



KANSAS CORPORATION COMMISSION 1214172  
OIL & GAS CONSERVATION DIVISION

Form ACO-4  
Form must be typed  
March 2009

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

OPERATOR: License # \_\_\_\_\_ API No. 15 - \_\_\_\_\_  
Name: \_\_\_\_\_ Spot Description: \_\_\_\_\_  
Address 1: \_\_\_\_\_ - - - - - Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
Address 2: \_\_\_\_\_ Feet from  North /  South Line of Section  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_ Feet from  East /  West Line of Section  
Contact Person: \_\_\_\_\_ County: \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

1. 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 each interval:  
Formation: \_\_\_\_\_ BOPD: \_\_\_\_\_ MCFPD: \_\_\_\_\_ BWPD: \_\_\_\_\_  
Formation: \_\_\_\_\_ BOPD: \_\_\_\_\_ MCFPD: \_\_\_\_\_ BWPD: \_\_\_\_\_  
Formation: \_\_\_\_\_ BOPD: \_\_\_\_\_ MCFPD: \_\_\_\_\_ BWPD: \_\_\_\_\_  
Formation: \_\_\_\_\_ BOPD: \_\_\_\_\_ MCFPD: \_\_\_\_\_ BWPD: \_\_\_\_\_  
Formation: \_\_\_\_\_ BOPD: \_\_\_\_\_ MCFPD: \_\_\_\_\_ BWPD: \_\_\_\_\_

3. Plat map showing the location of the subject well, all other wells on the subject 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:**

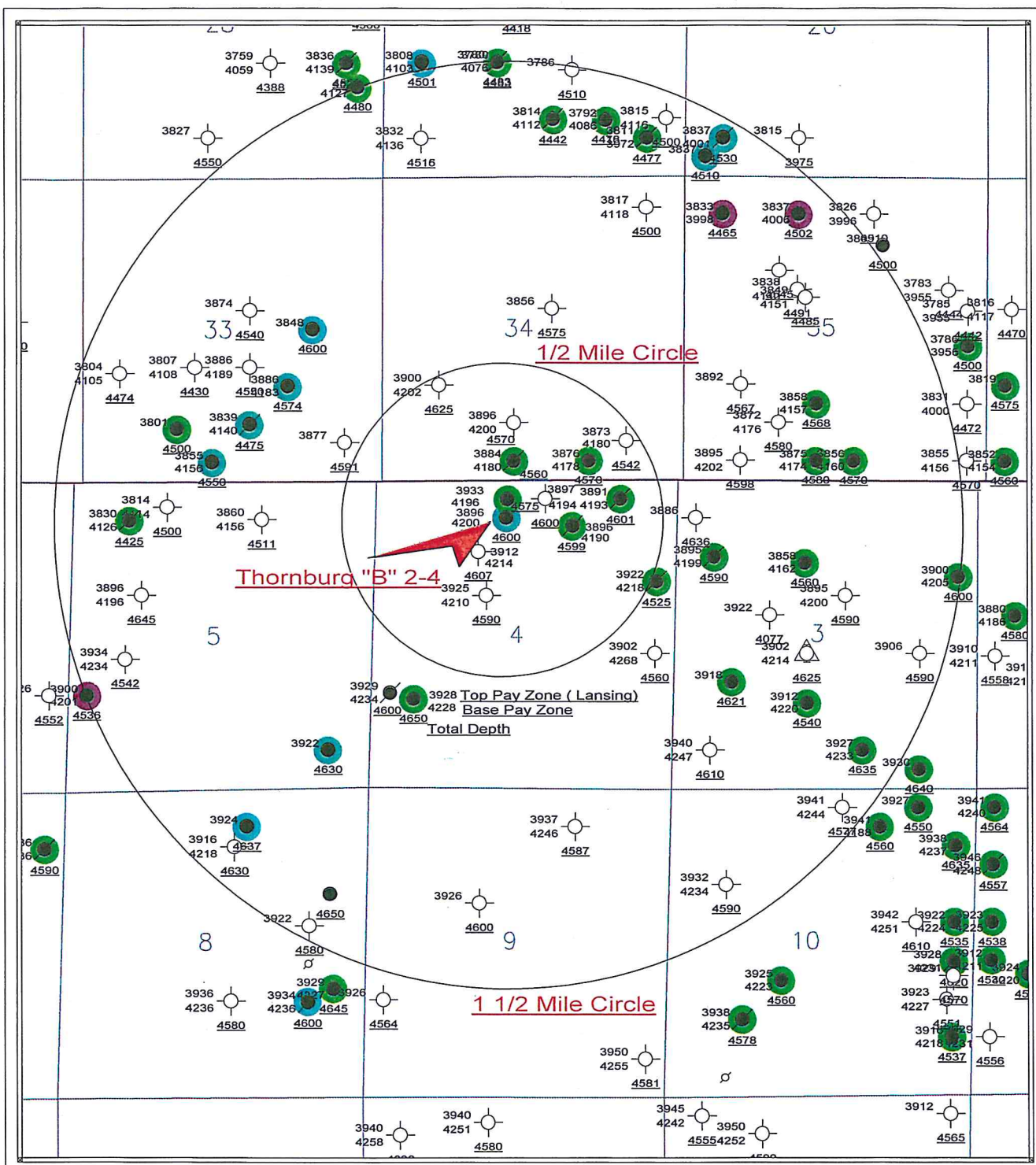
- 7. Well construction diagram of subject well.
- 8. Any available water chemistry data demonstrating the compatibility of the fluids to be commingled.

**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

**KCC Office Use Only**  
 Denied  Approved  
15-Day Periods Ends: \_\_\_\_\_  
Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

*Protests may be filed by any party having a valid interest in the application. Protests must be in writing and comply with K.A.R. 82-3-135b and must be filed within 15 days of publication of the notice of application.*



**LEGEND**

- Lansing Production
- Fort Scott Production
- Mississippi Production

**MULL DRILLING COMPANY, INC.**  
WICHITA, KANSAS

Thornburg "B" #2-4  
Production Plat/Base Map

erm	Ness Co., KS	June 6, 2013
2 inches = 1 mile		



**DRILLING COMPANY, INC.**  
WICHITA, KANSAS

**ATTACHMENT TO ACO-4**

**APPLICATION FOR COMMINGLING OF PRODUCTION**

**Signed Certificate of Notice to Offset Operators and Unleased Mineral Holders**

**Mull Drilling Company, Inc.  
Thornburg "B" #2-4  
W/2 E/2 NE/4 NW/4 Section 4-16S-26W  
Ness County, Kansas  
API No. 15-135-25581-00-00**

Names and addresses of each operator or lessee of record and each unleased mineral owner within one half mile of the subject well:

All Section 4-16S-26W

Mull Drilling Company, Inc.

NE/4 Section 5-16S-26W

Liberty Energy, LLC  
175 Berkeley Street  
Boston MA 02116

Black Bear Properties, LLC  
13927 Quail Point Drive  
Oklahoma City OK 73118

GHK Exploration, LP  
6305 Waterford Blvd, Suite 300  
Oklahoma City OK 73118

Sourcerock, LLC/JCB Investments LLC  
639 Loyola Avenue Suite 2775  
New Orleans LA 70113

Eufaula Energy LLC  
12901 N Western Avenue  
Oklahoma City OK 73114

Michael P. Cross, Inc.  
3225 Oak Hollow Road  
Oklahoma City OK 73120

Tier Hydrocarbon Exploration LLC  
9106 N. Kelley Ave.  
Oklahoma City OK 73131

Mull Drilling Company, Inc.'s Thornburg "B" #2-4  
W/2 E/2 NE/4 NW/4 Section 4-16S-26W  
Ness County, Kansas  
Page 2

SE/4 Section 33-15S-26W

Daystar Petroleum, Inc.  
1321 W. 93<sup>rd</sup> Street N.  
PO Box 360  
Valley Center KS 67147-0360

SW/4 34-15S-26W

SEP Holdings II, LLC  
1111 Bagby, Suite 1800  
Houston TX 77002

SE/4 SE/4 34-15S-26W

Cecil L. Muchmore and Neoma E. Muchmore, Trustees of  
the Muchmore Family Revocable Living Trust  
30 E. Pamela Road  
Arcadia CA 91006

SW/4 SE/4 Section 34-15S-26W

Pintail Petroleum LTD  
225 N. Market, Ste 300  
Wichita KS 67202

Copy of the ACO-4 was mailed to the above listed companies/individuals on July 31, 2014.

Signed this 31st day of July, 2014.

MULL DRILLING COMPANY, INC.



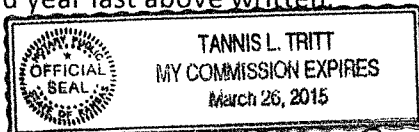
Risa Carter  
Production Technician

STATE OF KANSAS

ACKNOWLEDGEMENT FOR INDIVIDUAL

COUNTY OF SEDGWICK

Before me, the undersigned, a Notary Public, within and for said county and state, on this 31st day of July, 2014, personally appeared Risa Carter, Production Technician of Mull Drilling Company, Inc., to me personally known to be the identical person who executed the within and foregoing Certificate of Service Form and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth. **IN WITNESS WHEREOF**, I have hereunto set my hand and official seal the day and year last above written.



Tannis L. Tritt, Notary Public

My commission expires: 3.26.15

First published in the  
Ness County News,  
Thursday, August 7,  
2014

**BEFORE THE STATE  
CORPORATION OF  
THE STATE OF KANSAS  
NOTICE OF FILING  
APPLICATION**

Re: Mull Drilling Com-  
pany, Inc. -- Application  
for order to permit com-  
mingling of production  
of the  
Thornburg B #2-4, lo-  
cated in Ness County,  
Kansas.

To: All Oil & Gas Pro-  
ducers, Unleased Min-  
eral Interest Owners,  
Landowners, and all  
persons whosever  
concerned.

You, and each of you,  
are hereby notified that  
Mull Drilling Company,  
Inc. has filed an appli-  
cation to commingle  
production of the Mis-  
sissippi and Lansing  
Kansas City formation  
on the  
Thornburg B #2-4, lo-  
cated SW NE NE NW  
Section 4-16S-26W,  
Ness County, Kansas.

Any persons who object  
to or protest this appli-  
cation shall be required  
to file their objections  
or protests with the  
Conservation Division  
of the State Corpora-  
tion Commission of the  
State of Kansas within  
fifteen (15) days from  
the date of the publi-  
cation. These protests  
shall be filed pursuant  
to Commission regu-  
lations and must state  
specific reasons why  
the grant of the applica-  
tion may cause waste,  
violate correlative rights  
or pollute the natural re-  
sources of the state of  
Kansas. If no protests  
are received, this ap-  
plication may be grant-  
ed through a summary  
proceeding. If valid pro-  
tests are received, this  
matter will be set for  
hearing.

All persons interested  
or concerned shall take  
notice of the foregoing  
and shall govern them-  
selves accordingly.

Mull Drilling Company,  
Inc.  
1700 N. Waterfront  
Parkway, Building 1200  
Wichita, KS 67206  
316-264-6366

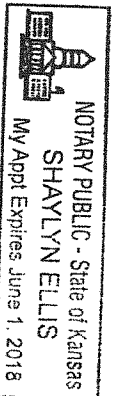
STATE OF KANSAS, COUNTY OF NESS, ss:

Jerry Clarke, being first duly sworn, Deposes and says: that he is Publisher of  
Ness County News, a weekly newspaper, published and printed in Ness City, State  
of Kansas, and published in and of general circulation in Ness County, Kansas, with  
a general paid circulation on a weekly basis in Ness County, Kansas, and that said  
newspaper is not a trade, religious or fraternal publication.

Said newspaper is a weekly published at least 50 times a year; has been so pub-  
lished continuously and uninterruptedly in said county and state for a period of more  
than five years prior to the first publication of said notice; and has been admitted at  
the post office of Ness City, in said County as second class mail matter.

That the attached notice is a true copy thereof and was published in the regular  
and entire issue of said newspaper for \_\_\_\_\_ consecutive  
weeks, the first publication thereof being made as aforesaid on the \_\_\_\_\_ day  
of August, 2014, with subsequent publications being made  
on the following dates:  
\_\_\_\_\_, 20\_\_\_\_\_, 20\_\_\_\_\_  
\_\_\_\_\_, 20\_\_\_\_\_, 20\_\_\_\_\_  
\_\_\_\_\_, 20\_\_\_\_\_, 20\_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of August, 2014



Jerry Clarke, Jerry Clarke, editor  
Shaylyn Ellis, Notary Public.

Publication Fee \$ 43.20  
Additional Copies @ \$ \_\_\_\_\_  
Total Publication Fees \$ 43.20

Filed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Attached Proof Of Publication approved this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
District Magistrate Judge

Filed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Clerk of the District Court.

Attached Proof Of Publication approved this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Judge Twenty-fourth Judicial District.

**AFFIDAVIT**

STATE OF KANSAS \
- SS.
County of Sedgwick /

Mark Fletchall, of lawful age, being first duly sworn, deposes 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 4th of

August A.D. 2014, 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

4th day of August, 2014



*JRB*

Notary Public Sedgwick County, Kansas

Printer's Fee : **\$152.80**

**LEGAL PUBLICATION**  
PUBLISHED IN THE WICHITA EAGLE  
AUGUST 4, 2014 (3312300)  
BEFORE THE STATE CORPORATION  
COMMISSION OF THE STATE OF KANSAS  
NOTICE OF FILING APPLICATION  
Re: Mull Drilling Company, Inc. - Application for order to permit commingling of production of the Thornburg B 2-4, located in Ness County, Kansas.  
To: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whosoever concerned. You, and each of you, are hereby notified that Mull Drilling Company, Inc. has filed an application to commingle production of the Mississippian and Lansing Kansas City formation on the Thornburg B 2-4, located SW NE NE NW Section 4-16S-26W, Ness County, Kansas. Any persons who object to or protest this application shall be required to file their objections or protests with the Conservation Division of the State Corporation Commission of the State of Kansas within fifteen (15) days from the date of the publication. These protests shall be files pursuant to Commission regulations and must state specific reasons why the grant of the application may cause waste, violate correlative rights or pollute the natural resources of the state of Kansas. If no protests are received, this application may be granted through a summary proceeding. If valid protests are received, this matter will be set for hearing. All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly.  
Mull Drilling Company, Inc.  
1700 N. Waterfront Parkway, Building 1200  
Wichita, KS 67206  
316-264-6366



**DRILLING COMPANY, INC.**  
**WICHITA, KANSAS**

**Proposed Wellbore Configuration**

Date:	7/18/2014
Well Name:	Thornburg B #2-4
Location:	SW NE NE NW
	Section 4-T16S-R26W
County:	Ness
State:	Kansas
API:	15-135-25581
KB:	2609'
GL:	2604'
Spud Date:	5/3/2013

8-5/8" set at 211'  
Cmt to surface with 165 sks.

Port Collar at 2031'  
Cmt to surface with 170 sks.

Top of Cement at 3580'

LKC perms at 4088'-4132'

Mississippi perms at 4496'-4514'

5-1/2", 17# csg set at 4597'  
Cmt with 150 sks. 50/50 Pozmix



# MITCHELL ANALYTICAL LABORATORY

2638 Faudree  
Odessa, Texas 79765-8538  
561-5579

Company: **Water Analysis**

Well Number: Thornburg B #2-4	Sample Temp: 70
Lease: Mull Drilling	Date Sampled: 7/21/2014
Location:	Sampled by: Baten Consulting
Date Run: 7/31/2014	Employee #:
Lab Ref #: 14-jul-w57345	Analyzed by: GR

### *Dissolved Gases*

		Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide (H <sub>2</sub> S)		.00	16.00	.00
Carbon Dioxide (CO <sub>2</sub> )	<b>NOT ANALYZED</b>			
Dissolved Oxygen (O <sub>2</sub> )	<b>NOT ANALYZED</b>			

### *Cations*

Calcium (Ca <sup>++</sup> )		3,521.52	20.10	175.20
Magnesium (Mg <sup>++</sup> )		912.56	12.20	74.80
Sodium (Na <sup>+</sup> )		39,875.96	23.00	1,733.74
Barium (Ba <sup>++</sup> )	<b>NOT ANALYZED</b>			
Manganese (Mn <sup>+</sup> )		.68	27.50	.02
Strontium (Sr <sup>++</sup> )	<b>NOT ANALYZED</b>			

### *Anions*

Hydroxyl (OH <sup>-</sup> )		.00	17.00	.00
Carbonate (CO <sub>3</sub> <sup>=</sup> )		.00	30.00	.00
BiCarbonate (HCO <sub>3</sub> <sup>-</sup> )		73.32	61.10	1.20
Sulfate (SO <sub>4</sub> <sup>=</sup> )		1,800.00	48.80	36.89
Chloride (Cl <sup>-</sup> )		69,075.90	35.50	1,945.80
Total Iron (Fe)		2.29	18.60	.12
Total Dissolved Solids		115,262.23		
Total Hardness as CaCO <sub>3</sub>		12,545.30		
Conductivity MICROMHOS/CM		144,800		

pH 6.490	Specific Gravity 60/60 F.	1.080
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CaSO<sub>4</sub> Solubility @ 80 F. 56.88MEq/L, CaSO<sub>4</sub> scale is unlikely

#### *CaCO<sub>3</sub> Scale Index*

70.0	-.735	100.0	-.415	130.0	.145
80.0	-.645	110.0	-.165	140.0	.145
90.0	-.415	120.0	-.165	150.0	.485

*Water Analysis*



# MITCHELL ANALYTICAL LABORATORY

2638 Faudree  
Odessa, Texas 79765-8538  
561-5579

Company: **Water Analysis**

Well Number:	Thornburg C #1-4	Sample Temp:	70
Lease:	Mull Drilling	Date Sampled:	7/21/2014
Location:		Sampled by:	Baten Consulting
Date Run:	7/31/2014	Employee #:	
Lab Ref #:	14-jul-w57344	Analyzed by:	GR

### *Dissolved Gases*

		Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide (H <sub>2</sub> S)		.00	16.00	.00
Carbon Dioxide (CO <sub>2</sub> )	<b>NOT ANALYZED</b>			
Dissolved Oxygen (O <sub>2</sub> )	<b>NOT ANALYZED</b>			

### *Cations*

Calcium (Ca <sup>++</sup> )		1,447.20	20.10	72.00
Magnesium (Mg <sup>++</sup> )		439.20	12.20	36.00
Sodium (Na <sup>+</sup> )		9,702.70	23.00	421.86
Barium (Ba <sup>++</sup> )	<b>NOT ANALYZED</b>			
Manganese (Mn <sup>+</sup> )		.33	27.50	.01
Strontium (Sr <sup>++</sup> )	<b>NOT ANALYZED</b>			

### *Anions*

Hydroxyl (OH <sup>-</sup> )		.00	17.00	.00
Carbonate (CO <sub>3</sub> <sup>=</sup> )		.00	30.00	.00
BiCarbonate (HCO <sub>3</sub> <sup>-</sup> )		366.60	61.10	6.00
Sulfate (SO <sub>4</sub> <sup>=</sup> )		1,900.00	48.80	38.93
Chloride (Cl <sup>-</sup> )		17,218.92	35.50	485.04
Total Iron (Fe)		1.97	18.60	.11
Total Dissolved Solids		31,076.92		
Total Hardness as CaCO <sub>3</sub>		5,418.72		
Conductivity MICROMHOS/CM		46,400		

pH	6.970	Specific Gravity 60/60 F.	1.022
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CaSO<sub>4</sub> Solubility @ 80 F.      50.44MEq/L,      CaSO<sub>4</sub> scale is unlikely

#### *CaCO<sub>3</sub> Scale Index*

70.0	-.072	100.0	.268	130.0	.868
80.0	.058	110.0	.528	140.0	.868
90.0	.268	120.0	.528	150.0	1.188

*Water Analysis*

Conservation Division  
266 N. Main St., Ste. 220  
Wichita, KS 67202-1513



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Shari Feist Albrecht, Chair  
Jay Scott Emler, Commissioner  
Pat Apple, Commissioner

Sam Brownback, Governor

August 22, 2014

Mark Shreve  
Mull Drilling Co., Inc.  
1700 N Waterfront Pkwy, Bldg 1200  
Wichita, KS 67206

RE: Approved Commingling CO081402  
Thornburg 'B' 2-4, Sec.4-T16S-R26W, Ness County  
API No. 15-135-25581-00-00

Dear Mr. Shreve:

Your Application for Commingling (ACO-4) for the above described well 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 Mississippi formation perforations, total oil production shall not exceed **200 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.**

Sincerely,

Rick Hestermann  
Production Department