

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

1097415

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 Nor	th / South Line of Section
City:	State: Zip: +		Feet from Eas	t / West Line of Section
Contact	Person:	County:		
Phone:	()	Lease Name:	Well :	#:
1.	Name and upper and lower limit of each production interval to	be commingled:		
	Formation:	•		
	Formation:	, ,		
	Formation:	,		
	Formation:	,		
	Formation:	` '		
2.	Estimated amount of fluid production to be commingled from e			
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	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 affida	of the lessee of record or ope	erator.	es within a 1/2 mile radius of
For Con	nmingling of PRODUCTION ONLY, include the following:			
<u> </u>	Wireline log of subject well. Previously Filed with ACO-1:	Yes No		
<u> </u>	Complete Form ACO-1 (Well Completion form) for the subject	well.		
For Con	nmingling of FLUIDS ONLY, include the following:			
7.	Well construction diagram of subject well.			
8.	Any available water chemistry data demonstrating the compati	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.	Su	ubmitted Electroni	cally
l —	C Office Use Only			n the application. Protests 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.	————		
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 ⁺	(mg/l)*	19,433.00	27,381.00	26,534.00	25689.00	24220.00	24654.20	Initial(BH)	Final(WH)	SI/SR
11	K ⁺ (if not known =0)	(mg/l)						0.00	Saturation Index	values	(Final-Initial)
	Mg ²⁺	(mg/l)	1,096.00	872.00	1,200.00	953.00	858.00	995.91		lcite	
	Ca ²⁺	(mg/l)	1,836.00	2,452.00	2,044.00	1920.00	1948.00	2040.23	-0.73	-0.60	0.13
	Sr ²⁺		1,050.00	2,432.00	2,044.00	1720.00	1740.00				0.13
	Ba ²⁺	(mg/l)						0.00	Da	rite	
.,		(mg/l)						0.00			
	Fe ²⁺	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn ²⁺	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb ²⁺	(mg/l)						0.00	Gyp	sum	
19	Cl	(mg/l)	36,299.00	48,965.00	47,874.00	45632.00	43147.00	44388.44	-3.19	-3.18	0.00
20	SO ₄ ²⁻	(mg/l)	1.00	1.00	8.00	1.00	1.00	2.40	Hemil	ıydrate	
21	F.	(mg/l)						0.00	-3.96	-3.90	0.06
	Br'	(mg/l)						0.00		ydrite	
	SiO2	(mg/l) SiO2						0.00	-3.47	-3.36	0.12
_	HCO3 Alkalinity**	(mg/l as HCO3)	190.00	234.00	259.00	268.00	254.00	241.03		estite	
	CO3 Alkalinity	(mg/l as CO3)	170.00	434.00	237,00	200.00	234.00	241.03	Cen		
_	Carboxylic acids**	(mg/l)						0.00	Inor 6	Sulfide	
27	Ammonia	(mg/L) NH3						0.00	-0.16	-0.22	-0.06
											-0.00
	Borate	(mg/L) H3BO3						0.00	Zinc	Sulfide	
	TDS (Measured)	(mg/l)	4.040	4.0=4				72781	~		
	Calc. Density (STP) CO ₂ Gas Analysis	(g/ml)	1.038 19.97	1.051 18.76	1.050 22.41	1.048 35.53	1.045	1.047	Calcium	fluoride	
	- ,	(%)		0.0292			33.79	26.16	I C.	-l	
	H ₂ S Gas Analysis*** Total H2Saq	(%)	0.0289	1.00	0.0296	0.0306	0.0151 0.50	0.0269	-0.74	rbonate -0.51	0.23
_	_	(mgH2S/l)	1.00 5.67	5.76	1.00 5.72	1.00 5.54	5.55	5.63		eeded (mg/L)	0.23
34	pH, measured (STP)	pH 0-CO2%+Alk,	5.07	5./0	5.72	5.54	5.55	5.03	Calcite	NTMP	
	Choose one option								Calcite	NIMI	
35	to calculate SI?	2-CO2%+pH	0	0	0	0	0				
36	Gas/day(thousand cf/day)	(Mcf/D)						0	0.00	0.00	
	Oil/Day	(B/D)	0	0	1	1	1	4	Barite	BHPMP	
	Water/Day	(B/D)	100	100	100	100	100	500	0.00	0.00	
	For mixed brines, enter val			mag in Calle (H	(40 H42)						
-	Initial T			` .		44.0	40.0	(Enter H40-H43)		Н	
		(F)	66.0	71.0	70.0	41.0	49.0	60.0	5.69	5.60	1
	Final T	(F) (F)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (5.60 CentiPoise)	
42	Final T Initial P	(F) (F) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196	5.60 CentiPoise) 0.826	
42 43	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (1.196 Heat Capaci	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44	Final T Initial P Final P Use TP on Calcite sheet?	(F) (F) (psia) (psia) I-Yes;0-No	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959	
42 43 44 45	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44 45 46	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav.	(F) (F) (psia) (psia) I-Yes;0-No API grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor no	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eeded (mg/L)	
42 43 44 45 46 47 48	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00	
42 43 44 45 46 47 48 49 50	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG//Day Conc. Multiplier H* (Strong acid) *	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) †	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH' (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/l) (pH)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated SCations= EAnions=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= ECations= Calc TDS=	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textit{\Sigma}\$ (STP) Exhions= \$\textit{\Sigma}\$ (STD)= Inhibitor Selection	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0 Unit Converter	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 60 61 62 63	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated 2Cations= £Anions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you?	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	# 1 2 3	Inhibitor NTMP BHPMP PAA	Unit Converter From Unit C m³	49.0 25.0 25.0 25.0 (From metric Value 80 100	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor 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 ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ 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 ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= ZAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor # is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit °C m³ m³ MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated SCations= 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 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 psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194 193	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68 69	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * OH* (Strong base) * Ouality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor is: % of 1st inhibitor is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 0 Unit min 1-Yes;0-No # # %	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit °C m³ m³ MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	

Saturation Index Calculations

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

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

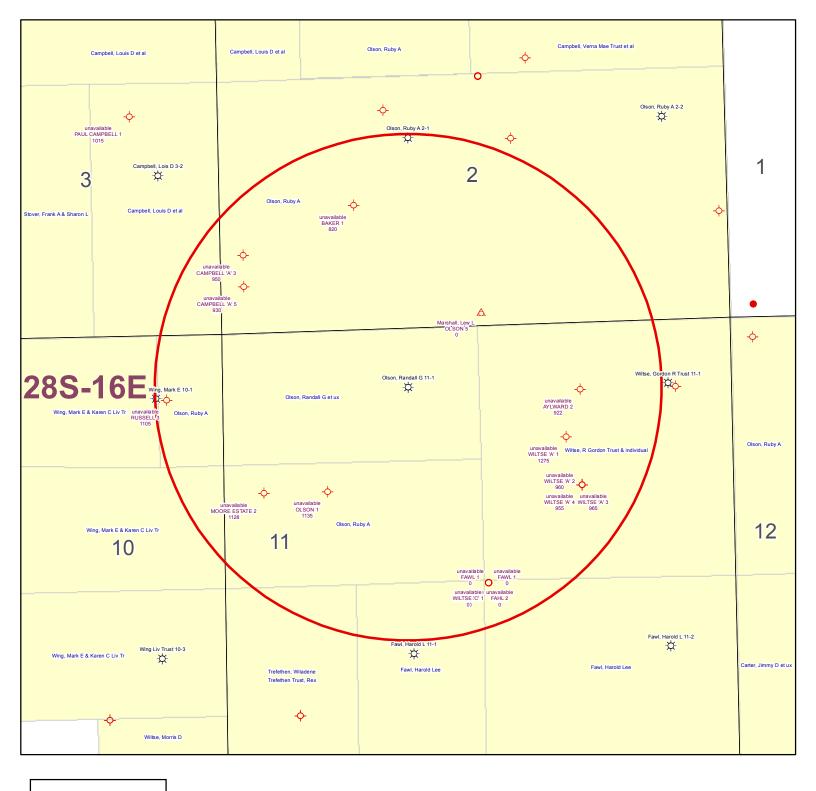
			Ratio			
	20%	20%	20%	20%	20	
Component (mg/L)	Brine 1	Brine 2	Brine 3	Brine 4	Brine 5	Mixed Brine
Calcium	1836	2452	2044	1920	1948	1952
Magnesium	1096	872	1200	953	858	865
Barium	0	0	0	0	0	0
Strontium	0	0	0	0	0	0
Bicarbonate	190	234	259	268	254	253
Sulfate	1	1	8	1	1	1
Chloride	36299	48965	47874	45632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

Saturation Index

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

PTB

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



KGS STATUS

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

Olson, Randall G 11-1 11-28S-16E 1" = 1,000'

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

ORIGINAL September 1999

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

Operator: License # 33344	API No. 15 - 205-26593 - 60 - 60
Name: Quest Cherokee, LLC	County: Wilson
Address: 211 W. 14th Street	ne_nw_Sec. 11 Twp. 28 S. R. 16 7 East West
City/State/Zip: Chanute, KS 66720	660 feet from S (N)(circle one) Line of Section
Purchaser: Bluestem Pipeline, LLC	1980 feet from E / (circle one) Line of Section
Operator Contact Person: Jennifer R. Ammann	Footages Calculated from Nearest Outside Section Corner:
Phone: (620) 431-9500	(circle one) NE SE NW SW
Contractor: Name: MOKAT	Lease Name: Olson, Randall G. Well #: 11-1
License: 5831	Field Name: Cherokee Basin CBM
Wellsite Geologist: Ken Recoy	Producing Formation: Multiple
Designate Type of Completion:	Elevation: Ground: 1055 Kelly Bushing: n/a
New Well Re-Entry Workover	Total Depth: 1300 Plug Back Total Depth: 1288
Oil SWD SIOWTemp. Abd.	Amount of Surface Pipe Set and Cemented at 20' 5" Feet
Gas ENHR SIGW	Multiple Stage Cementing Collar Used? ☐Yes ☑No
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 1288
Operator:	feet depth to surface w/ 150 sx cmt.
Well Name:	000 T 1/0 2/-1/
Original Comp. Date: Original Total Depth:	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit) (Data must be collected from the Reserve Pit)
Deepening Re-perf Conv. to Enhr/SWD	Chloride content ppm Fluid volume bbls
Plug BackPlug Back Total Depth	Dewatering method used
	Donatoning mounds about
Commingled Docket No	A control of the Property of the Late of the
Commingled Docket No Dual Completion Docket No	Location of fluid disposal if hauled offsite:
-	Operator Name:
Dual Completion Docket No Other (SWD or Enhr.?) Docket No	Operator Name: SEP 2 7 2000
Dual Completion	Operator Name: Lease Name: Lease Name: License Sec. Li
Dual Completion	Operator Name: Lease Name: Lease Name: License Sec. Li
Dual Completion	Operator Name: SEP 2 7 2000
Dual Completion	Operator Name: Lease Name: License R.: 2 7 2006 Cuarter Sec. Twp. Conservation Division Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS
Dual Completion Docket No. Other (SWD or Enhr.?) Docket No. 5/30/06 6/6/06 6/29/06 Spud Date or Recompletion Date Date Reached TD Recompletion Date or Recompletion Date INSTRUCTIONS: An original and two copies of this form shall be filed with Kansas 67202, within 120 days of the spud date, recompletion, workow Information of side two of this form will be held confidential for a period of 107 for confidentiality in excess of 12 months). One copy of all wireline logs TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells	Operator Name: Lease Name: License R.: 2 7 2006 Cuarter Sec. Twp. Conservation Division Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS License R.: 2 7 2006 East West County: Docket No.: Wichita, KS
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		•	,	E 1#0				VC Space (60 to 1
Operator Name: Qui					Olson, Rand	fall G.	Well #: <u>11-</u>	1
Sec. 11 Twp. 2	8. R. 16	🗸 East 🗌 West	County	/: Wilso	<u> </u>			
tested, time tool oper temperature, fluid red	n and closed, flowing covery, and flow rate	and base of formations g and shut-in pressures is if gas to surface test, final geological well site	, whether shalong with f	nut-in pre	essure reache	d static level, hydr	ostatic pressur	es, bottom hole
Drill Stem Tests Take		Yes V No		 ✓L	og Forma	tion (Top), Depth		Sample
Samples Sent to Geo	ological Survey	Yes No		Nam See	e attached		Тор	Datum
Cores Taken		☐ Yes 🗸 No						
Electric Log Run (Submit Copy)		✓ Yes No						٩
List All E. Logs Run:								
Dual Induction Compensated Gamma Ray N	Density/Neutro		G RECORD		we Used			1
	Size Hole	Report all strings set			 		# Sacks	Time and Barrent
Purpose of String	Drilled	Size Casing Set (In O.D.)	Wei		Setting Depth	Type of Cement	Used	Type and Percent Additives
Surface	12-1/4	8-5/8"	20		20' 5"	"A"	4	
Production	6-3/4	4-1/2	10.5#		1288	"A"	150	
		ADDITIONA	L CEMENTII	NG / SQL	JEEZE RECOF	RD	i	
Purpose: Perforate Protect Casing	Depth Top Bottom	Type of Cement	#Sacks	Used		Type and	Percent Additives	
Plug Back TD :	V							
Flug On Zone	in the state of the state o						1 1 1	
Shots Per Foot		ION RECORD - Bridge Plu Footage of Each Interval Po				racture, Shot, Cemer Amount and Kind of M		d Depth
4	1226-1228				200gal 15%HCl.w/80	bbis 2%kci water, 326bbis wate	r w/ 2% KCL, Blookle, 1800	# 30/70 sand 1226-1228
	<u> </u>						1	
4	1062-1064/974-	976/939-942/921-92	23		400gai 15%HCLw/ 31	bbis 2%kci water, 585bbis water	w/ 2% KCL, Blocide, 1400	of 30/70 sand 1062-1064/974-97
								939-942/921-92
4	857-861/843-84	7			300gal 15%HCLw/ 30	bbis 2%kci water, 575bbis water	w/ 2% KCL, Blockle, 1320	# 30/70 sand 857-861/843-84
TUBING RECORD 2-	Size 3/8"	Set At 1250	Packer A n/a	At	Liner Run	Yes N)	
Date of First, Resumer	d Production, SWD or E	Enhr. Producing Mo	ethod [Flowin	g 🔲 Pum	ping Gas L	ift Oth	ər (Explain)
Estimated Production Per 24 Hours	Oil	Bbls. Gas	Mcf	Wat	er	Bbls.	Gas-Oil Ratio	Gravity
Disposition of Gas	METHOD OF (COMPLETION			Production Int	erval	4	
Vented Sold	Used on Lease	Open Hole		. 🔲	Dually Comp.	Commingled .		

QUEST Resource Cerporation



211 W. 14TH STREET, CHANUTE, KS 66720 620-431-9500 TICKET NUMBER 1608

FIELD TICKET REF # _____

RANGE

COUNTY

FOREMAN 500/cvoin

SECTION TOWNSHIP

TREATMENT REPORT & FIELD TICKET CEMENT

WELL NAME & NUMBER

6.29.06	OISON	RAN	4011	11-1	11:	28	16	Wh
FOREMAN /	TIME	TIME	LESS	TRUCK	TRAILER:	TRUCI		EMPLOYEE SIGNATURE
OPERATOR	6:20	0UT	LUNCH	#	#	5.5		a Remichand
- C.C. G. G	6:30	9:30		9031/27		3_	7	ne I Con
wes. T	7:00	12:00		902197		5		les Jago
MAURVICK .	3 L:45	12:00		903206		5.2	5	MARION
DAVID C	7:00	12:00		903 140	932452	5	_ / <u>/</u>	1000/ Saray
TROY Whet	6:30	12:00	,	903106		5.	5	' By whom
TRUY WOOL	7:00	12:00		1 extia	Lasy	5		May he
JOB TYPE Lowast		SIZE <u>63</u> /	4	HOLE DEPTH	CASII	NG SIZE & W	EIGHT _	11/2 10.5
CASING DEPTH 12				TUBING	OTHE	:R	<u> </u>	<u> </u>
SLURRY WEIGHT	11.5_ SLURA	Y VOL		WATER gal/sk		ENT LEFT in		<u> </u>
DISPLACEMENT 20	DISPLA	ACEMENT PS	SI	MIX PSI	RÁTE	- 46p	<u>~</u>	
REMARKS.				an,				
- RAN 2 SKK	gel sw	ept to	<u>surfore</u>	. Installed	Crmeryt how	ic RAN	25K	5 981
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Puma wines	a Dive +	a bot	rom of:	sed Floats	Nr.			
.,								
. Driller<	, T. D.	INCO	rreit k	04 12 FT	Actual	T.D.	123	8
			H1/2 ~	sold on colla	v			
	1294	548						
	1200	6	Central	izers				
931310	6	2 hr	Casina	tractor				
607240	6	3 /1	Casing	trailor				
ACCOUNT CODE	QUANTITY or	UNITS		DESCRIPTION OF SE	ERVICES OR PRODU	СТ		TOTAL AMOUNT
903427	5. 5	hr	Foreman Pickup					
903197			Cement Pump Tro	uck				
903206	5. 24		Bulk Truck			R	SCEIVE	
1104	ر آر	10 5K	Portland Cement			vansas core	ORATION	COMMISSION
1124			50/50 POZ Blend			SFF	272	TOC TOCK
1126	1		OWC - Blend Ce	ment HI12 Wij	per plus	CONTRACT	2/2	JUD
1110	·	15 SK	Gilsonite	····		CONSERV WIO	ATION DIV	ISION
1107		5 5K	Flo-Seal			AAIC	HITA, KS	
1118		4 SK	Premium Gel			-		
1215A	lact-	2 //	Sodium Silicate	.001-11 ***	-			
1111B	7000	3 51	City Water	colchloria	<u> </u>			
902 140	<u>7000 ga</u>	5 hc	Transport Truck					
932452		5 hv	Transport Trailer			<u></u>		:-
703106	5.5		80 Vac					
Ravin 4513		1		11. + < 1 = 0				
The state of the s		1	~\'/ 2 .'	Floatshop			.	



DATE: 6-7-06

Mailberry Coal 0 melidaty @ FT. * Broke pipe off in hole at \$50 ft. Lesington Shake and Coal 0 melidaty @ \$55.858 FT. Multy Shake & Coal 0 melidaty @ FT. * Multy Shake & Coal 0 melidaty @ FT. * Multy Shake & Coal 0 melidaty @ FT. * Persignis Limestone 0 melidaty @ 917-1919 FT. * Persignis Limestone 0 melidaty @ 917-1919 FT. * Persignis Coal 0 melidaty @ 917-1919 FT. * Persignis Coal 0 melidaty @ 917-1919 FT. * Broke down at 1055 ft. for several days. Weir Coal 0 melidaty @ FT. * Broke down at 1055 ft. for several days. Weir Coal 0 melidaty @ FT. * Water. Poor samples Romer Coal 0 melidaty @ FT. * Ti-cone. Nestra Coal 0 melidaty @ FT. * Nestra Coal				Data from Driller's Log			1 11 02	iversal	
MELL 1 IVV	WELL NAME: Olson, Randall G	SECTION:		lii :	REPORT #		SPUD DATE:	5/30/2006	
CONTROL Contro			8 2 3		1				
ACTIVITY DESCRIPTION: We have a proper of the property of the			A		1	7,500			
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NCTIVITY DESCRIPTION. WE this error, Face Maken, ghilled to TD 1500 ft. on 66006. CAS SHOWS: Gas Measured O medicity @ TT * Brow pipe off in Note at 550 ft. Actingtic Shake and Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Transmitted to the Coal 0 medicity @ TT * Wester Proc samples to the Coal 0 medicity @ TT * Wester Proc samples to the Coal 0 medicity @ TT * Transmitted to the	a contra trade contra subs		4.4					<u> </u>	
ACTIVITY DESCRIPTION. PW Universal, Pase Makers, delibed to TD 1300 A on 66606. CAS SHOWS: Gas Measured 0 micking G FT.* Broke pipe of in hole at 550 ft. Excising Shake AC cal 0 micking G FT.* Investigate Shake AC cal 0 micking G FT.* Investigate Shake AC cal 0 micking G FT.* Investigate Lambare on Micking G FT.* Investigate Cold. Investigate Lambare on Micking G FT.* Investigate Cold.	· · · · · · · · · · · · · · · · · · ·	_		15-205-26593-00-00		1980			LINE
PW Universal, Pace Makers, defilled to TD 1300 ft. on 66006. CAS SHOWS: Cas Measured O midday @ FT.* Broke pipe of in hole at 550 ft. Exclusioned Shake AC cast O midday @ FT.* Shake AC cast O midday @ FT.* Midday Shake AC cast O midday @ FT.* Broke down at 1055 ft. for several days. Marker Coast O midday @ FT.* Midday G. FT.* Too much water to kake gas tests. Too much water to kake gas tests. Difference Cast G. Ft. Ft. Too much water to kake gas tests. Midday G. FT.* Midday G. FT.* Midday G. FT.* Too much water to kake gas tests. Difference Cast G. Ft. Ft. Too much water to kake gas tests. Promation Tops and Casting Recommendation made without benefit of vening open hash by first. Midday G. FT.* Midday G. FT.* Midday G. FT.* Too much water to k			<i>*</i>					NE NW	
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Matherry, Caal 0 moditory @ FT. * Broke pipe off in hole at 550 ft. Laterapter Shake a Coal 0 moditory @ FT. * Interest Shake Coal 0 moditory @ FT. * Interest Coal 0 moditory @ FT. * Intere									
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Maility Shale & Coal 0 melding @ 917-19-77. Vertective Load 0 melding @ 917-19-77. Vertectify to Limitestone 0 melding @ 917-19-77. Vertectify to Limitestone 0 melding @ 917-90-17. Vertectify Coal & Shale 0 melding @ 957-940-17. Wair Coal 0 melding @ 966-968-17. Wair Coal 0 melding @ FT. * Broke down at 1055 ft. for several days. Naretestile Shand 0 melding @ FT. * The come. Vertect Coal 0 melding @ FT. * The coal of the coal				855-858		***************************************			
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Convening Coal & Shale	•••••			717-919					
Plenning Casal 0 mc/day @ 966-968 FT. Broke down at 1055 ft. for saveral days. Well Coal 0 mc/day @ FT. * Broke down at 1055 ft. for saveral days. Remer Coal 0 mc/day @ FT. * Tri-cone. Wenter Coal 0 mc/day @ FT. * River Coal 0 mc/day @ FT. * Root mc/da									••••••
Weir Coal									
Bartleville Sand 0 mcliday @ FT. * Water. Poor samples Korre Coal 0 mcliday @ FT. * Th-cone. Kertrat Coal 0 mcliday @ FT. * Kirceton Coal 0 mcliday @ FT. * Kirceton Coal 0 mcliday @ FT. * Kirceton Coal 0 mcliday @ FT. * Mississippi 0 mcliday @ FT. * Mississippi 0 mcliday @ FT. * Moster Poor Samples Stess. The 1300 ft. 0 mcliday @ FT. * Moster Poor Samples Stess. Do the place of the sample stess. Moster Poor Samples Stess. Moster Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Norface Casing @ 20' 5" Norface Casing @ 20' 5" Norface Casing Size: 8 5/8" DOTHER COMMENTIS: Information in this report was taken directly from the Driller's hand written Notes. All depths and orifice checks reflect what the driller recorded during drilling activities. Below Zone Spi only. Sirny Shale / Coal 432-433 Sirny Shale / Coal 432-433 Sirny Shale / Coal 432-433 Sirny Shale / Coal 432-435 Sirny Shale / Coal 495-896 Mindrard Coal 975-976 Scammon Coal 984-985 Tebo Coal 1019-1020 ASSING RECOMMENDATIONS: Run casing / Cement to surface.									
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Neutral Coal 0 melitory © FT. * Neutral Coal 0 melitory © FT. * Neutral Coal 0 melitory © Top at 1245 FT. Too much water to take gas tests. TD: 1300 ft. 0 melitory © Top at 1245 FT. Too much water to take gas tests. TD: 1300 ft. 0 melitory © Both pits completely full. Note: * Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: Water coming into the hole from zones drilled affects Drilling and Gas Tests, and those Wells may require a hooster to reach target TD. 1 should also be noted that in these Wells the water can "kill" the Gas, causing the appearance of much lower Gas Tests in deeper Zones. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Surface Casing © 20' 5" Surface Casing Size: 8 5/8" DITHER COMMENTS: Information in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the driller recorded during drilling activities. Below Zones fyr only. Sirry Shale / Coal 422-433 Sirry Shale / Coal 530-632 Powego List Pink 771-789 Sirry Shale / Coal 858-896 Hingral Coal 975-976 Scammon Coal 984-895 Tebo Coal 1019-1020 ZASING RECOMMENDATIONS: Run casing / Cement to surface	Bartlesville Sand	0	mcf/day @		FT. *	Water. Poor sai	mples		
Riverton Coal O mcfiday @ FT.* Too much water to take gas tests. TD: 1300 ft. 0 mcfiday @ Top at 1245 FT. Too much water to take gas tests. TD: 1300 ft. 0 mcfiday @ Both pits completely full. Note: * Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: Water coming into the hole from zones drilled affects Drilling and Gas Tests, and those Wells may require a booster to reach target TD. It should also be noted that in these Wells the water can "kill" the Gas, causing the appearance of much lower Gas Tests in deeper Zones. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Surface Casing @ 20 5" Surface Casing Size: 8 588" DTHER COMMENTS: Information in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the driller recorded during drilling activities. Below Zones fpi only. Stray Shale / Coal 432-433 Stray Shale / Coal 536-52 Pawene LS / Pink 771-89 Stray Shale / Coal 935-836 Micral Coal 975-976 Sciemton Coal 975-976 Sciemton Coal 975-976 Sciemton Coal 1019-1020 TASING RECOMMENDATIONS: Run casing / Cement to surface	Rowe Coal	00	mcf/day @		FT. *	Tri-cone.			
Mississippi 0 mcl/day @ Top at 1245 FT. Too much water to take gas tests. TD: 1300 ft. 0 mcl/day @ Both pits completely full. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: Water coming into the hole from zones drilled affects Drilling and Cas Tests, and these Wells may require a booster to reach target TD. It is should also be noted that in these Wells the water can "kill" the Gas, causing the appearance of much lower Gas Tests in deeper Zones. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Surface Casing @ 20' 5" Surface Casing Size: 8 58" DTHER COMMENTS: Information in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the striller recorded during drilling activities. Relow Zones fyi only. Sury Shale / Coal 432-433 Sury Shale / Coal 630-632 Pennec LS / Pink 771-789 Pennec LS / Pin	Neutral Coal	0	mcf/day @		FT. *				
Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: Water coming into the hole from zones drilled affects Drilling and Cas Tests, and these Wells may require a booster to reach targed TD. It should also be noted that in these Wells the water can "kill" the Cas, causing the appearance of much lower Gas Tests in deeper Zones. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Surface Casing @ 20' 5" Surface Casing Size: 8 5/8" DTHER COMMENTS: afformation in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the driller recorded during drilling activities. Below Zones fyi only. Sirray Shale / Coal 432-433 Sirray Shale / Coal 630-632 **Navnee LS / Pink 771-789 Sirray Shale / Coal 835-836 Douge Limitation 836-855 Sirry Shale / Coal 985-896 **Mineral Coal 975-796 Scammon Coal 984-985 Tebe Coal 1019-1020 **CASING RECOMMENDATIONS: Run casing / Cement to surface	Riverton Coal	0	mcf/day @		FT. *				
TD: 1300 ft. 0 mcl/day @ Both pits completely full. Note: "Asterisk denotes Zone not identifiable from Driller's handwritten Notes. Note: Water coming into the hole from zones drilled affects Drilling and Cas Tests, and these Wells may require a booster to reach targed TD. It should also be noted that in these Wells the water can "kill" the Cas, causing the appearance of much lower Gas Tests in deeper Zones. Formation Tops and Casing Recommendation made without benefit of viewing open-hole logs first. Surface Casing @ 20' 5" Surface Casing Size: 8 5/8" DTHER COMMENTS: Information in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the driving drilling activities. Below Zones fyi only. Stray Shale / Coal 432-433 Stray Shale / Coal 433-433 Stray Shale / Coal 503-632 Perwee LS / Pink 771-789 Stray Shale / Coal 835-836 Dowogo Limestone 836-855 Stray Shale / Coal 984-885 Stray Shale / Coal 975-776 Scammon Coal 984-985 Tebe Coal 1019-1020 CASING RECOMMENDATIONS: Run casing / Cement to surface		0				Too much wate	r to take gas tes	ts.	
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Information in this report was taken directly from the Drillers hand written notes. All depths and orifice checks reflect what the driller recorded during drilling activities. Below Zones fyi only. Stray Shale / Coal 432-433 Stray Shale / Coal 630-632 Pawnec LS / Pink 771-789 Stray Shale / Coal 835-836 Dewego Limestone 836-855 Stray Shale / Coal 895-896 Mineral Coal 975-976 Seammon Coal 984-985 Tebo Coal 1019-1020 CASING RECOMMENDATIONS: Run casing / Cement to surface	Surface Casing @ 20' 5"	·							
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Stray Shale / Coal 432-433	Surface Casing Size: 8 5/8"				-	-			
Stray Shale / Coal 630-632 Pawnec LS / Pink 771-789 Stray Shale / Coal 835-836 Dswego Limestone 836-855 Stray Shale / Coal 895-896 Mineral Coal 975-976 Scammon Coal 984-985 Tebo Coal 1019-1020 CASING RECOMMENDATIONS: Run casing / Cement to surface	Surface Casing Size: 8 5/8" OTHER COMMENTS: Information in this report was taken dire		nd written note	s. All depths and orifice (hecks reflect what	the			
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Stray Shale / Coal 895-896	Surface Casing Size: 8 5/8" OTHER COMMENTS: Information in this report was taken diredriller recorded during drilling activities. Stray Shale / Coal	Below Zones fyi only.	nd written note	s. All depths and orifice (becks reflect what	the			
Stray Shale / Coal 895-896	Surface Casing Size: 8 5/8" OTHER COMMENTS: Information in this report was taken diredriller recorded during drilling activities. Stray Shale / Coal Stray Shale / Coal	432-433 630-632	ad written note	s. All depths and orifice o	becks reflect what	the			
Stray Shale / Coal 895-896 Mineral Coal 975-976 Scammon Coal 984-985 Febo Coal 1019-1020 CASING RECOMMENDATIONS: Run casing / Cement to surface	Surface Casing Size: 8 5/8" OTHER COMMENTS: Information in this report was taken diredriller recorded during drilling activities. Stray Shale / Coal Bray Shale / Coal	432-433 630-632 771-789	nd written note	s. All depths and orifice (hecks reflect what	the			
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CASING RECOMMENDATIONS: Run casing / Cement to surface	Surface Casing Size: 8 5/8" DTHER COMMENTS: Information in this report was taken dired driller recorded during drilling activities. Stray Shale / Coal Pawnee LS / Pink Stray Shale / Coal Dowego Limestone Stray Shale / Coal	432-433 630-632 771-789 835-836 836-855 895-896	ad written note	s. All depths and orifice o	hecks reflect what	the			
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	DITHER COMMENTS: Information in this report was taken dire driller recorded during drilling activities. Stray Shale / Coal Pawnee L.S / Pink Stray Shale / Coal Devego Limestone Stray Shale / Coal Devego Limestone Stray Shale / Coal Devego Limestone Stray Shale / Coal Stray Shale / Coal	432-433 630-632 771-789 835-836 836-855 895-896 975-976	ad written note	s. All depths and orifice o	becks reflect what	the			
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	Surface Casing Size: 8 5/8" DTHER COMMENTS: Information in this report was taken dire driller recorded during drilling activities. Stray Shale / Coal Pawnee LS / Pink Stray Shale / Coal Oswego Limestone Stray Shale / Coal Mineral Coal Seammon Coal	432-433 630-632 771-789 835-836 836-855 895-896 975-976	ad written note	s. All depths and orifice s	becks reflect what	the			
n Site Representative: Ken Recoy, Senior Geologist, CPG #4630 Cell: (620) 305-9203 krecov@arco.net	Surface Casing Size: 8 5/8" OTHER COMMENTS: Information in this report was taken dire	432-433 630-632 771-789 835-836 836-855 895-896 975-976	ad written note	s. All depths and orifice of	becks reflect what	the			
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RECEIVED KANSAS CORPORATION COMMISSION

POSTROCK



Current Completion

WELL : Olson, Randall G 11-1

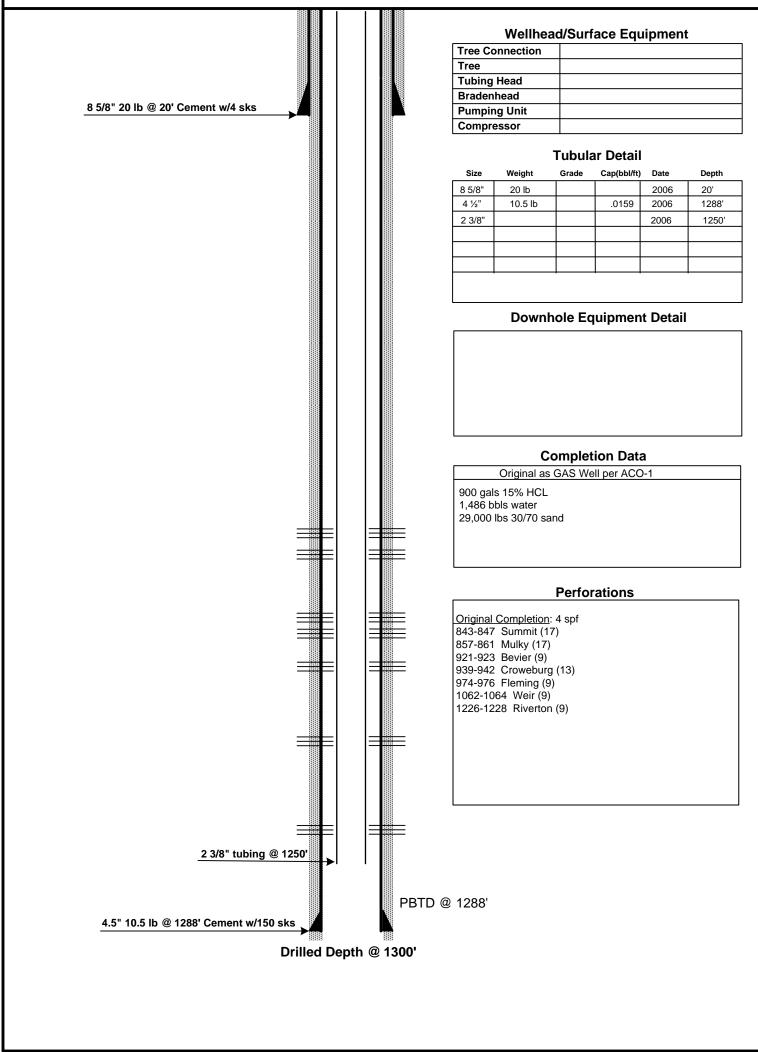
FIELD : Cherokee Basin

STATE : Kansas COUNTY : Wilson

SPUD DATE: 5/30/2006 COMP. Date: 6/29/2006 API: 15-205-26593-00-00

LOCATION: 11-28S-16E (NE,NW)

ELEVATION: 1055'



PREPARED BY: POSTROCK

APPROVED BY: _

DATE: Oct, 2012

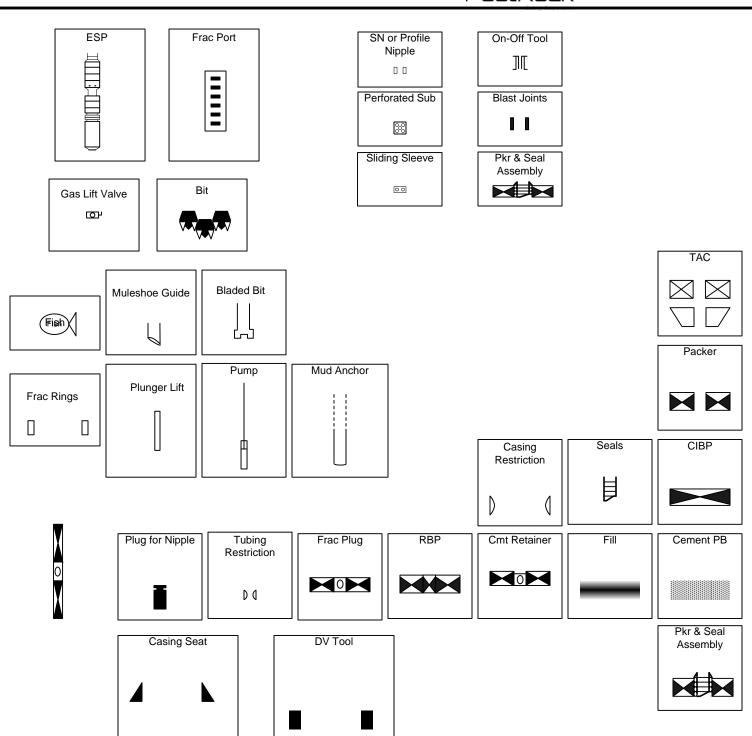
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POSTROCK



LEGEND

PostRock[®]



OLSON, RANDALL G 11-1

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FORMATION:	RIVERTON		(PERFS):	1226 -	1228			
FORMATION:	BARTLESVILLE		(PERFS):	1092 -	1098			
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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 27th of

October A.D. 2012, with

subsequent publications being made on the following dates:

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

Subscribed and sworn to before me this

29th day of October, 2012

PENNY L. CASE

PENNY L. CASE

State of Kansas

My Appt. Expires

Notary Public Sedgwick County, Kansas

Printer's Fee: \$139.60

LEGAL PUBLICATION

Published in The Wichita Eagle October 27, 2012 (3214838) BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS

OF THE STATE OF KANSAY

NOTICE OF FILING APPLICATION

RE: In the Matter of Postrock Middonlinent

Production, LLC Application for
Commingling of Production in the Olson,
Randall G 11-1 located in Wilson County,
Kansas.

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

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, Weir, Riverton and Bartlesville producing formations of the Olson, Randall 6 11-1, located in the SE NW NE NW, S11-T28S-R16E, Approximately 617 FNL, 1932 EWI. Wilson County, Kansas.

\$11-7285-R16E. Approximately 617 FNL& 1934 FWL, Wilson County, Kansas.
Any persons who oblect 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 granling the application may cause waste, violate correlative rights or poliute the natural resources of the State of Kansas.

must state specific reasons why graining the application may cause waste, vlolate 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 profest this application are required to file a written profest with the Conservation Division of the Kansas Oil and Gas Commission.

Upon the receipt of any profest, the

Upon the receipt of any profest, 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

Affidav	it of Notice Served		
Re:	Application for: APPLICATION FOR COMMING	LING OF PRODUCTION OR FLUIDS ACO-4	<u>.</u>
	Well Name: OLSON, RANDALL G 11-1	Legal Location: SENWNENW S11-T28S-R1	16E
The unde	ersigned hereby certificates that he / she is a duly authorized a		
2012		ced above was delivered or mailed to the following parties:	
Note: A	copy of this affidavit must be served as a part of the application		
	Name	Address (Attach additional sheets if necessary)	
LEVV	L MARSHALL	314 E 1ST, PO BOX 306, EUREKA	A, KS 67045
		•	
		·	
	·		
I further a	ttest that notice of the filing of this application was published in	the THE WILSON COUNTY CITIZEN , the of	ficial county publication
of WIL	SON	county. A copy of the affidavit of this publication is attached.	
Signed thi	s 30th day of OCTOBER,	2012	
oigned till	day of 90.00 are,		
		Applicant or Duly Authorized Agent	
	Subscribed and sworr	are or the	
	JENNIFER R. BEAL MY COMMISSION EXPIRES	Notary Pupilic S. Beal	
	7-20-2010	My Commission Expires: Quely 20, 20/	6
		0.0	3 **
			Į.

OLSON, RANDALL G 11-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS

Offset Operators, Unleased Mineral Owners and Landowne (Attach additional sheets if necessary)		
Name: SEE ATTACHED	Legal Descrip	tion of Leasehold:
OLE ATTACHED		

	•	
		•
l hereby certify that the statements made herein are true and correc	ot to the best of my knowledge and belief.	
	21101	
	CUEL	
	Applicant or Duly Authorized Agent	
Subscribed a	nd sworn before me this day of OCTOBEF	
JENNIFER R. BEAL	Notary Public R. K. My Commission Expires: My Commission Expires:	Sen ()
OFFICIAL MY COMMISSION EXPIRES	Notary Publig	
7-20-2014	My Commission Expires:	. 20, 2010
		7.1

OLSON, RANDALL G 11-1

LEGAL LOCATION SPOT

CURR_OPERA

S2-T28S-R16E

SE SE SE SW Marshall, Lew L.

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	1940 day of been 2012
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
5th publication was made on the	day of
	. 20
6th publication was made on the	day of
TOTAL PUBLICATION FEE: \$	37.73
(Signed) Justph S. Kelst	
Subscribed and sworn to before me, this	oth day of
· October	,20/2
	, Motary Public)
· · · · · · · · · · · · · · · · · · ·	D 2014

(Published in the Wilson County Citizen: on Monday, October 29, 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 Olson, Randall G 11-1 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, Weir, Riverton and Bartlesville producing formations at the Olson, Randall G 11-1, located in the SE NW NE NW, S11-T28S-R16E, Approximately 617 FNL & 1934 FWL, Wilson County, Kansas.

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

Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704 73 1 cp



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

November 14, 2012

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

RE: Approved Commingling CO111205

Olson, Randall G. 11-1, Sec. 11-T28S-R16E, Wilson County

API No. 15-205-26593-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on November 8, 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 CO111205 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