



KANSAS CORPORATION COMMISSION 1086607  
OIL & GAS CONSERVATION DIVISION

Form ACO-4  
Form must be typed  
March 2009

APPLICATION FOR COMMINGLING OF *Commingling ID #* **CO081214**  
PRODUCTION (K.A.R. 82-3-123) OR FLUIDS (K.A.R. 82-3-123a)

OPERATOR: License # 33343  
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) 432-4200

API No. 15 - 15-205-26742-00-00  
Spot Description: \_\_\_\_\_  
NE SW SE NE Sec. 29 Twp. 27 S. R. 16  East  West  
2238 Feet from  North /  South Line of Section  
664 Feet from  East /  West Line of Section  
County: Wilson  
Lease Name: VARNER ROY E Well #: 29-2

1. Name and upper and lower limit of each production interval to be commingled:
- |                             |                           |
|-----------------------------|---------------------------|
| Formation: <u>WEIR</u>      | (Perfs): <u>1074-1077</u> |
| Formation: <u>FLEMING</u>   | (Perfs): <u>965-967</u>   |
| Formation: <u>CROWEBURG</u> | (Perfs): <u>929-932</u>   |
| Formation: <u>BEVIER</u>    | (Perfs): <u>913-915</u>   |
| Formation: <u>MULKY</u>     | (Perfs): <u>833-837</u>   |

2. Estimated amount of fluid production to be commingled from each interval:
- |                             |                |                  |                   |
|-----------------------------|----------------|------------------|-------------------|
| Formation: <u>WEIR</u>      | BOPD: <u>0</u> | MCFPD: <u>.5</u> | BWPD: <u>6.67</u> |
| Formation: <u>FLEMING</u>   | BOPD: <u>0</u> | MCFPD: <u>.5</u> | BWPD: <u>6.67</u> |
| Formation: <u>CROWEBURG</u> | BOPD: <u>0</u> | MCFPD: <u>.5</u> | BWPD: <u>6.67</u> |
| Formation: <u>BEVIER</u>    | BOPD: <u>0</u> | MCFPD: <u>.5</u> | BWPD: <u>6.67</u> |
| Formation: <u>MULKY</u>     | BOPD: <u>0</u> | MCFPD: <u>.5</u> | BWPD: <u>6.67</u> |

3. Plat map showing the location of the subject well, all other wells on the subject lease, and all wells on offsetting leases within a 1/2 mile radius of the subject well, and for each well the names and addresses of the lessee of record or operator.
4. Signed certificate showing service of the application and affidavit of publication as required in K.A.R. 82-3-135a.

**For Commingling of PRODUCTION ONLY, include the following:**

5. Wireline log of subject well. Previously Filed with ACO-1:  Yes  No
6. Complete Form ACO-1 (*Well Completion form*) for the subject well.

**For Commingling of FLUIDS ONLY, include the following:**

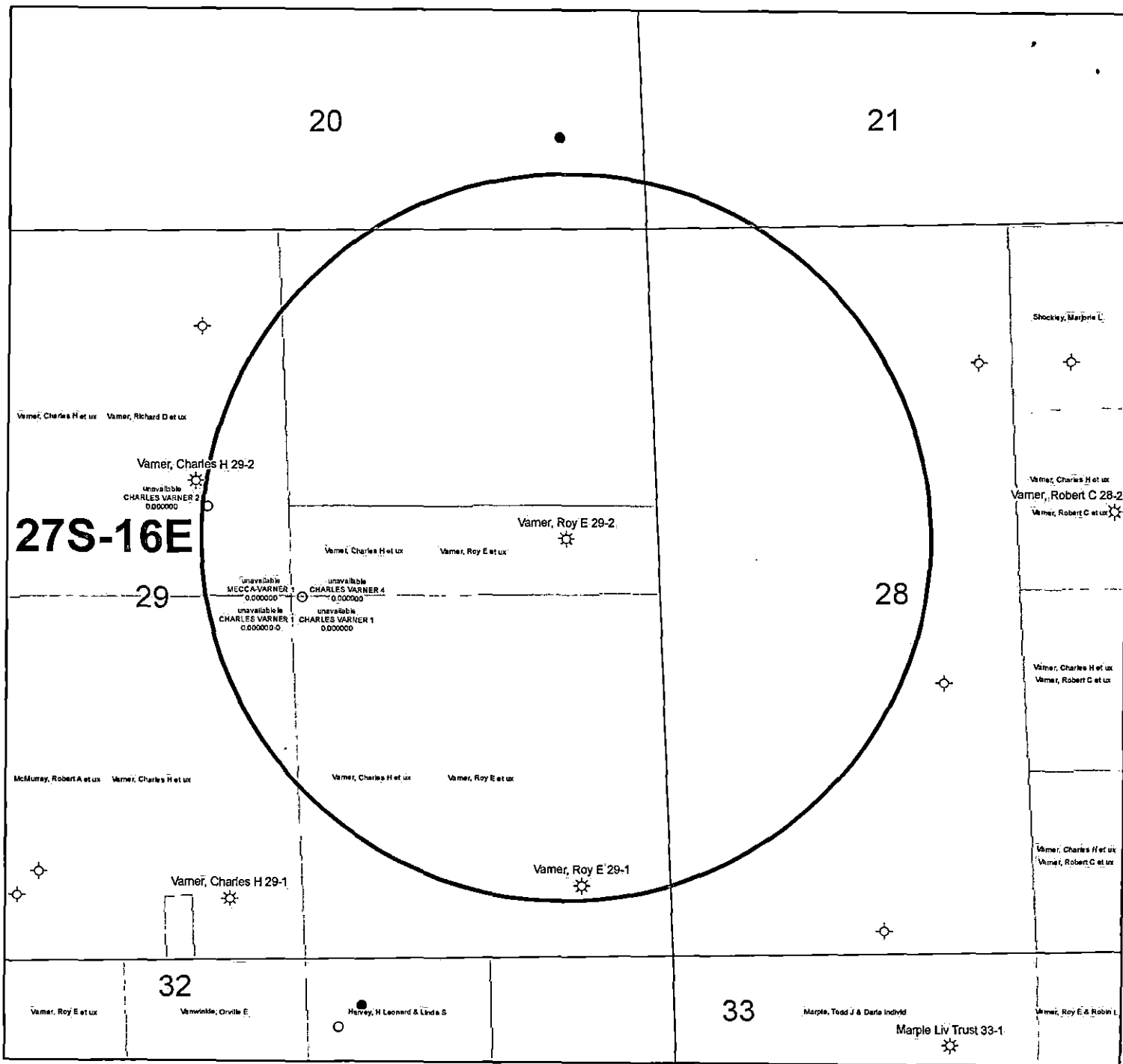
7. Well construction diagram of subject well.
8. Any available water chemistry data demonstrating the compatibility of the fluids to be commingled.

**AFFIDAVIT:** I am the affiant and hereby certify that to the best of my current information, knowledge and personal belief, this request for commingling is true and proper and I have no information or knowledge, which is inconsistent with the information supplied in this application.

Submitted Electronically

|                                       |  |
|---------------------------------------|--|
| <b>KCC Office Use Only</b>            |  |
| <input type="checkbox"/> Denied       | <input checked="" type="checkbox"/> Approved |
| 15-Day Periods Ends: <u>8/29/2012</u> |  |
| Approved By: <u>Rick Hestermann</u>   | Date: <u>08/29/2012</u>                      |

*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 within 15 days of publication of the notice of application.*



**KGS STATUS**

|   |         |
|---|---------|
| ◇ | DA/PA   |
| ⊕ | EOR     |
| ☆ | GAS     |
| △ | INJ/SWD |
| ● | OIL     |
| ✱ | OIL/GAS |
| ○ | OTHER   |

Vamer, Roy E 29-2  
 29-27S-16E  
 1" = 1,000'

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1  
September 1999  
Form Must Be Typed

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

Operator: License # 33344  
Name: Quest Cherokee, LLC  
Address: 211 W. 14th Street  
City/State/Zip: Chanute, KS 66720  
Purchaser: Bluestem Pipeline, LLC  
Operator Contact Person: Jennifer R. Ammann  
Phone: (620) 431-9500  
Contractor: Name: L S Well Service, LLC  
License: 33374  
Wellsite Geologist: Ken Recoy

Designate Type of Completion:  
 New Well  Re-Entry  Workover  
 Oil  SWD  SLOW  Temp. Abd.  
 Gas  ENHR  SIGW  
 Dry  Other (Core, WSW, Expl., Cathodic, etc)

If Workover/Re-entry: Old Well Info as follows:  
Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_  
 Deepening  Re-perf.  Conv. to Enhr./SWD  
 Plug Back \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_  
 Commingled \_\_\_\_\_ Docket No. \_\_\_\_\_  
 Dual Completion \_\_\_\_\_ Docket No. \_\_\_\_\_  
 Other (SWD or Enhr.?) \_\_\_\_\_ Docket No. \_\_\_\_\_

| 6/14/06                           | 6/15/06         | 6/20/06                                 |
|-----------------------------------|-----------------|---|
| Spud Date or<br>Recompletion Date | Date Reached TD | Completion Date or<br>Recompletion Date |

API No. 15 - 205-26742 - 20-00  
County: Wilson  
\_\_\_\_\_ S. 2 Sec. 29 Twp. 27 S. R. 16  East  West  
2310 feet from S  (circle one) Line of Section  
660 feet from  (circle one) W Line of Section

Footages Calculated from Nearest Outside Section Corner:  
(circle one) NE SE NW SW  
Lease Name: Varner, Roy E. Well #: 29-2  
Field Name: Cherokee Basin CBM

Producing Formation: Multiple  
Elevation: Ground: 970 Kelly Bushing: n/a  
Total Depth: 1313 Plug Back Total Depth: 1304.47  
Amount of Surface Pipe Set and Cemented at 22 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set \_\_\_\_\_ Feet  
If Alternate II completion, cement circulated from 1304.47  
feet depth to surface w/ 152 <sup>sq cmt.</sup>  
Att 2 - Dig. 12/1/08

**Drilling Fluid Management Plan**  
(Data must be collected from the Reserve Pit)  
Chloride content \_\_\_\_\_ ppm Fluid volume \_\_\_\_\_ bbls  
Dewatering method used \_\_\_\_\_  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: \_\_\_\_\_  
Lease Name: \_\_\_\_\_ License No.: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
County: \_\_\_\_\_ Docket No.: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: Jennifer R. Ammann  
Title: New Well Development Coordinator Date: 10/11/06

Subscribed and sworn to before me this 11<sup>th</sup> day of October,  
20 06.

Notary Public: Terra Klauman  
Date Commission Expires: 8-4-2010

**TERRA KLAUMAN**  
Notary Public - State of Kansas  
My Aopt. Expires: 8-4-2010

**KCC Office Use ONLY**

Letter of Confidentiality Received  
If Denied, Yes  Date: \_\_\_\_\_  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution

**RECEIVED**  
KANSAS CORPORATION COMMISSION  
**OCT 12 2006**  
CONSERVATION DIVISION  
WICHITA, KS

Operator Name: Quest Cherokee, LLC Lease Name: Vamer, Roy E. Well #: 29-2  
 Sec. 29 Twp. 27 S. R. 16  East  West County: Wilson

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach copy of all Electric Wireline Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken  Yes  No  
 (Attach Additional Sheets)  
 Samples Sent to Geological Survey  Yes  No  
 Cores Taken  Yes  No  
 Electric Log Run  Yes  No  
 (Submit Copy)

Log Formation (Top), Depth and Datum  Sample  
 Name Top Datum  
 See attached

List All E. Logs Run:

Gamma Ray Neutron Log  
 Dual Induction Log  
 Compensated Density/Neutron Log

**CASING RECORD**  New  Used  
 Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|-------------------|-------------------|---------------------------|-------------------|---------------|----------------|--------------|----------------------------|
| Surface           | 11                | 8-5/8"                    | 20                | 22            | "A"            | 5            |                            |
| Production        | 6-3/4             | 4-1/2                     | 10.5#             | 1304.42       | "A"            | 160          |                            |

**ADDITIONAL CEMENTING / SQUEEZE RECORD**

| Purpose:                                | Depth Top Bottom | Type of Cement | #Sacks Used | Type and Percent Additives |
|---|------------------|----------------|-------------|----------------------------|
| <input type="checkbox"/> Perforate      |                  |                |             |                            |
| <input type="checkbox"/> Protect Casing |                  |                |             |                            |
| <input type="checkbox"/> Plug Back TD   |                  |                |             |                            |
| <input type="checkbox"/> Plug Off Zone  |                  |                |             |                            |

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)              | Depth             |
|----------------|--|---|-------------------|
| 4              | 1074-1077/965-967/929-932/913-915  | 400gal 15% HCl w/ 45 lbs 2% acid water, 650lbs water w/ 2% KCl, Blockade, 16000# 20/40 sand | 1074-1077/965-967 |
|                |  |   | 829-832/913-915   |
| 4              | 833-837/824-828  | 400gal 15% HCl w/ 65 lbs 2% acid water, 600lbs water w/ 2% KCl, Blockade, 13800# 20/40 sand | 833-837/824-828   |

| TUBING RECORD | Size   | Set At  | Packer At | Liner Run   |
|---------------|--------|---------|-----------|---|
|               | 2-3/8" | 1082.62 | n/a       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

| Date of First, Resumed Production, SWD or Enhr. | Producing Method  |
|---|---|
| 9/12/06   | <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) |

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|-----------------------------------|-----------|---------|-------------|---------------|---------|
|                                   | n/a       | 7.4mcf  | 31.1bbls    |               |         |

Disposition of Gas **METHOD OF COMPLETION** Production Interval  
 Vented  Sold  Used on Lease  Open Hole  Perf.  Dually Comp.  Commingled  
 (If vented, Submit ACO-18.)  Other (Specify)

L S Well Service, LLC #33374  
543A 22000 Road  
Cherryvale, Kansas 67335  
620-328-4433

Drill Log

Quest Cherokee, LLC

Roy Varner #29-2  
S29, T27, R16  
Wilson Co, KS  
API#205-26742-0000

0-3 DIRT  
3-45' LIME  
45-165 SHALE  
165-185 LIME  
185-228 SHALE  
228-270 LIME  
270-283 SHALE  
283-305 SAND  
305-306 COAL  
306-320 SAND  
320-333 SANDY SHALE  
333-338 LIME  
338-360 SANDY SHALE  
360-440 LIME  
440-444 BLACK SHALE  
444-453 LIME  
453-459 SANDY SHALE  
459-480 LIME  
480-495 SAND  
495-526 LIME  
526-616 SANDY SHALE  
616-626 LIME  
626-646 SANDY SHALE  
646-661 LIME  
661-686 SANDY SHALE  
686-696 SAND  
696-697 COAL  
697-743 SANDY SHALE  
743-745 LIME  
745-746 COAL  
746-750 SHALE  
750-776 LIME PAWNEE  
776-779 BLACK SHALE  
779-794 SANDY SHALE  
794-819 LIME OSWEGO  
819-824 SHALE  
824-830 LIME  
830-832 SHALE  
832-833 COAL  
833-836 SANDY SHALE  
836-851 SAND  
851-857 SANDY SHALE  
857-862 SAND ODOR OIL  
862-909 SAND  
909-910 COAL  
910-923 SANDY SHALE  
923-926 LIME

RECEIVED  
KANSAS CORPORATION COMMISSION  
OCT 12 2006  
CONSERVATION DIVISION  
WICHITA, KS

6-14-06 Drilled 11" hole and set  
22' of 8 5/8" surface casing  
Set with 5 sacks Portland cement

6-15-06 Started drilling 6 3/4" hole

6-15-06 Finished drilling to  
T.D. 1313'

WATER @ 511'

511' SLIGHT BLOW  
711' 3" ON 1/2" ORIFICE  
761' 7" ON 1/2" ORIFICE  
786' 24" ON 1/2" ORIFICE  
825' 80" ON 1/2" ORIFICE  
836' 26" ON 1" ORIFICE  
912' 26" ON 1" ORIFICE  
937' 26" ON 1" ORIFICE  
962' 26" ON 1" ORIFICE  
1037' 33" ON 1" ORIFICE  
1062' 27" ON 1" ORIFICE  
1087' 15" ON 1" ORIFICE  
1212' 15" ON 1" ORIFICE  
1313' 17" ON 1" ORIFICE

L S Well Service, LLC #33374  
543A 22000 Road  
Cherryvale, Kahsas 67335  
620-328-4433

Drill Log  
Quest Cherokee, LLC

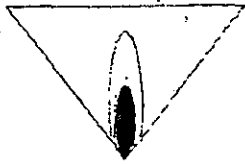
Roy Varner #29-2  
S29, T27, R16  
Wilson Co, KS  
API#205-26742-0000

|           |                  |
|-----------|------------------|
| 926-927   | COAL             |
| 927-960   | SANDY SHALE      |
| 960-961   | COAL             |
| 961-1017  | SANDY SHALE      |
| 1017-1027 | SAND             |
| 1027-1034 | SANDY SHALE      |
| 1034-1035 | COAL             |
| 1035-1042 | SANDY SHALE      |
| 1042-1043 | COAL             |
| 1043-1050 | SANDY SHALE      |
| 1050-1066 | SAND             |
| 1066-1070 | SHALE            |
| 1070-1072 | COAL             |
| 1072-1187 | SAND             |
| 1187-1201 | SANDY SHALE      |
| 1201-1203 | COAL             |
| 1203-1313 | LIME MISSISSIPPI |

T.D. 1313'

# QUEST

Resource Corporation



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

TICKET NUMBER **1477**

FIELD TICKET REF # \_\_\_\_\_

FOREMAN Craig R. ...

## TREATMENT REPORT & FIELD TICKET CEMENT

| DATE         | WELL NAME & NUMBER | SECTION | TOWNSHIP | RANGE | COUNTY |
|--------------|--------------------|---------|----------|-------|--------|
| June 20 2006 | Vanner, Row E 29-2 | 29      | 27       | 16    | Wilson |

| FOREMAN / OPERATOR | TIME IN | TIME OUT | LESS LUNCH | TRUCK # | TRAILER # | TRUCK HOURS | EMPLOYEE SIGNATURE |
|--------------------|---------|----------|------------|---------|-----------|-------------|--------------------|
| Craig R.           | 1:15    | 5:15     | NO         | 902427  |           | 4           | <i>Craig R.</i>    |
| Tim A.             |         | 4:30     |            | 902997  |           | 3.25        | <i>Tim A.</i>      |
| Russel A.          |         | 4:15     |            | 903206  |           | 3           | <i>Russel A.</i>   |
| Joe B.             |         | 6:30     |            | 902139  | 922452    | 5.25        | <i>Joe B.</i>      |
| Leona H.           |         | 6:00     |            | 931415  |           | 4.75        | <i>Leona H.</i>    |

JOB TYPE logblearing HOLE SIZE 6 3/4 HOLE DEPTH 1313 CASING SIZE & WEIGHT 4 1/2 x 12.5  
 CASING DEPTH 1304.47 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 11.5 SLURRY VOL \_\_\_\_\_ WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 0  
 DISPLACEMENT 20.80 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE 4.0 gpm

REMARKS:

Run 1 sack of premium gel and cement to surface. Installed cement head and pump. 1 sack of gel 14 barrel size and 160 sacks of cement to not due to surface. Finished pump pumped wiper plug to bottom. set floe like.

|        |   |                  |
|--------|---|------------------|
| 120442 | 1 | FL 4 1/2 casing  |
| 6      | 1 | neutralizers     |
| 90310  | 2 | w/casing tractor |
| 90370  | 5 | w/casing tractor |

| ACCOUNT CODE | QUANTITY or UNITS | DESCRIPTION OF SERVICES OR PRODUCT        | TOTAL AMOUNT |
|--------------|-------------------|---|--------------|
| 902427       | 4 hr              | Foreman Pickup                            |              |
| 903255       | 3.25 hr           | Cement Pump Truck                         |              |
| 903206       | 3 hr              | Bulk Truck                                |              |
| 1104         | 152 sc            | Portland Cement                           |              |
| 1124         | 1                 | 50/50 POZ-Blend Cement <u>Rate 3"</u>     |              |
| 1126         | 1                 | OWG-Blend Cement <u>w. wiper plug 1/2</u> |              |
| 1110         | 16 sc             | Gilsonite                                 |              |
| 1107         | 1 sc              | Flo-Seal                                  |              |
| 1118         | 2 sc              | Premium Gel                               |              |
| 1215A        | 1 sack            | KCL                                       |              |
| 1111B        | 3 sc              | Sodium-Silicate <u>calcium chloride</u>   |              |
| 1123         | 2005 gals         | City Water                                |              |
| 905157       | 5.25 hr           | Transport Truck                           |              |
| 922452       | 5.25 hr           | Transport Trailer                         |              |
| 931415       | 4.75 hr           | 80 Vac                                    |              |

|    | A  | B   | C                        | D                        | E                        | F                                       | G                        | H   | I  | J         | K                    |
|----|--|---|--------------------------|--------------------------|--------------------------|---|--------------------------|---|--|-----------|----------------------|
| 1  | Produced Fluids #  |   | 1                        | 2                        | 3                        | 4                                       | 5                        |   |  |           |                      |
| 2  | Parameters   | Units   | Input                    | Input                    | Input                    | Input                                   | Input                    |   | Click here to run SSP<br><br>Goal Seek SSP |           | Click                |
| 3  | Select the brines  | Select fluid by checking the box(es),                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/> | Mixed brine:  |  |           | Click                |
| 4  | Sample ID  | Flow 3  |                          |                          |                          |   |                          | Cell H28 is   |  |           | Click                |
| 5  | Date   | 3/19/2012   | 3/4/2012                 | 3/14/2012                | 1/20/2012                | 1/20/2012                               |                          | STP calc. pH.                                       |  |           | Click                |
| 6  | Operator   | PostRock  | PostRock                 | PostRock                 | PostRock                 | PostRock                                |                          | Cells H35-38 are used in mixed brines calculations. |  |           | Click                |
| 7  | Well Name  | Ward Feed   | Ward Feed                | Clinesmith               | Clinesmith               | Clinesmith                              |                          |   | Click                                      |           |                      |
| 8  | Location   | #34-1   | #4-1                     | #5-4                     | #1                       | #2                                      |                          |   | Click                                      |           |                      |
| 9  | Field  | CBM   | CBM                      | Bartles                  | Bartles                  | Bartles                                 |                          |   | Click                                      |           |                      |
| 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) | S/SR (Final-Initial) |
| 11 | K <sup>+</sup> (if not known =0)   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | Saturation Index values                    |           |                      |
| 12 | Mg <sup>2+</sup>   | (mg/l)  | 1,096.00                 | 872.00                   | 1,200.00                 | 953.00                                  | 858.00                   | 995.91  | Calcite                                    |           |                      |
| 13 | 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                 |
| 14 | Sr <sup>2+</sup>   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | Barite                                     |           |                      |
| 15 | Ba <sup>2+</sup>   | (mg/l)  |                          |                          |                          |   |                          | 0.00  |  |           |                      |
| 16 | Fe <sup>2+</sup>   | (mg/l)  | 40.00                    | 21.00                    | 18.00                    | 82.00                                   | 90.00                    | 50.21   | Halite                                     |           |                      |
| 17 | Zn <sup>2+</sup>   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | -1.77                                      | -1.80     | -0.03                |
| 18 | Pb <sup>2+</sup>   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | Gypsum                                     |           |                      |
| 19 | Cl <sup>-</sup>  | (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  | Hemihydrate                                |           |                      |
| 21 | F <sup>-</sup>   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | -3.96                                      | -3.90     | 0.06                 |
| 22 | Br <sup>-</sup>  | (mg/l)  |                          |                          |                          |   |                          | 0.00  | Anhydrite                                  |           |                      |
| 23 | SiO <sub>2</sub>   | (mg/l) SiO <sub>2</sub>   |                          |                          |                          |   |                          | 0.00  | -3.47                                      | -3.36     | 0.12                 |
| 24 | HCO <sub>3</sub> Alkalinity**  | (mg/l as HCO <sub>3</sub> )                                     | 190.00                   | 234.00                   | 259.00                   | 268.00                                  | 254.00                   | 241.03  | Celestite                                  |           |                      |
| 25 | CO <sub>3</sub> Alkalinity   | (mg/l as CO <sub>3</sub> )                                      |                          |                          |                          |   |                          |   |  |           |                      |
| 26 | Carboxylic acids**   | (mg/l)  |                          |                          |                          |   |                          | 0.00  | Iron Sulfide                               |           |                      |
| 27 | Ammonia  | (mg/L) NH <sub>3</sub>  |                          |                          |                          |   |                          | 0.00  | -0.16                                      | -0.22     | -0.06                |
| 28 | Borate   | (mg/L) H <sub>3</sub> BO <sub>3</sub>                           |                          |                          |                          |   |                          | 0.00  | Zinc Sulfide                               |           |                      |
| 29 | TDS (Measured)   | (mg/l)  |                          |                          |                          |   |                          | 72781   |  |           |                      |
| 30 | Calc. Density (STP)  | (g/ml)  | 1.038                    | 1.051                    | 1.050                    | 1.048                                   | 1.045                    | 1.047   | Calcium fluoride                           |           |                      |
| 31 | CO <sub>2</sub> Gas Analysis   | (%)   | 19.97                    | 18.76                    | 22.41                    | 35.53                                   | 33.79                    | 26.16   |  |           |                      |
| 32 | H <sub>2</sub> S Gas Analysis***   | (%)   | 0.0289                   | 0.0292                   | 0.0296                   | 0.0306                                  | 0.0151                   | 0.0269  | Iron Carbonate                             |           |                      |
| 33 | Total H <sub>2</sub> Saq   | (mgH <sub>2</sub> S/l)  | 1.00                     | 1.00                     | 1.00                     | 1.00                                    | 0.50                     | 0.90  | -0.74                                      | -0.51     | 0.23                 |
| 34 | pH, measured (STP)   | pH  | 5.67                     | 5.76                     | 5.72                     | 5.54                                    | 5.55                     | 5.63  | Inhibitor needed (mg/L)                    |           |                      |
|    |  | 0-CO <sub>2</sub> %+Alk,<br>1-pH+Alk,<br>2-CO <sub>2</sub> %+pH |                          |                          |                          |   |                          |   | Calcite                                    | NTMP      |                      |
| 35 | Choose one option to calculate SI?   |   | 0                        | 0                        | 0                        | 0                                       | 0                        |   |  |           |                      |
| 36 | Gas/day(thousand cf/day)   | (Mcf/D)   |                          |                          |                          |   |                          | 0   | 0.00                                       | 0.00      |                      |
| 37 | Oil/Day  | (B/D)   | 0                        | 0                        | 1                        | 1                                       | 1                        | 4   | Barite                                     | BHPMP     |                      |
| 38 | Water/Day  | (B/D)   | 100                      | 100                      | 100                      | 100                                     | 100                      | 500   | 0.00                                       | 0.00      |                      |
| 39 | For mixed brines, enter values for temperatures and pressures in Cells (H40-H43) |   |                          |                          |                          |   |                          |   | (Enter H40-H43)                            |           | pH                   |
| 40 | Initial T  | (F)   | 66.0                     | 71.0                     | 70.0                     | 41.0                                    | 49.0                     | 60.0  | 5.69                                       | 5.60      |                      |
| 41 | Final T  | (F)   | 66.0                     | 71.0                     | 70.0                     | 41.0                                    | 49.0                     | 89.0  | Viscosity (CentiPoise)                     |           |                      |
| 42 | Initial P  | (psia)  | 25.0                     | 25.0                     | 25.0                     | 25.0                                    | 25.0                     | 25.0  | 1.196                                      | 0.826     |                      |
| 43 | Final P  | (psia)  | 25.0                     | 25.0                     | 25.0                     | 25.0                                    | 25.0                     | 120.0   | Heat Capacity (cal/ml°C)                   |           |                      |
| 44 | Use TP on Calcite sheet?   | 1-Yes;0-No  |                          |                          |                          |   |                          |   | 0.955                                      | 0.959     |                      |
| 45 | API Oil Grav.  | API grav.   |                          |                          |                          |   |                          | 30.00   | Inhibitor needed (mg/L)                    |           |                      |
| 46 | Gas Sp.Grav.   | Sp.Grav.  |                          |                          |                          |   |                          | 0.60  | Gypsum                                     | HDTMP     |                      |
| 47 | MeOH/Day   | (B/D)   | 0                        |                          |                          |   |                          | 0   | 0.00                                       | 0.00      |                      |
| 48 | MEG/Day  | (B/D)   | 0                        |                          |                          |   |                          | 0   | Anhydrite                                  | HDTMP     |                      |
| 49 | Conc. Multiplier   |   |                          |                          |                          |   |                          |   | 0.00                                       | 0.00      |                      |
| 50 | H <sup>+</sup> (Strong acid) <sup>†</sup>  | (N)   |                          |                          |                          |   |                          |   |  |           |                      |
| 51 | OH <sup>-</sup> (Strong base) <sup>†</sup>                                       | (N)   |                          |                          |                          |   |                          |   |  |           |                      |
| 52 | Quality Control Checks at STP:   |   |                          |                          |                          |   |                          |   |  |           |                      |
| 53 | H <sub>2</sub> S Gas   | (%)   |                          |                          |                          |   |                          |   |  |           |                      |
| 54 | Total H <sub>2</sub> Saq (STP)   | (mgH <sub>2</sub> S/l)  |                          |                          |                          |   |                          |   |  |           |                      |
| 55 | pH Calculated  | (pH)  |                          |                          |                          |   |                          |   |  |           |                      |
| 56 | PCO <sub>2</sub> Calculated  | (%)   |                          |                          |                          |   |                          |   |  |           |                      |
| 57 | Alkalinity Calculated  | (mg/l) as HCO <sub>3</sub>                                      |                          |                          |                          |   |                          |   |  |           |                      |
| 58 | ΣCations=  | (equiv./l)  |                          |                          |                          |   |                          |   |  |           |                      |
| 59 | ΣAnions=   | (equiv./l)  |                          |                          |                          |   |                          |   |  |           |                      |
| 60 | Calc TDS=  | (mg/l)  |                          |                          |                          |   |                          |   |  |           |                      |
| 61 | Inhibitor Selection  | Input   | Unit                     | #                        | Inhibitor                | Unit Converter (From metric to English) |                          | Value   |  |           |                      |
| 62 | Protection Time  | 120   | min                      | 1                        | NTMP                     | From Unit                               | To Unit                  | Value   |  |           |                      |
| 63 | Have ScaleSoftMizer  |   |                          | 2                        | BHPMP                    | °C                                      | °F                       | 80  |  |           | 176                  |
| 64 | pick inhibitor for you?  | 1   | 1-Yes;0-No               | 3                        | PAA                      | m <sup>3</sup>                          | ft <sup>3</sup>          | 100   |  |           | 3,531                |
| 65 | If No, inhibitor # is:   | 4   | #                        | 4                        | DTPMP                    | m <sup>3</sup>                          | bbl(42 US gal)           | 100   |  |           | 629                  |
| 66 | If you select Mixed,   |   |                          | 5                        | PPCA                     | MPa                                     | psia                     | 1,000   |  |           | 145,074              |
| 67 | 1 <sup>st</sup> Inhibitor # is:  | 1   | #                        | 6                        | SPA                      | Bar                                     | psia                     | 496   |  |           | 7,194                |
| 68 | % of 1 <sup>st</sup> Inhibitor is:   | 50  | %                        | 7                        | HEDP                     | Torr                                    | psia                     | 10,000  |  |           | 193                  |
| 69 | 2 <sup>nd</sup> Inhibitor # is:  | 2   | #                        | 8                        | HDTMP                    | Gal                                     | bbl(42 US gal)           | 10,000  |  |           | 238                  |
| 70 | Display act. coeffs?   | 0   | 1-Yes;0-No               | 9                        | Average                  | Liters                                  | bbl(42 US gal)           | 10,000  |  |           | 63                   |
| 71 |  |   |                          | 10                       | Mixed                    |   |                          |   |  |           |                      |



## 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

| Component (mg/L)         | Ratio       |             |             |             |            | Mixed Brine |
|--------------------------|-------------|-------------|-------------|-------------|------------|-------------|
|                          | 20% Brine 1 | 20% Brine 2 | 20% Brine 3 | 20% Brine 4 | 20 Brine 5 |             |
| 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

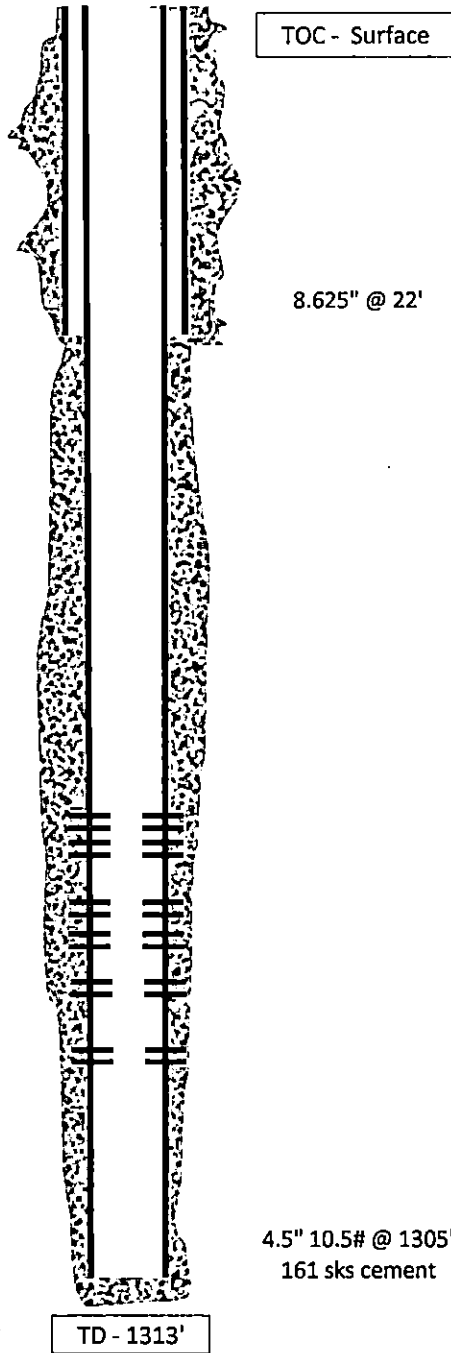
|             |     |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|
| Calcite     | N/A | N/A | N/A | N/A | N/A | N/A |
| Gypsum      | N/A | N/A | N/A | N/A | N/A | N/A |
| Hemihydrate | N/A | N/A | N/A | N/A | N/A | N/A |
| Anhydrite   | N/A | N/A | N/A | N/A | N/A | 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 |



## Wellbore Schematic

**WELL:** Varner, Roy E 29-2  
**SSI:** 615360  
**API:** 15-205-26742-00-00  
**LOCATION:** SE NE Secc. 29-27S-16E  
**COUNTY:** Wilson  
**STATE:** Kansas

|              |  |
|--------------|--|
| Casing       | 8.625" @ 22'<br>4.5" 10.5# J-55, 4.05" ID w/ 0.0159 bbl/ft capacity @ 1305'  |
| Perforations | Original Perfs: 7/5/2006<br>- Weir 1074-1077 (13)<br>- Fleming 965-967 (9)<br>- Croweburg 929-932 (13)<br>- Bevier 913-915 (9)<br>- Mulky 833-837 (17)<br>- Summit 824-828 (17)  |
| Completions  | Spud Date: 6/14/2006<br>Completion date: 7/5/2006<br>Weir/Flem/Crowe/Bevier:<br>- 16000# 20/40<br>- 400 gal 15%<br>- 850 bbls<br>- 14 bpm<br>Mulky/Summit:<br>- 13800# 20/40<br>- 400 gal 15%<br>- 600 bbls<br>- 14bpm |





**AFFIDAVIT**

STATE OF KANSAS \  
- SS.  
County of Sedgwick /

Mark Fletchall, of lawful age, being first duly sworn, depose 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 19th of

July A.D. 2012, with

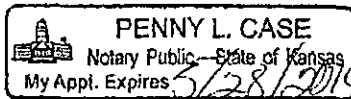
subsequent publications being made on the following dates:

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

*Mark Fletchall*

Subscribed and sworn to before me this

19th day of July, 2012



*Penny L. Case*  
Notary Public Sedgwick County, Kansas

Printer's Fee : \$132.40

**LEGAL PUBLICATION**  
PUBLISHED IN THE WICHITA EAGLE  
JULY 19, 2012 (3196748)  
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  
Varner, Roy E 29-2 located in Wilson  
County, Kansas.  
TO: All Oil & Gas Producers, Unleased Mineral  
Interest Owners, Landowners, and all  
persons whomsoever concerned.  
You, and each of you, are hereby notified  
that Postrock Midcontinent Production, LLC  
has filed an application to commingle the Weir,  
Fleming, Crowburg, Bawler, Mucky, Summit  
and Squirrel producing formations of the  
Varner, Roy E 29-2, located in the S2 SE NE,  
S29-T27S-R16E, Approximately 2238 FNL &  
664 FEL, Wilson County, Kansas.  
Any persons who object to or protest  
this application shall be required to file their  
objections or protest with the Conservation  
Division of the State Corporation Commission  
of the State of Kansas within fifteen (15)  
days from the date of this publication. These  
protests shall be filed pursuant to Commission  
regulations and must state specific reasons  
why granting the application may cause waste,  
violate correlative rights or pollute the natural  
resources of the State of Kansas.  
All persons interested or concerned shall  
take notice of the foregoing and shall govern  
themselves accordingly. All persons 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 in person or through proper  
legal counsel or as individuals, appearing on their  
own behalf.  
Postrock Midcontinent Production, LLC  
110 Park Avenue, Suite 2750  
Oklahoma City, Oklahoma 73102  
(405) 648-7164  
**A COPY 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 19th day of July, 2012  
2nd publication was made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_  
3rd publication was made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_  
4th publication was made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_  
5th publication was made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_  
6th publication was made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

TOTAL PUBLICATION FEE: \$ 3927

(Signed) Joseph S. Relph

Subscribed and sworn to before me, this 20th day of July, 2012

Rita M. Relph (Notary Public)

My commission expires Aug. 30, 2014

(Published in the Wilson County Citizen on Thursday, July 19, 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 Commencing of Production in the Varner, Roy E 29-2 located in Wilson County, Kansas.  
TO: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomsoever concerned.  
You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has filed an application to commingle the Varner, Fleming, Crowburg, Bewler, Malky, Summit and Squirrel producing formations at the Varner, Roy E 29-2, located in the SE SE NE, S29-T27S-R16E, Approximately 2236 FNL & 664 FEL, Wilson County, Kansas.  
Any persons who object to or protest this application shall be required to file their objections or protest with the Conservation Division of the State Corporation Commission of the State of Kansas within fifteen (15) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why granting the application may cause waste, violate correlative rights or pollute the natural resources of the State of Kansas.  
All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly. All person and/or companies wishing to protest this application are required to file a written protest with the Conservation Division of the Kansas Oil and Gas Commission.  
Upon the receipt of any protest, the Commission will convene a hearing and protestants will be expected to enter an appearance either through proper legal counsel or as individuals, appearing on their own behalf.  
Postrock Midcontinent Production, LLC  
210 Park Avenue, Suite 2750  
Oklahoma City, Oklahoma 73102  
(405) 690-7704  
44 1 cpy



**Affidavit of Notice Served**

Re: Application for: APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS ACO-4

Well Name: VARNER, ROY E 29-2 Legal Location: S2SENE S29-T27S-R16E

The undersigned hereby certifies that he / she is a duly authorized agent for the applicant, and that on the day 14<sup>th</sup> of AUGUST, 2012, a true and correct copy of the application referenced above was delivered or mailed to the following parties:

*Note: A copy of this affidavit must be served as a part of the application.*

| Name                       | Address (Attach additional sheets if necessary) |
|----------------------------|---|
| DART CHEROKEE BASIN, LLC   | 600 DART RD., PO BOX 177, MASON, MI 48854       |
| H & M PRODUCTION LLC       | 7230 W 162ND ST., STE A, STILWELL, KS 66085     |
| SPARTAN OPERATING CO., LLC | 915 NORTH WASHINGTON AVE, LANSING, MI 48906     |

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.

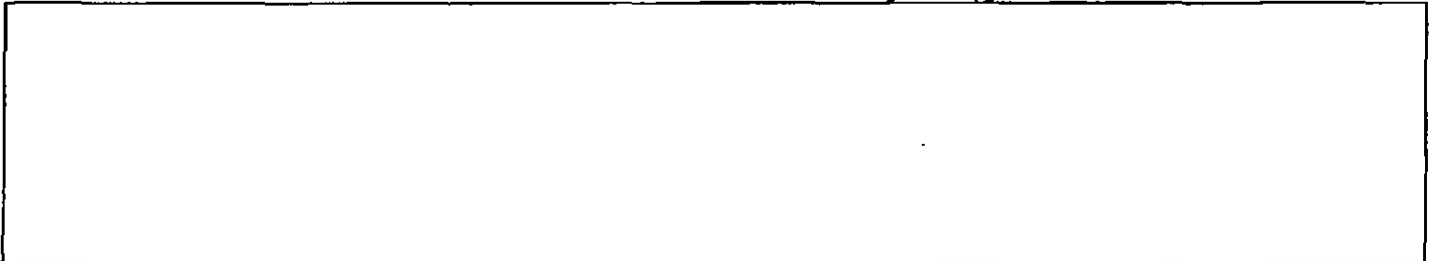
Signed this 14<sup>th</sup> day of AUGUST, 2012

[Signature]  
Applicant or Duly Authorized Agent

Subscribed and sworn to before me this 14<sup>th</sup> day of AUGUST, 2012



[Signature]  
Notary Public  
My Commission Expires: July 20, 2016





**VARNER, ROY E 29-2**

**20,21,28,29-27S-16E**

*all unleased tracts*

Dart Cherokee Basin, LLC  
600 Dart Rd., P.O. Box 177  
Mason, MI 48854

H & M Productions, LLC  
7230 W. 162nd St., Ste. A  
Stilwell, KS 66085

Spartan Operating Co., LLC  
915 North Washington Ave.  
Lansing, MI 48906



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 29 , 2012

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

RE: Approved Commingling CO081214  
Varner, Roy E. 29-2, Sec.29-T27S-R16E, Wilson County  
API No. 15-205-26742-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on August 14, 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 Weir 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 CO081214 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