry	
Subscribed and sworn to before me, this	day of
Detaber, 2	
Pita M. Delpa	
	0,2010
	_/

(Published in the Wilson County Citizen on Monday, October 15, 2012.)

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 Wing, Mark 10-1 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, Bevier, Croweburg, Fleming, Tebo, Weir, Riverton and Bartlesville producing formations at the Wing, Mark 10-1, located in the SE NW NE NE, S10-T28S-R16E, Approximately 658 FNL & 693 FEL, 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 69 1 cpy.



PAID

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 CO101208

Wing, Mark E. 10-1, Sec. 10-T28S-R16E, Wilson County

API No. 15-205-26922-00-00

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 CO101208 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