

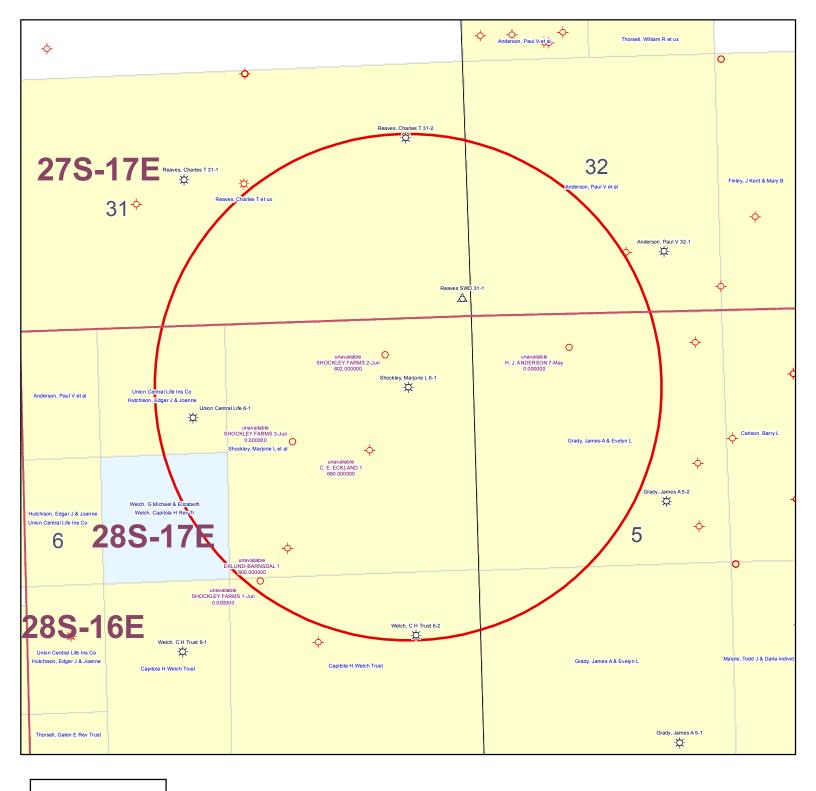
#### KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

Form ACO-4 Form must be typed March 2009

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

OPERAT	OR: License #	API No. 15					
Name:_		Spot Desc	ription:				
Address	1:		:	Sec Twp S. R.	East West		
Address	2:			Feet from North /	South Line of Section		
City:	+ State: Zip:+			Feet from East / _	West Line of Section		
Contact F	Person:	County: _					
Phone:	()	Lease Na	me:	Well #:			
1.	Name and upper and lower limit of each production interval to be com	nmingled:					
	Formation:		(Perfs):				
	Formation:		(Perfs):				
	Formation:		(Perfs):				
	Formation:		(Perfs):				
	Formation:		(Perfs):				
2.	Estimated amount of fluid production to be commingled from each int	erval:					
	Formation:	BOPD: _		MCFPD:	BWPD:		
	Formation:	BOPD: _		MCFPD:	BWPD:		
	Formation:	BOPD: _		MCFPD:	BWPD:		
	Formation:	BOPD: _		MCFPD:	BWPD:		
	Formation:	BOPD: _		MCFPD:	BWPD:		
☐ 3.	Plat map showing the location of the subject well, all other wells on the subject well, and for each well the names and addresses of the le	•	•	<u> </u>	in a 1/2 mile radius of		
4.	Signed certificate showing service of the application and affidavit of p	ublication a	s required ir	n K.A.R. 82-3-135a.			
For Com	nmingling of PRODUCTION ONLY, include the following:						
<u> </u>	Wireline log of subject well. Previously Filed with ACO-1: Yes	No					
6.	Complete Form ACO-1 (Well Completion form) for the subject well.						
For Com	nmingling of FLUIDS ONLY, include the following:						
<b>7.</b>	Well construction diagram of subject well.						
8.	Any available water chemistry data demonstrating the compatibility of	f the fluids to	be commir	ngled.			
current in mingling i	IT: I am the affiant and hereby certify that to the best of my formation, knowledge and personal belief, this request for comistrue and proper and I have no information or knowledge, which stent with the information supplied in this application.		Sub	mitted Electronically	,		

**KCC Office Use Only** Denied Approved 15-Day Periods Ends: \_\_ Approved By: Date: \_ Protests may be filed by any party having a valid interest in the application. Protests must be in writing and comply with K.A.R. 82-3-135b and must be filed wihin 15 days of publication of the notice of application.



## **KGS STATUS**

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

Shockley, Marjorie L 6-1 6-28S-17E 1" = 1,000'

-	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}}\$ Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Eanions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is:	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	71.0 71.0 25.0 25.0 1 1 1 2 3 4	Inhibitor NTMP BHPMP PAA DTPMP	Unit Converter From Unit °C m³ m³ MPa	49.0 25.0 25.0 25.0 (From metric Value 80 100 1,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia	5.69 Viscosity ( 1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00  Value 176 3,531 629 145,074	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H <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

ORIGINAL

# KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

Form ACO-1 September 1999 Form Must Be Typed

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

Operator: License # 33344	API No. 15 - 205-25725-0000
Name: Quest Cherokee, LLC	County: Wilson
Address: P O Box 100	C _NE _NE _Sec. 6 _Twp. 28 _S. R. 17 _ East _ West
City/State/Zip: Benedict, KS 66714	700 feet from S / N circle one) Line of Section
Purchaser: Bluestem Pipeline, LLC	700 feet from (E)/ W (circle one) Line of Section
Operator Contact Person: Doug Lamb	Footages Calculated from Nearest Outside Section Corner:
Phone: ( 620 ) 698-2250	(circle one) (NE) SE NW SW
Contractor: Name: Barton T. Lorenz	Lease Name: Shockley, Marjorie L. Well #: 6-1
License: 33286	Field Name: Cherokee Basin CBM
Wellsite Geologist: Michael L. Ebers	Producing Formation: Not yet complete
Designate Type of Completion:	Elevation: Ground: 995' Kelly Bushing:
New Well Re-Entry Workover	Total Depth: 1189' Plug Back Total Depth: 1180'
Oil SWD SIOWTemp. Abd.	Amount of Surface Pipe Set and Cemented at 24.5' Feet
Gas ENHR SIGW	Multiple Stage Cementing Collar Used?
Dry Other (Core, WSW, Expl., Cathodic, etc)	Viscos show depth set Feet
If Workover/Re-entry: Old Well Info as follows:	II Atternate il completion, centent orodated iron
Operator:JUN_1	3 2004 epth to surface w/ 180 sx cmt.
Well Name:	Of Filing Fluid Management Plan WHM 6-24-07
Original Comp. Date: Original Total Depth:	(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
Commingled Docket No	Location of fluid disposal if hauled offsite:
Dual Completion Docket No	·
Other (SWD or Enhr.?) Docket No	Operator Name:
02/17/04 02/19/04 03/01/04	Lease Name: License No.:
Spud Date or Date Reached TD Completion Date or	Quarter Sec TwpS. R East West
Recompletion Date Recompletion Date	County: Docket No.:
INSTRUCTIONS: An original and two copies of this form shall be filed with Kansas 67202, within 120 days of the spud date, recompletion, workove Information of side two of this form will be held confidential for a period of 12 to 7 for confidentiality in excess of 12 months). One copy of all wireline logs of TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells.	2 months if requested in writing and submitted with the form (see rule 82-3- and geologist well report shall be attached with this form. ALL CEMENTING
All requirements of the statutes, rules and regulations promulgated to regula herein are complete and correct to the best of my knowledge.	te the oil and gas industry have been fully complied with and the statements
Signature: Woughes K Ramb	KCC Office Use ONLY
Title: Manager Date: 06/15/04	Letter of Confidentiality Received
Subscribed and sworn to before me this 15th day of Ounc	If Denied, Yes Date:
20 04.	Wireline Log Received
	Geologist Report Received
Notary Public: John F. Aloud Jon B. JENNIFER	R. HOUSTON UIC Distribution State of Kansas
Date Commission Expires: 7/30/5005 My Appt. Expires 7	1/24/2007

#### Side Two

# ORIGINAL

Operator Name: Que	est Cherokee, LL	С				Shockley, Ma	arjorie L.	Well #:		
Sec. <u>6</u> Twp. <u>28</u>			West		, Wilso				***************************************	
NSTRUCTIONS: Sh ested, time tool open emperature, fluid rec Electric Wireline Logs	n and closed, flowing covery, and flow rate	g and shut- s if gas to	in pressures, \ surface test, al	whether shong with f	nut-in pre	ssure reached	l static level, hydr	rostatic pressure	s, bottom	hole
Drill Stem Tests Take		Ye	es 🗸 No		<b>V</b> L	og Forma	tion (Top), Depth	and Datum	Sa	mple
Samples Sent to Geo		☐ Ye	Name Name I enar					Тор <b>376</b>		tum 19
Cores Taken	nogical callyo	 □ Y€	Lonap		apah Lime Imont LIme		468	+5		
Electric Log Run		✓ Ye			l	nee Lime		640	+3	
(Submit Copy)					ego Lime		694	+3		
st All E. Logs Run:						ligris Lime				
						sissippi Lim	е	1135	-14	10
		Repo	CASING	RECORD	Note that the second se	No.	iction, etc.			
Purpose of String	Size Hole Drilled		e Casing	Wei Lbs.		Setting Depth	Type of Cement	# Sacks Used		d Percent litives
Surface	11"	Set (In O.D.) 8-5/8"		24.75#	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	24.5	"A"	6sx		
Production	6-3/4"	4-1/2"		10.5#		1180'	"A"	180sx		
			ADDITIONAL	CEMENTI	NG / SQ	JEEZE RECOF	RD			
Purpose:  —— Perforate  —— Protect Casing  —— Plug Back TD  —— Plug Off Zone	Depth Top Bottom	Туре	of Cement	#Sacks	s Used		Type and	l Percent Additives	;	
Shots Per Foot			RD - Bridge Pluç Each Interval Per		1	1	racture, Shot, Ceme		rd	Depth
None	Waiting on Pipe			TOTALOU						
TOTO	Training on tipe									
TUBING RECORD	Size	Set At		Packer .	At	Liner Run	Yes h	чo		
Date of First, Resumer	rd Production, SWD or	Enhr.	Producing Met	thod	Flowir	g Pum	ping Gas	Lift Oth	er (Explain)	
Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Wai	er	Bbls.	Gas-Oil Ratio		Gravity
Disposition of Gas	METHOD OF	COMPLETION	NC			Production In	terval			
Vented Sold	Used on Lease		Open Hole	Per	f.	Dually Comp.	Commingled			



## 211 W. 14TH STREET, CHANUTE, KS 66720 620-431-9210 OR 800-467-8676

# ORIGINAL

TICKET NUMBER

23216

LOCATION <u>CHANUTE</u>

#### **FIELD TICKET**

D 1 X	har 1	(; ~ \ \						
DATE	CUSTOMER ACCT #	WELL NAME	QTR/QTR	SECTION	TWP	RGE	COUNTY	FORMATION
- 15 m 17 m	. 6628	Shouthry		16	285	176	WL	
CHARGE TO	GUEST CHER	DKEE LLC		OWNER		- "		
			, 2%	Mark.	*	71.1		
MAILING ADD	RESS P.O. BOX	100		OPERATOR	}			
	7							
CITY & STATE	BENEDICT, K	KS 66714		CONTRACT	TOR			
				,				

ACCOUNT CODE	QUANTITY or UNITS.	DESCRIPTION OF SERVICES OR PRODUCT	UNIT PRICE	TOTAL AMOUNT
5401	1-WELL	PUMP CHARGE (EMENT PUMP		5359
- 3123	81#			73900
1128	81 #	LOMAR D	EIVED	324 02
1110	28 5KS	GILSONITE - JUN	8 2004	543, 20
1111	326#	SALT	0 2004	8/50
/111A .	70 #	METSO BEADS ACC W	VICHITA	9420
1107 30 50	70 # 2 5 K5	CELLO FLAKE / FLO-SEAL	MILA	113,25
1118	2 5KS	PREMIUM GEL / BENTONITE		33.60
12156	1 GAL	KCL		2200
,1				
		,		
				A. A.
1123	9,240 GALS	CITYWATER (220 BBL)		1.03, 15
		₽,		
		1		7
		e :		\$ <del>-</del>
	V	BLENDING & HANDLING	g	- 14.5
5407	1. 9mi	TON-MILES MAINIMUM		19/200
		STAND BY TIME	Jacob C. Company	
	, , , , , , , , , , , , , , , , , , , ,	MILEAGE	Supporter of	
5501	4 HR	WATER TRANSPORTS		3200
5502	4 MR	VACUUM TRUCKS		30000
	•	FRAC SAND		And the state of
		**		
1104	158 SKS	CEMENT CLASS "A" (180 SKS TOT	742)	13 43.00
-		*	SALES TAX	211.43
		đ		,
		£*`	<u>**</u>	
Ravin 2790		i se ilima	ESTIMATED TOTAL	4924.43

CUSTOMER or AGENTS SIGNATURE	_CIS FOREMAN	TOOD A. TINIZE
	4	
	-	
CHOTOMED AN ACENT (DI EACE DOINT)		

# CONSOLIDATED OIL WELL SERVICES, INC. 211 W. 14TH STREET, CHANUTE, KS 66720 620-431-9210 OR 800-467-8676

TICKET NUN	/BER	32	77	5	
LOCATION _	24	ANU	TE		
FOREMAN_	700	DA	7.100	DL 6	,

MAX RATE MIN RATE

## TREATMENT REPORT

# **O**RIGINAL

				* *					
DATE	CUSTOMER#	WELL NAME	FORMATION		TRUCK #	DRIVER	TRUCK #	DRIVER	
3-1-04	4628	\$ 6-1 SHUCKLEY			255	HEKE			
SECTION	TOWNSHIP	RANGE	COUNTY	ģ	103	WE 5			
6	285	17E	WL		285	CHRIS			
CUSTOMER	La companya de la companya del companya de la companya del companya de la company	I,		#s 5	140	TIM			
QUEST	CHAROKEE	44C							
	<u>CH€ ROK€€</u> RESS			1					
<i>P.o. Ba</i>	x 100								
1				1273					
BENEDIC STATE	A regulation		47						
STATE	of the latest and the state of	ZIP CODE		, i				en get	
K5		66719	4.			TYPE OF T	REATMENT		
					[]SURFACE	PIPE	[ ] ACID BREA	KDOWN	
TIME ARRIVED	ON LOCATION				[4]PRODUCT	TON CASING	[ ] ACID STIMU	JLATION	
	WELL	DATA		<b>-</b>	[ ]SQUEEZE	CEMENT	[ ] ACID SPOT	TING	
HOLE SIZE	634	PACKER DEPT	Ή	]	[ ] PLUG & Al	BANDON	[ ] FRAC		
TOTAL DEPTH	TOTAL DEPTH 1/81' PERFORATIONS		,	[ ] PLUG BAC	K	[ ] FRAC + NITROGEN			
		SHOTS/FT		-	[ ] MISP. PUMP		[ ]		
CASING SIZE	442	OPEN HOLE			[ ] OTHER		[ ]		
CASING DEPT	H 2 1179								
CASING WEIG	ìHT	TUBING SIZE			PRESSURE LIMITATIONS			T	
CASING CON	DITION	TUBING DEPT	H	4			THEORETICAL	INSTRUCTE	
		TUBING WEIG	НТ	4	SURFACE PIPE				
		TUBING CONE	OITION	4 :	ANNULUS LONG	STRING			
TREATMENT	VIA			J ;	TUBING			<u> </u>	
		•							
INSTRUCTION	PRIOR TO JOB	WINSH DU	wad 3	OLUTS YH	151NG, Run	2606 MA	VEND & CIKE	ULATE TO	
" UR FIFTE !	Pun 10 1	BEL DYE,	CONCUTU	WITTL DYE	ROTURN,	FELISH PU	IMP, PUMP	PLUB	
•	•		T 54106;		LEAL INCE	125, TA			
AUTH	ORIZATION TO P	ROCEED		TITLĘ			D/	ATE	
Marie and the second se				2.		-		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	
TIME	STAGE	BBL'S	INJ RATE	PROPPANT	SAND / STAGE	PSI		; 	
AM / PM	0,7,62	PUMPED		PPG					
	*			1			BREAKDOWN	PRESSURE	
							DISPLACEMEN	NT , ,	
							MIX PRESSUR	E	
							MIN PRESSUR	<del></del>	
				***			ISIP	<b>*</b>	
							15 MIN.		

#### TERMS.

In consideration of the prices to be charged for our services, equipment and products as set forth in Consolidated Oil Well Services, Inc's (COWS) current Price Schedule, and for the performance of services and supplying of materials, customer agrees to the following terms and conditions.

Terms. Cash in advance unless satisfactory credit is established. On credit sales, invoices payable to P.O. Box 884, Chanute, KS 66720. Invoices payable within 30 days of invoice date. Charges subjected to interest after 30 days from invoice date. Interest will be charged at Maximum rate allowed by law. In the event it is necessary to employ an attorney to enforce collection of such account, customer agrees pay all collection costs and attorney's fees in the amount of 20% of said amount.

Any applicable federal, state or local sales, use, occupation, consumer's or emergency taxes shall be added to the quoted price.

A sales tax reimbursement of 2% is applied to chemical and product charges for all services performed on oil and gas wells in the State of Texas.

All process license fees required to be paid to others will be added to the scheduled prices.

All prices are subject to change without notice.

#### **SERVICE CONDITIONS**

Customer warrants that the well is in proper condition to receive the services, equipment, products, and materials to be supplied by COWS.

"The customer shall at all time have complete care, custody, and control of the well, the drilling and production equipment at the well, and the premises about the well. A responsible representative of the customer shall be present to specify depths, pressures, or materials used for any service which is to be performed."

- (a) COWS shall not be responsible for, and customer shall secure COWS against any liability for damage to property of customer and of the well owner (if different from customer), unless caused by the willful misconduct or gross negligence of COWS, this provision applying to but not limited to sub-surface damage and surface damage arising from subsurface damage.
- (b) Customer shall be responsible for and secure COWS against any liability for reservoir loss or damage, or property damage resulting from sub-surface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct of gross negligence of COWS.

- (c) Customer shall be responsible for and secure COWS against any and all liability of whatsoever nature for damages as a result of a subsurface trespass, or an action in the nature thereof, arising from a service operation performed by COWS hereunder.
- (d) Customer shall be responsible for and secure COWS against any liability for injury to or death of persons, other than employees of COWS, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of COWS.
- (e) COWS makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or services.
- (f) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, COWS is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by COWS. COWS personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but customer agrees that COWS shall not be responsible for any damage arising from the use of such information except where due to COWS gross negligence or willful misconduct in the preparation or furnishing of it.

#### WARRANTIES - LIMITATION OF LIABILITY

COWS warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED OR MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. COWS's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to COWS or, at COWS's option, to the allowance to the customer of credit for the cost of such items. In no event, shall COWS be liable for special, incidental, indirect, punitive or consequential damages.

COWS personnel will use their best efforts in gathering such information and their best judgement in interpreting it, but Customer agrees that COWS shall not be liable for and CUSTOMER SHALL INDEMNIFY AGAINST ANY DAMAGED ARISING FROM THE USE OF SUCH INFORMATION, even if such is contributed by the COWS negligence or fault.

## **POSTROCK**



# **Current Completion**

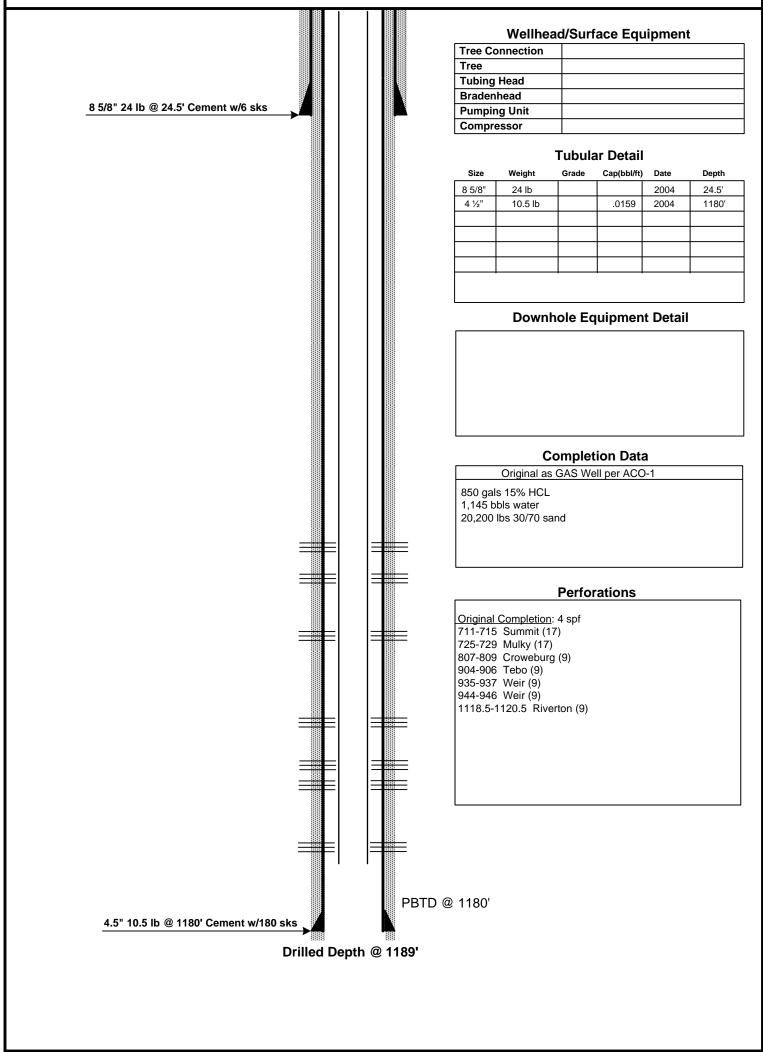
WELL: Shockley, Marjorie L 6-1

FIELD : Cherokee Basin

STATE : Kansas COUNTY : Wilson SPUD DATE: 2/17/2004 COMP. DATE: 3/1/2004 API: 15-205-25725-00-00

LOCATION: 6-28S-17E (NE,NE)

**ELEVATION: 995'** 



PREPARED BY: POSTROCK
APPROVED BY:

**DATE:** July, 2012

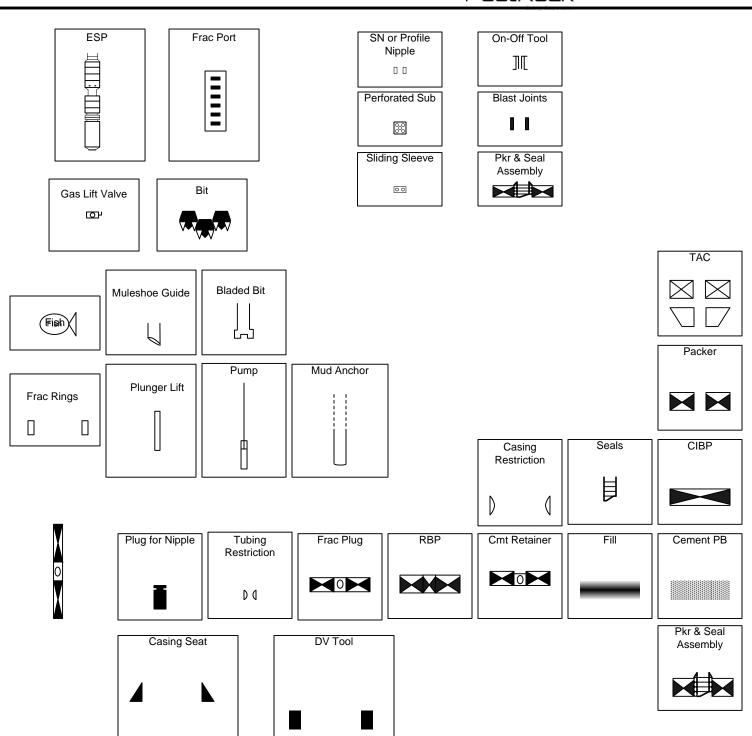
DATE:\_

# **POSTROCK**



## **LEGEND**

# PostRock<sup>®</sup>



## SHOCKLEY, MARJORIE L 6-1

1 NAME & UPPE	R & LOWER LIMIT OF EACH F	PRODUCTION INTERVAL TO BE	COMMING	LED			
FORMATION:	WEIR	(PERFS):	944 -	946			
FORMATION:	RIVERTON	(PERFS):	1118.5 -	1120.5			
FORMATION:	BARTLESVILLE	(PERFS):	972 -	976			
FORMATION:	BARTLESVILLE	(PERFS):	987 -	992			
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):					
FORMATION:		(PERFS):					
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):					
2 ESTIMATED AN	MOUNT OF FLUID PRODUCTION	ON TO BE COMMINGLED FROM	л EACH INT	ERVAL			
FORMATION:	WEIR	BOPD:	0	MCFPD:	6.57	BWPD:	0.71
FORMATION:	RIVERTON	BOPD:	0	MCFPD:	6.57	BWPD:	0.71
FORMATION:	BARTLESVILLE	BOPD:	1.5	MCFPD:	0	BWPD:	10
FORMATION:	BARTLESVILLE	BOPD:	1.5	MCFPD:	0	BWPD:	10
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	
FORMATION:		BOPD:		MCFPD:		BWPD:	

Affidavit of Notice Served	
Re: Application for: APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS ACO-4	_
Well Name: SHOCKLEY, MARJORIE L 6-1 Legal Location: NESWNENE S6-T28S-	R17E
The undersigned hereby certificates that he / she is a duly authorized agent for the applicant, and that on the day	ST
2012, a true and correct copy of the application referenced above was delivered or mailed to the following parties:	,
, a filter and correct copy of the application releienced above was delivered of mailed to the ioliowing parties.	
Note: A copy of this affidavit must be served as a part of the application.	
Name Address (Attach additional sheets if necessary)	
POSTROCK MIDCONTINENT PRODUCTION LLC 210 PARK AVENUE, SUITE 2750, OKLAHOMA	A CITY, OK 73102-5641
I further attest that notice of the filing of this application was published in the WILSON COUNTY CITIZEN ,	the official county publication
of WILSON county. A copy of the affidavit of this publication is attached.	, p
. 1.1.1	
Signed this	v .
Cless of Mars	A 2 2
Applicant or Duty Authorized Agent	
Subscribed and sworn to before me this /4/- day of AUGUST	, 2012
JENNIFER P. BEAL Quantu R Beal	9
SEAL MY COMMISSION EXPIRES  Notary Public  Notary Public	w**
My Commission Expires: Oelly 30,	2016

	I
fset Operators, Unleased Mineral Owners and Landowners acreage	
tlach additional sheets if necessary)	
Name: OSTROCK MIDCONTINENT PRODUCTION, LLC	Legal Description of Leasehold: POSTROCK HAS LEASED ALL ACREAGE IN THE 1/2
DSTRUCK MIDCONTINENT PRODUCTION, LLC	
	MILE RADIUS
reby certify that the statements made herein are true and correct to the best of	
	( ) o ss of Morris
Applió	ant or Duly Authorized Agent
Subscribed and sworn before	e me this day of
	Aunrider B Beal
JENNIFER R. BEAL OFFICIAL MY COMMISSION EXPIRES Notary	Public
and and	( ) ( be sell
	mmission Expires: William OD OUTO
1 00 000 my oo	mmission Expires:
	mmission Expires: Story Story
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	mmission Expires:
	mmission Expires:

#### AFFIDAVIT

STATE OF KANSAS

SS.

County of Sedgwick

Mark Fletchall, of lawful age, being first duly sworn, deposeth and saith: That he is Record Clerk of The Wichita Eagle, a daily newspaper published in the City of Wichita, County of Sedgwick, State of Kansas, and having a general paid circulation on a daily basis in said County, which said newspaper has been continuously and uninterruptedly published in said County for more than one year prior to the first publication of the notice hereinafter mentioned, and which said newspaper has been entered as second class mail matter at the United States Post Office in Wichita, Kansas, and which said newspaper is not a trade, religious or fraternal publication and that a notice of a true copy is hereto attached was published in the regular and entire Morning issue of said The Wichita Eagle for \_1\_ issues, that the first publication of said notice was

made as aforesaid on the 17th of

August 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

17th day of August, 2012

PENNY L. CASE Notary Public - State of Kansas My Appt. Expires 5

Notary Public Seggwick County, Kansas

Printer's Fee: \$139.60

#### **LEGAL PUBLICATION**

PUBLISHED IN THE WICHITA EAGLE
AUGUST 17, 2012 (2201719)
BEFORE THE STATE
CORPORATION COMMISSION
OF THE STATE OF KANSAS
NOTICE OF FILING APPLICATION
RE: In the Malter of Postrock Midcontinent
Production, LLC Application for
Commingsling of Production in the
Shockley, Marforte L 6-1 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 polifiled
that Postrock Midcontinent Production,
LLC has filed an application to commingte
the Summit, Mulky, Croweburg, Tebo,
Weir, Riverton, and Bartlesville producing
formalions at the Shockley, Marforte L 6-1,
located in the NESWNENE S6-T28S-R17E,
Approximately 719 FRL & 679 FEL; Wilson
County, Kansas.
Any persons who object to or profest

Approximately 719 FNL & 679 FEL, Wilson County, Kansas.

Any persons who object to or protest his application shall be required to file their objections or protest with the Conservation Division 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 politite the natural resources of the State of Kansas.

All persons interested or concerned shall

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 Cas Compission.

Conservation Division of the Renaes on 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

counsel or as Individuals, appearing on the own behalt.
Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma Cily, Oklahoma 73102 (405) 660-7704
ACOPY OF THE AFFIDAVIT OF PUBLICATION MUST ACCOMPANY ALL APPLICATIONS

#### 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 2nd publication was made on the 3rd publication was made on the\_\_\_\_\_ 4th publication was made on the \_\_\_\_\_day of 5th publication was made on the 6th publication was made on the\_

(Signed)

My commission expires

Subscribed and sworn to before me, this

(Published in the Wilson County Citizen on Thursday, August 16, 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 Shockley, Marjorie L 6-1 located in Wilson County, Kansas.

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

You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has filed an application to commingle the Summit, Mulky, Croweburg, Tebo, Weir, Riverton, and Bartlesville producing formations at the Shockley, Marjorie L 6-1, located in the NESWNENE S6-T28S-R17E, Approximately 719 FNL & 679 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 them-selves 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, Suité 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704 52 1 cpy.



Rita M. Reiph NOTARY PUBLIC State of Kansas STATE OF KANSAS I MV Commission Expires 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/

Mark Sievers, Chairman Thomas E. Wright, Commissioner Sam Brownback, Governor

September 4, 2012

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

RE: Approved Commingling CO081224

Shockley, Marjorie L. 6-1, Sec. 6-T28S-R17E, Wilson County

API No. 15-205-25725-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on August 24, 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 CO081224 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