

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

Form ACO-4 Form must be typed March 2009

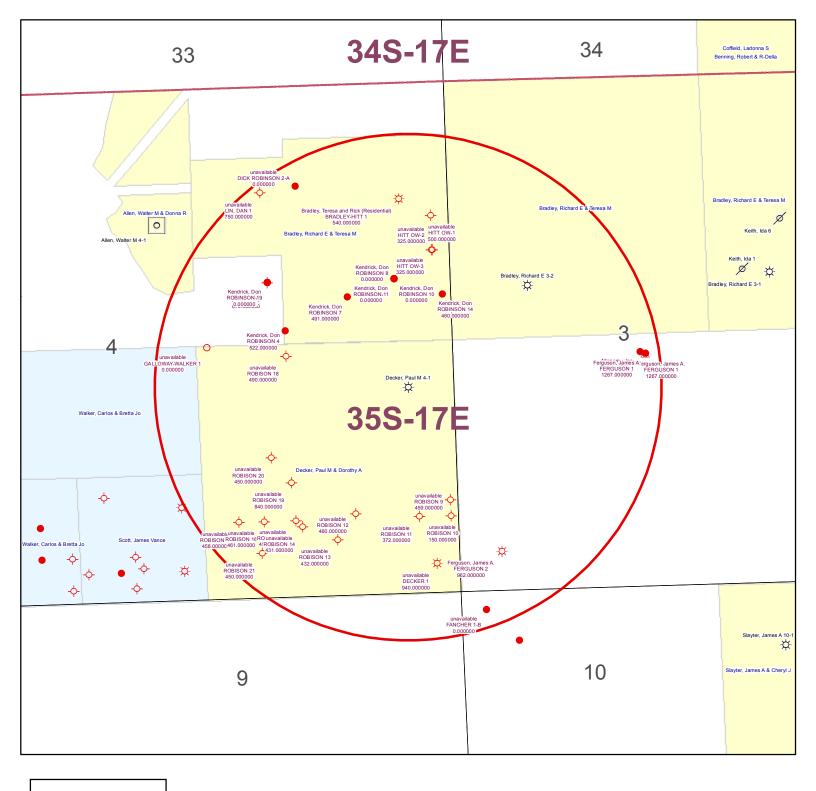
APPLICATION FOR COMMINGLING OF Commingling ID #_ PRODUCTION (K.A.R. 82-3-123) OR FLUIDS (K.A.R. 82-3-123a)

OPERAT	OR: License #	API No. 15				
Name:_		Spot Description:				
Address	1:		Sec Twp	S. R East West		
Address	2:		Feet from No	rth / South Line of Section		
City:	State: Zip:+		Feet from Eas	st / West Line of Section		
	Person:					
Phone:	()_	Lease Name:	Well	#:		
<u> </u>	Name and upper and lower limit of each production interval to	be commingled:				
	Formation:	(Perfs): _				
	Formation:	(Perfs): _				
	Formation:	(Perfs): _				
	Formation:	(Perfs): _				
	Formation:	(Perfs): _				
_						
2.	Estimated amount of fluid production to be commingled from e					
	Formation:			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	rator.	es within a 1/2 mile radius of		
5 0						
	nmingling of PRODUCTION ONLY, include the following:	Van Na				
<u>5</u> .	Wireline log of subject well. Previously Filed with ACO-1:	_				
<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 comm	ningled.			
current ir mingling	/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 istent with the information supplied in this application.	Su	bmitted Electron	ically		
KCC	Office Use Only			in the application. Protests must be		
l —	nied Approved	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.				

Date: _

Denied Approved 15-Day Periods Ends: __

Approved By:



KGS STATUS

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

Decker, Paul M 4-1 4-35S-17E 1" = 1,000'



KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1065835

Form ACO-1 June 2009 Form Must Be Typed Form must be Signed All blanks must be Filled

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

Name: PostRock Midcontinent Production LLC Address 1: Oklahoma Tower Address 2: 210 Park Ave, Ste 2750 City: OKLAHOMA CITY State: OK Zip: 73102 + Contact Person: CLARK EDWARDS Phone: (620) 4319500 CONTRACTOR: License # 5675	API No. 15 - 15-125-32089-00-00 Spot Description: SW_NE_NE_SE_Sec. 4 Twp. 35_S. R. 17_ Feast West 2150 Feet from North / South Line of Section 475 Feet from East / West Line of Section Footages Calculated from Nearest Outside Section Corner: NE NW SE SW County: Montgomery Lease Name: DECKER, PAUL M Well #: 4-1
Address 1: Oktahoma Tower Address 2: 210 Park Ave, Ste 2750 City: OKLAHOMA CITY State: OK Zip: 73102 + Contact Person: CLARK EDWARDS Phone: (620) 4319500 CONTRACTOR: License # 5675	SW_NE_NE_SE_Sec. 4 Twp. 35 S. R. 17 Feast West 2150 Feet from North / South Line of Section 475 Feet from East / West Line of Section Footages Calculated from Nearest Outside Section Corner: NE NW SE SW County: Montgomery
City: OKLAHOMA CITY State: OK Zip: 73102 + Contact Person: CLARK EDWARDS Phone: (620) 4319500 CONTRACTOR: License # 5675	Feet from North / South Line of Section 475 Feet from East / West Line of Section Footages Calculated from Nearest Outside Section Corner: NE NW SE SW County: Montgomery
Contact Person: CLARK EDWARDS Phone: (620) 4319500 CONTRACTOR: License # 5675	Feet from East / West Line of Section Footages Calculated from Nearest Outside Section Corner: NE NW SE SW County: Montgomery
Phone: (620) 4319500 CONTRACTOR: (Icense # 5675	Footages Calculated from Nearest Outside Section Corner: NE NW SE SW County: Montgomery
CONTRACTOR: License # 5675	County: Montgomery
CONTRACTOR: License # 5675	
	Lease Name: DECKER, PAUL M Well #: 4-1
Name: McPherson, Ron dba McPherson Drilling	
KEN PECOV	Field Name:
Purchaser:	Producing Formation: CHEROKEE COALS
Designate Type of Completion:	Elevation: Ground: 7777 Kelly Bushing: 0
✓ New Well Re-Entry Workover	Total Depth: 1041 Plug Back Total Depth: 1032
□ Oil □ WSW □ SWD □ SIOW	Amount of Surface Pipe Set and Cemented at: 23 Feet
☑ Gas ☐ D&A ☐ ENHR ☐ SIGW	Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
☐ OG ☐ GSW ☐ Temp. Abd.	If yes, show depth set: Feet
CM (Coal Bed Methane)	If Alternate II completion, cement circulated from: 1032
Cathodic Other (Core, Expl., etc.):	feet depth to: 0 w/ 160 sx cmt.
If Workover/Re-entry: Old Well Info as follows:	
Operator:	Drilling Child Management Dis-
	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit)
Original Comp. Date: Original Total Depth:	Chloride content: 0 ppm Fluid volume: 0 bbls
Deenening Re-nerf Conv.to.ENHR Conv.to.SWD	Dewatering method used: Evaporated
Conv. to GSW	Downtering metrico useu.
<u> </u>	Location of fluid disposal if hauled offsite:
Commingled Permit #:	Operator Name:
Dual Completion Permit #:	Lease Name: License #:
SWD Permit #:	Quarter Sec Twp S. R
Other.	County: Permit #:
6/14/2011 6/15/2011 7/6/2011	
Spud Date or Date Reached TD Completion Date or Recompletion Date	

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY						
Letter of Confidentiality Received						
Date:						
Confidential Release Date:						
☑ Wireline Log Received						
Geologist Report Received						
UIC Distribution						
ALT I I II Approved by: Dearns Gerisor Date: 10/24/2011						



Operator Name: PC	STROCK MIDCONTIN	ent Production LLC	Lease N	vame: _	DECKER, PA	UL M	Weil #:4-	1	
Sec. 4 Twp.35	5s. R. <u>17</u>		County	Mon	tgomery		·		
time tool open and c recovery, and flow ra	losed, flowing and shi	nd base of formations put- ut-in pressures, whether est, along with final char I well site report.	shut-in press	sure rea	ched static level,	hydrostatic pre	ssures, bottom l	hole temi	nerature fluid
Orlii Stem Tests Take (Attach Additional		Yes 🗸 No		٦	og Formatio	n (Top), Depth	and Datum		Sample
Samples Sent to Ger	ological Survey	☐ Yes 🗸 No		Nam SEE A	ATTACHED		Тор		Datum
Cores Taken Electric Log Run Electric Log Submitte (If no, Submit Cop	☐ Yes ☑ No ☑ Yes ☐ No ☑ Yes ☐ No		522 7						
List All E. Logs Run: Attached			9						
		CASING	G RECORD	 ▼ Ne	w Used	<u> </u>			
		Report all strings se				on, etc.		,	
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Welg Lbs./		Setting Depth	Type of Cement	# Sacks Used		and Percent Additives
SURFACE	12.25	8.625	22		23	A	4		
PRODUCTION	7.875	5.5	14.5		1032.6	Α	160		
		ADDITIONA	L CEMENTIN	IG / SQL	JEEZE RECORD			1.	
Purpose: Perforate Protect Casing	Depth Top Bottom	Type of Cement	# Sacks			Type and	Percent Additives		
Plug Back TD Plug Off Zone	-								·
Shots Per Foot		ON RECORD - Bridge Plu Footage of Each Interval Pe				ture, Shot, Ceme	int Squeeze Recon	d	Depth
4	897-899/828-830				400GAL 15% HCL W/ 6688	LS 2% KCL WATER, 6818BL	W 2% KOL, BIOCIDE, MAXPL	.OW, 40008 20/40	897-899/828-830
4	625-627/488-490	/458-460/433-435	***		400GAL 15% HCL W 6488	LS 2% KCL WATER, 73088L	I WI 7% KIZL, BIOCIDE, MAXPL	OW, 80008 2040	625-627/488-400/458-41
4	424-428				400GAL 15% HCL WF 3288	LS 2% KCI, WATER, 6808BL	S W/ 2% KOL, BIOCIDE, MAXPL	.OW, 12000# 204	424-428
4	384-387				400GAL 15% HCL WF51BS	.8 2% KCL WATER, 85088L	I W 2% KCL, BIOCIDE, MAXPL	OW, 5200# 2044	384-387
TUBING RECORD:	Size: 1.5	Set At: 996	Packer At:		Liner Run:	Yes N	0		
Date of First, Resumed 7/29/2011	Production, SWD or EN	HR. Producing Me	thod: Pumping		Gas Lift 🔲 O	ther (Explain)			
Estimated Production Per 24 Hours	Oil O	Bbls. Gas 0	Mcf	Wate 5	ar Bb 3	ıls.	Gas-Oll Ratio		Gravity
DISPOSITI	ON OF GAS:		METHOD OF (COMPLE	TION:	l l	PRODUCTIO	N INTER	ν/ΔΙ ·
Vented ✓ Solo	_	I — .	Perf.	Dually	Comp. Com	mingled		A HAICK	• · · · · · · · · · · · · · · · · · · ·
(If vented, Su	(Submit ACO-4) (If vented, Submit ACO-18.) Other (Specify)								

Form	ACO1 - Well Completion
Operator	PostRock Midcontinent Production LLC
Well Name	DECKER, PAUL M 4-1
Doc ID	1065835

All Electric Logs Run

GRN		<u>_</u>	-		
DIL		 ·	-		<u>.</u>
CDL	_				· •
NDL	<u> </u>	 		······································	
TEMP			-	·· <u></u>	

1800 of 5700 South 5/8 winte

QUEST
Resource Corporation

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

AFE DIIO48

TICKET	NUMBER

7089

FIELD TICKET REF # _____

FOREMAN Jackson

SSI 630070

TREATMENT REPORT & FIELD TICKET CEMENT

API	<i>15-</i>	125-	<u>. 3</u>	20	89
					- •

FOREMAN/ OPERATOR TIME IN OUT LUNCH FOREMAN/ OPERATOR IN OUT LUNCH FOREMAN/ OPERATOR THAILER TRUCK EMPLOYEE SIGNATURE TRUCK HOURS SIGNATURE TRUCK HOURS SIGNATURE TRUCK EMPLOYEE SIGNATURE TO BE BLANCOCK C:00 /0:00 904850 4 1.886 W. J. Blancock C:00 903600 TO 3197 TO 3250 TO 3197 TO 3197 TO 3250 TO 3197 TO 319	DATE		WELL N	ME & NUMBE	R	SECTION	TOWNSHIP	RANGE	COUNTY
OPERATOR IN OUT LUNCH # HOURS SIGNATURE The Right of C:00 /0:00 904850 4 1286 1 WEST FINE C:00 93505 931395 1286 1 WEST FINE C:00 903600 1 WES	6-16-11	Decker	e Paul	1-1		4	35	17	MG
DE TYPE LONGSTRUGHOLE SIZE 77/8 HOLE DEPTH 1040 CASING SIZE & WEIGHT 51/2 142 ASING DEPTH 13.5 SLURRY VOL WATER GALISK CEMENT LEFT IN CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm EMARKS: TO GET due to Surface Flush pump. Pump wiper plug to bottom of set for		1	, .		TRUCK	TRAILER	TRUCK	<	EMPLOYEE
Jes Grimen (:00 Wastral PORTBL 6:06 PO3600 PO3197 BE TYPE LONG STRUCTHOLE SIZE 77/8 HOLE DEPTH 1040 CASING SIZE & WEIGHT 5/2 142 ASING DEPTH 1032.6 ODRILL PIPE TUBING OTHER URRY WEIGHT 13.5 SLURRY VOL WATER GALVSK CEMENT LEFT IN CASING OF SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46 pm EMARKS: ENSTALED CEMENT head Ray 15x get 4 16 BBI dye 4 160 5xs of contact of the	OPERATOR	IN	OUT	LUNCH	#	#	HOUR	S	SIGNATURE
DES GYLMON C:00 931505 903608 DESTINATION L:00 93197 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 931505 901395 PURPLE LONG SIZE & WEIGHT 51/2 14/2 DESTINATION L:00 PURPLE LONG SIZE & WEIGHT 51/2 14/2 PURPLE LONG SIZ	Tae Blandond	6:00	10:00		904850		4	10	a Blosha
SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm MARKS: ENSTOYLED COMMANDER SIZE 778 HOLE DEPTH 1040 CASING SIZE & WEIGHT 5/2 142 MIX PSI CEMENT LEFT IN CASING O RATE 46pm MIX PSI RATE 46pm ENSTOYLED CEMENT HEAD RAN 15x get 4 16 BBI dye 4 160 5xs of common of the common of	les Gylmon	6:00			931505	921395		. Yu	1 Stold
INSTALLED CONTROL SIZE 77/8 HOLE DEPTH 1040 CASING SIZE & WEIGHT 5/2 143 ASING DEPTH 1032.6 ODRILL PIPE TUBING OTHER LURRY WEIGHT 13.5 SLURRY VOL WATER gal/sk CEMENT LEFT IN CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46 pm EMARKS: EMSTALLED CEMENT LEAD RAN ISK gal & 16 BBI dye & 160 SKS of and a get dye to Surface. Flush pump. Pump wipee plug to bottom & sat files.	ATAGO LATEUX	6:06			903600			N) store
HOLE DEPTH 1040 CASING SIZE & WEIGHT 5/2 142 ASING DEPTH 1032.6 ODRILL PIPE TUBING OTHER URRY WEIGHT 13.5 SLURRY VOL WATER GAL/SK CEMENT LEFT IN CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46 pm EMARKS: EMSTOLIES CEMENT LEAD RAW ISK GAL & 16 BBI due 4 160 SKS of and 6 get due to Surface. Flush pump. Pump wipee plug to bottom & sutf	MINT. Jayheu	16:00	A				1		111
TUBING OTHER OTHER OTHER OTHER OTHER URRY WEIGHT 13.5 SLURRY VOL WATER GAL/SK CEMENT LEFT IN CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm MARKS: MATCHIEL CEMENT LEFT IN CASING O MIX PSI RATE 46pm MIX PS						-			7-
TUBING OTHER OTHER OTHER OTHER OTHER URRY WEIGHT 13.5 SLURRY VOL WATER GAL/SK CEMENT LEFT IN CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm HARKS: WATER GAL/SK OTHER		,		•			<u> </u>		
EMARKS: LURRY WEIGHT 13.5 SLURRY VOL WATER gal/sk CEMENT LEFT in CASING O SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm EMARKS: LUSTONIED CEMENT LEAD RAN ISK gal & 16 BBI dye & 160 SKS of conformation of Set & 16 BBI dye & 16 BBI d								і G HT <u>5</u>	12 14#
SPLACEMENT 24.58 DISPLACEMENT PSI MIX PSI RATE 46pm MARKS: GUSTOLIED CEMENT LEAD RAW ISK get & 16 BBI dye of 160 SKS of an So get dye to Surface. Flush pump. Pump wiper plug to bottom of set f	JRRY WEIGHT_/.3	.5 SLURR	Y VOL	v	VATER gal/sk	CEM	ENT LEFT in C	ASING C)
MARKS: ENSTAbled Cement head Ran Isk get & 16 BBI due of 160 SKS of con Es get due to Surface. Flush pump. Pump wiper plug to bottom & sutf									<u></u>
Eustalled Cement head Ran Isk get & 16 BBI due of 160 5ks of an Es get due to Surface. Flush pump. Pump wiper plug to bottom of set f Show.									
5 get dye to Surface. Flush pump. Pump wiper plug to bottom & set f Shore.	ENSTALLED !	Coment	head s	lan I	sk and d	16 BBI de	10 4 10	A 4V4	of mean
Shoe.	to get due	to Sud	face. Flu	15/2 01.14	Dum 1	41048 Alua	to hat		Set Clar
*	Shore		·	-	7	7- 7-3			
	3410 							•	
Storted Casing 8:00 Started Cement 9:15	Started (Casina	\$:00 :	stante	1 Coment	9:16			

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION OF SERVICES OR PRODUCT	TOTAL AMOUNT
904850	4 hr	Foreman Pickup	7,000,000
903197	H hr	Cement Pump Truck	
903600	4 hc	Bulk Truck	
931505	4 50	Transport Truck	
931395	4 hr	Transport Trailer	
	•	80 Vac	
	1032.60 FH	Casing 5/2	
		Centralizers	
		Float Shoe	
		Wiper Plug	
		Frac Baffles 41/2" Big hole	
	125 SK	Portland Cement	
	35 SK	Glisonite	
	1 5k	Flo-Seal	
	9 sk	Premium Gel	
	6sk	Cal Chloride	
		→ 5½ Bosket	
	700000	City Water	
903142	4 hc	Casino tractor	
937960	4 6	Casina trailer	

Did. In Theren Outling 06/15/11 Nathanday @ 1PM.

		·			_
Pipe#	Length	Running Total	Baffle Location	POSTROCK ENERGY CORP - CASING TALLY SHEET	ì
1_	39.62	39.62		Date: 6/14/11]
2	39.81	79.43	Cement Basket	Weil Name & #: Decker, Paul M. 4-1	
3	39.74	119.17	Minla	Township & Range: 35S-17E	<u> </u>
4	38.23	(157.40)	a 15 14	County/State: Montgomery / Kansas	
5	39.08	196.48		SSI #: 630070	ď
6	39.88	236.36		AFE#: D11048	
7	38.54	274.90		Road Location: 1800 Rd. & 5700 Rd., S & W into	
8	39.17	314.07		API# 15-125-32089	
9	39.14	353.21			
10	38.40	391.61	1		
11	39.45	431.06	No Wass B	Aflehere. Nad enough room.	
12	39.28	470.34		//	
13	39.62	509.96			
14	38.52	548.48			
15	40.24	588.72			
16	40.12	628.84			
17	40.60	669.44			
18	39.67	709.11			
19	39.62	748.73			
20	39.54	788.27	-Set four	Bolle @ 788,27 ft. Big Hole it	Using up
(21)	38.78	827.05		Boffle @ 788.27 ft. Big Hole A	Big Holes
22	39.58	866.63			m Cowe
23	38.54	905.17	<u>-</u>		2. Ollo.
24	39.68	944.85			poff.
25	38.93	983.78			
260	38.82	1022.60 ·			
27	39.49	1062.09	-out		
Sub	10.00	-1072:09 	Tally Bottom 10	32.60-fet.	
	1/20	2/		+ MINIS	
	nac	201	many	y she roge , sub.	
	<u> </u>	1 0			
L	$\sum_{i} \Delta_{i}$	last 10	9.0	1437	
	0	100 Cen	1000	Hal.	
			0		
		(p)			
		De	ope.		
				2.0	
				Bottom String	

miss Top 909 ft.
Tally Bottom 1032,60ft.
Oulla TO 1040 ft.
Log Bottom 1040.70fd.

Teamwork works! Put Safety 1st!

The Ke Rows

81. Geologis

Cell 820-305-9900

06-15-2011

McPherson Drilling LLC Drillers Log

• PO# AFE# D11048

<u></u>			,	
Rig Number: 1		S. 4	T. 35	R.17 E
API No105- 125-32089	777	County:	Montgon	nery
Elev.	111	Location:		

Operator:	POST	POSTROCK				
Address:	210 Park Ave Ste 2750					
	Oklaho	oma City, OK 73102	-5641			
Well No:	4-1	Le	DECKER			
Footage Location:		2,150	ft. from the	SOUTH Line		
		475	ft. from the	EAST Line		
Drilling Contr	actor:	McPherson Dr	illing LLC			
Spud date: 6/14/2011		6/14/2011	Geologist:	Ken Recoy		
Date Completed: 6/15/2011 Total Depth: 104			1040			

Casing Record		-	Rig Time:		
	Surface	Production			
Size Hole:	11"	7 7/8"			
Size Casing:	8 5/8"		394' & 462'	odor	
Weight:	20#				
Setting Depth:	23	MCP	910'	h2o	
Type Cement:	Port	ŀ	DRILLER:	Andy Coats	
Sacks:	4	MCP .			

Gas Tests:	
78'	0
203'	0
228'	0
303'	0
404'	1.68
429'	2.92
454'	2.92
529'	2.92
604'	3.37
629'	6.55
679'	5.32
704'	5.32
905'	6.55
929'	5.86
1040'	5.86
Comments:	
Start injecting @	

Well Log								
Formation	Тор	Btm.	HRS. Formation	Тор	Btm.	Formation	Тор	Btm.
soil	0	2	coal	625	627			
lime	2	5	shale	627	657			
shale	5	50	coal	657	658	1		
lime	50	62	shale	658	685			
black shale	62	64	coal	685	687			
lime	64	73	shale	687	894			
shale	73	193	coal	894	896			
lime	193	212	shale	896	907			
coal	212	214	miss	907	1040			
shale	214	350	ľ					
oswego	350	383						
summit	383	388						
lime	388	419						
mulky	419	425						
lime	425	431						
shale	431	450						
coal	450	452						
shale	452	462						
oil sand	462	468						
sand shale	468	505				Í		
coal	505	506						
shale	506	590						
coal	590	591						
shale	591	625						

-	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	Ба	rite	
.,		(mg/l)						0.00			
	Fe ²⁺	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn ²⁺	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb ²⁺	(mg/l)						0.00	Gyp	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	0,12
	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{\textit{Z}}\text{Aligner}\text{Limity} \text{Calculated} \$\mathbb{\text{L}}\text{Calculated} \$\mathbb{\text{L}\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	71.0 71.0 25.0 25.0 1 1 1 2 3 4	Inhibitor NTMP BHPMP PAA DTPMP	Unit Converter From Unit °C m³ m³ MPa	49.0 25.0 25.0 25.0 (From metric Value 80 100 1,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= ZAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor # is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit °C m³ m³ MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed,	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I) (mg/l) Input 120 1 4 1 50	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 4 5 6 6 7	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA HEDP	Unit 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

POSTROCK



Current Completion

WELL : Decker, Paul M 4-1 **FIELD** : Cherokee Basin

COMP. Date: 7/6/2011 API: 15-125-32089-00-00

SPUD DATE: 6/14/2011

STATE : Kansas

COUNTY : Montgomery

LOCATION: 4-35S-17E (NE, SE)

ELEVATION: GL - 777' Wellhead/Surface Equipment Tree Connection Tree **Tubing Head** Bradenhead 8 5/8" 20 lb @ 23' Cement w/4 sks **Pumping Unit** Compressor **Tubular Detail** Weight Grade Size Cap(bbl/ft) Date 8 5/8" 20 lb 2011 1032 5 ½ 2011 1 1/2" 2011 **Downhole Equipment Detail Completion Data** Original as GAS Well per ACO-1 1,200 gals 15% HCL 2,000 bbls water 19,500 lbs 20/40 sand **Perforations** Original Completion: 4 spf 384-387 (Summit) 424-428 (Mulky) 453-455 (Iron Post) 458-460(Bevier) 488-490 (Croweburg) 625-627 (Weir) 828-830 (Rowe) 897-899 (Riverton) 1 1/2" tubing @ 996' PBTD @ 1032' 5.5" 14.5 lb @ 1032' Cement w/160 sks Drilled Depth @ 1041'

PREPARED BY: POSTROCK

APPROVED BY: _

DATE: July, 2012

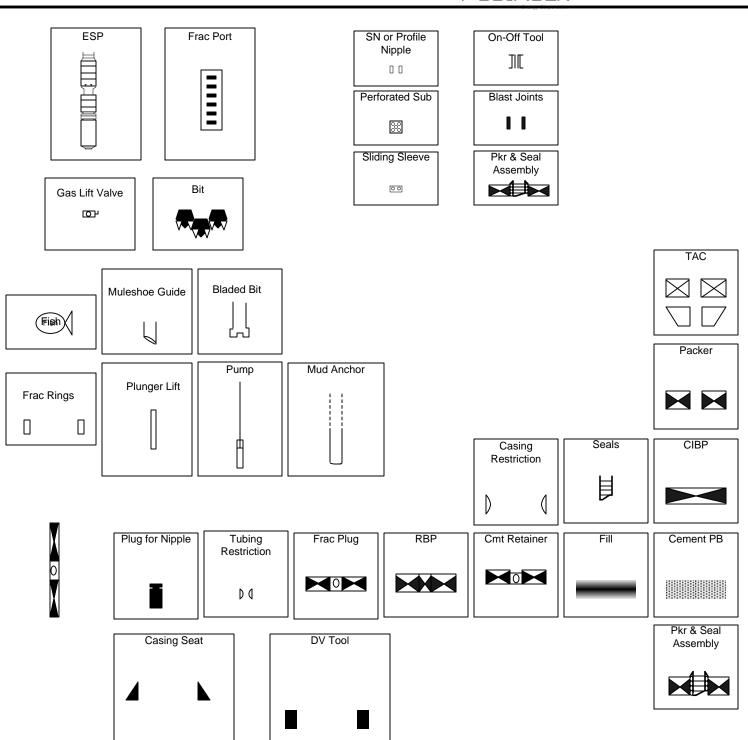
DATE:

POSTROCK



LEGEND

PostRock[®]



DECKER, PAUL M 4-1

1 NAME & UPPE	R & LOWER LIMIT OF EACH PRODU	JCTION INTERVAL TO BE C	OMMING	LED			
FORMATION:	WEIR	(PERFS):	625 -	627			
FORMATION:	ROWE	(PERFS):	828 -	830			
FORMATION:	RIVERTON	(PERFS):	897 -	899			
FORMATION:	SQUIRREL	(PERFS):	464 -	470			
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):					
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):		·			
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):	-				
FORMATION:		(PERFS):	-	•			
2 ESTIMATED AN FORMATION:	MOUNT OF FLUID PRODUCTION TO WEIR	BE COMMINGLED FROM BOPD:	EACH INT	ERVAL MCFPD:	2	BWPD:	5
FORMATION:	ROWE	BOPD:	0	MCFPD:	2	BWPD:	5
FORMATION:	RIVERTON	BOPD:	0	MCFPD:	2	BWPD:	5
FORMATION:	SQUIRREL	BOPD:	3	MCFPD:	0	BWPD:	20
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:	
						_	

L		
Affidavit of Notice Served		
Re: Application for: APPLICATION FOR COMMINGLING	G OF PRODUCTION OR FLUIDS ACO-4	
Well Name: DECKER, PAUL M 4-1	Legal Location: SWNENESE S4-T35S-R17E	
The undersigned hereby certificates that he / she is a duly authorized agent for	or the applicant, and that on the day $3/s+$ of JULY	
, a true and correct copy of the application referenced al	bove 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)	
ALLENERGY, INC	PO BOX 453201, GROVE, OK 743	45
TERESA & RICK BRADLEY	1691 CR 5700, COFFEYVILLE, KS	67337
JAMES A FERGUSON	RR2 BOX 202F, 1650 5700 RD, COFFEYVILI	E, KS 67337
DON KENDRICK	110 W THIRD, CANEY, KS 67333	
SEE ATTACHED		
	•	
I further attest that notice of the filing of this application was published in the $\underline{\underline{C}}$	OFFEYVILLE JOURNAL , the official	l county publication
of MONTGOMERY	county. A copy of the affidavit of this publication is attached.	
Signed this 3/31 day of JULY , 20	12	•
_	Jest & Marri	A
	plicant or Duly Authorized Agent	0040
Subscribed and sworn to be	efore me this 3/3' day of JULY	, <u>2012</u>
JENNIFER R. BEAL OFFICIAL MY COMMISSION EXPIRES NO	tary Public K Beal	.
7-20-1/a	Commission Expires: July 20, 20/4	9
See		
		1

4-35S-17E

Notes

Tract in SW NE Roger Dale Cornett and Linda C. Cornett

(19.4 Acres)

1300 North Woodchuck Lane

Skiatook, OK 74070

Tract in NE NE

Bryson P & Ashley R Kitterman

(9.55 Acres)

1697 County Road 5700

Coffeyville, KS 67337

Tract in NW (24.9 Acres)

Kris Miller 5529 CR 1650

Coffeyville, KS 67337

per OR dtd 7.1.10

owner changed

per TO dtd 7.25.11 (TO attached to e-mail for your reference)

Address updated

3-35S-17E

W2 SW less trcts Frances D. Ferguson

P.O. Box 129 Edna, KS 67342

trct in W2SW

James A. Ferguson

1650 CR 5700

Coffeyville, KS 67337

trct in W2SW

School District No. 97

Attn: Joe Ferguson

107 Adams St

Coffeyville, KS 67337-6901

9-35S-17E

NE

Frazee Cattle Co., L.L.C.

(portion)

5560 CR 1425

Coffeyville, KS 67337

10-35S-17E

NW

Roy W. and Kathy L. Woolfolk

(portion)

1462 CR 5700

Coffeyville, KS 67337

DECKER, PAUL M 4-1 - APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS Offset Operators, Unleased Mineral Owners and Landowners acreage (Atlach additional sheets if necessary)

Offset Operators, Unleased Mineral Owners and Landowners ad	creage
(Attach additional sheets if necessary)	
Name:	Legal Description of Leasehold:
SEE ATTACHED	
	And the second s
I hereby certify that the statements made herein are true and correct to the	he hest of my knowledge and helief
Thereby certify that the statements made herein are tide and correct to it	
	De 1 L Marris
	Applicant or Duly Authorized Agent
	1 L
Subscribed and sw	vorn before me this 3/3 ⁺ day of JULY ,2012
JENNIFER R. BEAL	
OFFICIAL MY COMMISSION EXPIRES	Aumilia K Beal
SEAL 100 -110	Notary Public Beal My Commission Expires: July 20, 20/6
The state of the s	Duly 20 20110
	My Commission Expires:

4-35S-17E

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(19.4 Acres)

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Skiatook, OK 74070

per OR dtd 7.1.10

Tract in NE NE (9.55 Acres)

Bryson P & Ashley R Kitterman

1697 County Road 5700

Coffeyville, KS 67337

owner changed

Tract in NW

Kris Miller

(24.9 Acres)

5529 CR 1650

Coffeyville, KS 67337

per TO dtd 7.25.11 (TO attached to e-mail for your reference)

Address updated

3-35S-17E

W2 SW less trcts Frances D. Ferguson

P.O. Box 129 Edna, KS 67342

trct in W2SW

James A. Ferguson

1650 CR 5700

Coffeyville, KS 67337

trct in W2SW

School District No. 97

Attn: Joe Ferguson

107 Adams St

Coffeyville, KS 67337-6901

9-35S-17E

NE

Frazee Cattle Co., L.L.C.

(portion)

5560 CR 1425

Coffeyville, KS 67337

10-35S-17E

NW

Roy W. and Kathy L. Woolfolk

(portion)

1462 CR 5700

Coffeyville, KS 67337

DECKER, PAUL 4-1

SPOT	LEGAL LOCATION	CURR_OPERA
NW NE SW	S3-T35S-R17E	Allenergy, Inc.
SE NE NE	S4-T35S-R17E	Bradley, Teresa and Rick (Residential)
NW NE SW	S3-T35S-R17E	Ferguson, James A.
NW NE SW	S3-T35S-R17E	Ferguson, James A.
SW SW SW	S3-T35S-R17E	Ferguson, James A.
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SW NE	S4-T35S-R17E	Kendrick, Don
SW NE	S4-T35S-R17E	Kendrick, Don
SW NE	S4-T35S-R17E	Kendrick, Don
SW NE	S4-T35S-R17E	Kendrick, Don
SW NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don
SE NE	S4-T35S-R17E	Kendrick, Don

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 2nd 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

2nd day of August, 2012

PENNY L. CASE Notary Public State My Appt. Expires

Notary Public Sedgwick County, Kansas

Printer's Fee: \$139.60

LEGAL PUBLICATION

LEGAL PUBLICATION

PUBLISHED IN THE WICHITA EAGLE
AUGUST 2, 2012 (3199347)

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
Comminging of Production in the
Decker, Paul M 4-1 located in
Montgomery County, Kansas.

TO: All Oil & Gas Producers, Unleased
Mineral Interest Owners, Landowners,
and all persons whomever concerned.
You, and each of you, are nereby notified
that Postrock Midcontinent Production, LLC
has filed an application to commingle the
Riverton, Rowe, Weir, Croweburg, Bevier,
Iron Post, Mulky, Summit and Squirrel
producing formations at the Decker, Paul M
4-1, located in the SW NE NE SE, S4-135S,
R17E, Approximately 2150 FSL & 475 FSEL,
Montgomery County, Kańsas.

Any persons who object to or protest
this application shall be required to tile their
objections or protest with the Conservation
Division of the State Corporation Commission
of the State of Kansas wilnin 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 Konsas.

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
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 (egal
counse) or as individuals, appearing on their
own behalf.

Postrock Midcontinent Production, LLC
210 Park Avenue, Suite 2750.

Oklahoma City, Oklahoma 73102

own behalf.
Postrock Midcontinent Production, LLC
210 Park Avenue, Suite 2750.
Oklahoma City, Oklahoma 73102
(495) 660-7704
A COPY OF THE AFFIDAVIT
PUBLICATION MUST ACCOMPANY A
APPLICATIONS

The Journal Coffeyville Journal



302 W. 8th • 251-3300 • 251-1905 FAX

Affidavit of Publication

Hayley Henderson- Crawford of lawful age, being first duly sworn, deposes, and says, that she is The Classified Representative for THE COFFEYVILLE JOURNAL, that same is a tri-weekly newspaper; that said newspaper prior to the date of the first publication of notice hereinafter referred to and at the present time was and now is admitted to the mail as second class matter in Montgomery County, Kansas. That said newspaper is of general circulation in said county and has been continuously and uninterruptedly published in said county during the period of one year prior to the first publication hereinafter mentioned; that the notice, a true copy of which is hereto attached, was published in the regular and entire issue of each number of said newspaper for. One, consecutive

Day.	
The first publication being August 4. 2012.	
And the last publication being <u>August 4,</u> 2012.	
Carles Ambron Chapt	
$\mathcal{L}_{\mathcal{L}}}}}}}}}}$	
Subscribed and sworn to before me this day of day of	····
20/7	

DENISE A. GATES

Printer's Fee \$68.40

Legal Notice

(First published in The Coffeyville Journal on Saturday, August 4, 2012)

BEFORE THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

NOTICE OF FILING
APPLICATION

Matter of Postrock Midcontinent Production, LLC Application for Commingling of Production in the Decker, Paul M 4-1 located in Montgomery County, Kansas.

Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomever concerned.

You, and each of you, are hereby notified that Midcontinent Postrock Midcontinent Production, LLC has filed an application to commingle the Riverton, Rowe, Weir, Croweburg, Bevier, Iron Post, Mulky, Summit and Squirrel producing formations at the Decker, Paul M 4-1, located in the SW NE NE SE, S4-T35S-R17E, Approximately 2150 FSL & 475 FEL, Montgomery 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 of State of Corporation Commission of the State of Kansas within fifteen (15) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why granting the application may cause waste, violate correlative rights or pollute the natural resources of the State of Kansas.

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

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

Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 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

August 27, 2012

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

RE: Approved Commingling CO081226

Decker, Paul M. 4-1, Sec. 4-T35S-R17E, Montgomery County

API No. 15-125-32089-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on August 27, 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 CO081226 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