

**BEFORE THE OIL CONSERVATION DIVISION  
EXAMINER HEARING AUGUST 8, 2019**

**CASE No. 20703**

*LUDWICK LS 016 WELL*

**SAN JUAN COUNTY, NEW MEXICO**



**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

**APPLICATION OF HILCORP ENERGY  
COMPANY FOR AN EXCEPTION TO THE  
WELL DENSITY REQUIREMENTS OF THE  
SPECIAL RULES AND REGULATIONS FOR  
THE BLANCO-MESAVERDE GAS POOL,  
SAN JUAN COUNTY, NEW MEXICO.**

**CASE NO. 20703**

**AFFIDAVIT OF BRAD PEARSON IN SUPPORT OF CASE NO. 20703**

I, Brad Pearson, being of lawful age and duly sworn, declare as follows:

1. My name is Brad Pearson. I work for Hilcorp Energy Company ("Hilcorp") as a Landman.
2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum land matters. My credentials as a petroleum landman have been accepted by the Division and made a matter of record.
3. I am familiar with the application filed by Hilcorp in this case, and I am familiar with the status of the lands in the subject areas.
4. None of the affected parties in this case has indicated opposition, and therefore I do not expect any opposition at the hearing.
5. Hilcorp seeks an exception to the well density requirements of Rule I.B of the Special Rules and Regulations of the Blanco-Mesaverde Gas Pool to permit it to complete and simultaneously produce three Mesaverde gas wells in the same quarter section for a total of five Mesaverde gas wells within the same standard 314.52-acre, more or less, spacing and proration unit.

6. The Blanco-Mesaverde Gas Pool is governed by Special Rules and Regulations which provide for 320-acre spacing and proration units on which as many as four wells may be drilled. The Special Rules therefore limit the number of wells in a spacing unit to four and the number of wells in a half section within a spacing unit to two. The Special Rules also provide that well density exceptions can be approved only after notice and hearing.

7. Hilcorp is the operator of a standard 314.52-acre, more or less, spacing and proration unit in the Blanco-Mesaverde Gas Pool comprised of the E/2 of Section 31, Township 30 North, Range 10 West, San Juan County, New Mexico, in which the following four wells are currently completed and producing:

- a. Ludwick LS 008C Well (API No. 30-045-30414), Sec. 31, T30N, R10W (Unit B);
- b. Ludwick LS 008 Well (API No. 30-045-09028), Sec. 31, T30N, R10W (Unit H);
- a. Ludwick LS 008B Well (API No. 30-045-30170), Sec. 31, T30N, R10W (Unit I); and
- b. Ludwick LS 016M Well (API No. 30-045-29566), Sec. 31, T30N, R10W (Unit O).

8. Hilcorp now proposes to simultaneously dedicate and produce the following fifth well within the same standard spacing and proration unit, at the following location:

- a. **Ludwick LS 016 Well** (API No. 30-045-09019), Sec. 31, T30N, R10W (Unit G).

9. This will be the fifth well within the same spacing unit with three wells in the same quarter section, exceeding well density limits imposed by the Special Rules.

10. Hilcorp therefore requests that the Division enter an order granting an exception to the well density requirements of Rule 1.B of the Special Rules and Regulations of the Blanco-Mesaverde Pool to authorize Hilcorp to simultaneously dedicate and produce the **Ludwick LS 016 Well** (API No. 30-045-09019) within the E/2 of Section 31, Township 30 North, Range 10 West, permitting the total number of wells dedicated and producing within this spacing and proration unit to five, with three wells in the same quarter section.

11. The proposed simultaneous dedication of the proposed well, which is currently producing in the Dakota formation, within the Blanco-Mesaverde is part of Hilcorp's strategy to use existing wells completed in other zones to economically target development of incremental Mesaverde gas reserves in areas where there is not adequate gas drainage.

12. The Division has pre-approved downhole commingling the Dakota formation with the Blanco-Mesaverde Gas Pool.

13. Pursuant to the Special Rules and Division precedent, Hilcorp provided notice to all Division-designated operators in offsetting 320-acre spacing units. Where Hilcorp is the operator, Hilcorp identified all working interest owners in offsetting spacing units as affected parties requiring notice. In some offsetting spacing units, Hilcorp may own 100% of the working interest, in which case there are no affected parties to notice.

14. **Exhibit A-1** is an overview map identifying the location of the subject Blanco-Mesaverde Gas Pool spacing unit, in the green outline, to which the well will be simultaneously dedicated.

15. Exhibit A-1 also identifies the locations of the existing Mesaverde wells as dark blue circles, as well as the subject well as a dark blue triangle.

16. Exhibit A-1 also depicts the notice area comprised of the offsetting spacing units, which is the shaded area within the dark blue hashed line surrounding the subject spacing unit outlined in green. Hilcorp has provided notice of this application to the operators within the notice area. In some instances, Hilcorp may be the operator of offsetting spacing units within the notice area, in which case notice of the application was provided to all the working interest owners within the notice area.

17. **Exhibit A-2** identifies the affected parties within the offsetting spacing units who are required to be noticed. I provided a list of all affected parties requiring notice to Holland & Hart LLP. All parties were locatable.

18. To the best of my knowledge, the addresses used to provide notice are valid and correct addresses which have been recently used by Hilcorp and at which mail has been received by the notice parties.

19. Exhibits A-1 and A-2 were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NAUGHT.

Bradley W. Pearson  
Brad Pearson

STATE OF TEXAS                    )  
  )  
COUNTY OF Harris                    )

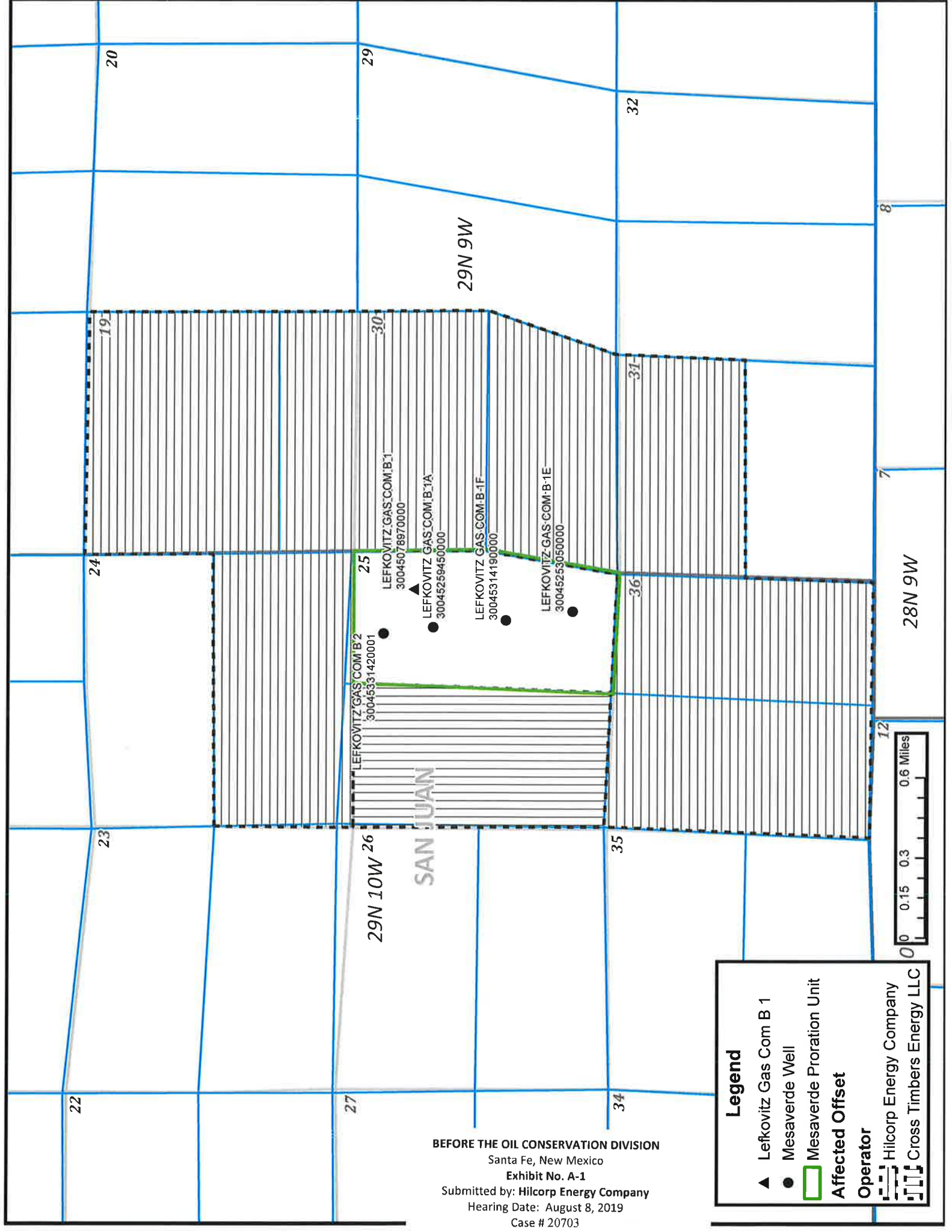
SUBSCRIBED and SWORN to before me this 6<sup>th</sup> day of August, 2019 by  
Brad Pearson.

[Signature]  
NOTARY PUBLIC

My Commission Expires:

02/08/2023





BEFORE THE OIL CONSERVATION DIVISION  
Santa Fe, New Mexico  
Exhibit No. A-1  
Submitted by: Hilcorp Energy Company  
Hearing Date: August 8, 2019  
Case # 20703

**Legend**

- ▲ Lefkovitz Gas Com B 1
- Mesaverde Well
- ▭ Mesaverde Proration Unit

**Affected Offset**

**Operator**

- Hilcorp Energy Company
- Cross Timbers Energy LLC

Name	Address	City	State	Zip Code	Remarks	Offset Drillblock
CROSS TIMBERS ENERGY LLC	400 W 7TH STREET	FT WORTH	TX	76102	OFFSET OPERATOR	29N-10W-25; W/2



**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

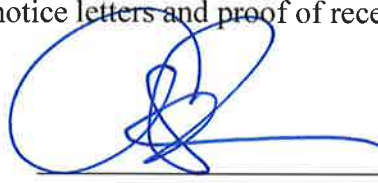
**APPLICATION OF HILCORP ENERGY  
COMPANY FOR AN EXCEPTION TO THE  
WELL DENSITY REQUIREMENTS OF THE  
SPECIAL RULES AND REGULATIONS FOR  
THE BLANCO-MESA VERDE GAS POOL,  
SAN JUAN COUNTY, NEW MEXICO.**

**CASE NO. 20703**


**AFFIDAVIT**

STATE OF NEW MEXICO   )  
  ) ss.  
COUNTY OF SANTA FE   )

Adam G. Rankin, attorney in fact and authorized representative of Hilcorp Energy Company, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application has been provided under the notice letters and proof of receipts attached hereto.

  
\_\_\_\_\_  
Adam G. Rankin

SUBSCRIBED AND SWORN to before me this 7th day of August, 2019 by Adam G. Rankin.

  
\_\_\_\_\_  
Notary Public

My Commission Expires:

August 20, 2021

**Adam G. Rankin**  
**Phone** (505) 988-4421  
**Fax** (505) 983-6043  
agrarkin@hollandhart.com

July 17, 2019

**VIA CERTIFIED MAIL**  
**CERTIFIED RECEIPT REQUESTED**

**TO: AFFECTED PARTIES**

**Re: Application of Hilcorp Energy Company for an Exception to the Well Density Requirements of the Special Rules and Regulations of the Blanco-Mesaverde Gas Pool, San Juan County, New Mexico.**

Ladies & Gentlemen:

This letter is to advise you that Hilcorp Energy Company has filed the enclosed application with the New Mexico Oil Conservation Division. A hearing has been requested before a Division Examiner on August 8, 2019 and the status of the hearing can be monitored through the Division's website at <http://www.emnrd.state.nm.us/ocd/>. Division hearings will commence at 8:15 a.m. in Porter Hall at the Oil Conservation Division's Santa Fe Offices located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Parties appearing in cases are required by Division Rule 19.15.4.13.B to file a Pre-hearing Statement four business days in advance of a scheduled hearing. This statement must be filed at the Division's Santa Fe office at the above specified address and should include: the names of the parties and their attorneys; a concise statement of the case; the names of all witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that are to be resolved prior to the hearing.

If you have any questions about this matter, please contact Brad Pearson at (713) 289-2793.

Sincerely,



Adam G. Rankin  
**ATTORNEY FOR HILCORP ENERGY COMPANY**



# A. Mailer Action

**Note to Mailer:** The labels and volume associated to this form online, **must** match the labeled packages being presented to the USPS® employee with this form.

HEC/LUDWICK LS 016  
Case No. 20703  
CM# 93904.0003

# Shipment Confirmation Acceptance Notice

Shipment Date: 07/16/2019

Shipped From:

Name: HOLLAND & HART LLP

Address: 110 N GUADALUPE ST # 1

City: SANTA FE

State: NM ZIP+4® 87501

Type of Mail	Volume
Priority Mail Express®	
Priority Mail®	0
First-Class Package Service®	
Returns	
International*	
Other	1
Total	1

\*Start time for products with service guarantees will begin when mail arrives at the local Post Office™ and items receive individual processing and acceptance scans.

# B. USPS Action

Note to RSS Clerk:

1. Home screen > Mailing/Shipping > More
2. Select Shipment Confirm
3. Scan or enter the barcode/label number from PS Form 5630
4. Confirm the volume count message by selecting Yes or No
5. Select Pay and End Visit to complete transaction

USPS EMPLOYEE: Please scan upon pickup or receipt of mail.  
Leave form with customer or in customer's mail receptacle.

USPS SCAN AT ACCEPTANCE



9275 0901 1935 6200 0015 7184 18





# Firm Mailing Book For Accountable Mail

Name and Address of Sender		Check type of mail or service										Affix Stamp Here (if issued as an international certificate of mailing or for additional copies of this receipt). Postmark with Date of Receipt.									
		<input type="checkbox"/> Adult Signature Required <input type="checkbox"/> Priority Mail Express <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation <input type="checkbox"/> Collect on Delivery (COD) <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Insured Mail <input type="checkbox"/> Priority Mail																			
USPS Tracking/Article Number		Addressee (Name, Street, City, State, & ZIP Code™)																			
1.	9214 8901 9403 8386 3321 62	BP Production Company 737 Eldridge Parkway E3 12 101A HOUSTON TX 77079																			
Total Number of Pieces Listed by Sender 1		Total Number of Pieces Received at Post Office										Postmaster, Per (Name of receiving employee)									

PS Form 3877, April 2015 PSN 7530-02-000-9098

Complete in Ink

Privacy Notice: For more information on USPS privacy policies, visit [usps.com/privacypolicy](https://usps.com/privacypolicy).

Postal Delivery Report  
Hilcorp - Ludwick LS 016H  
Case No. 20703

Tracking Number	Recipient	Status
9214890194038386332162	BP Production Company 737 Eldridge Parkway E3 12 101A HOUSTON TX 77079	In-Transit

AFFIDAVIT OF PUBLICATION

Ad No.  
0001291919

HOLLAND AND HART  
PO BOX 2208

SANTA FE NM 87504

I, being duly sworn say: THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the State of New Mexico for publication and appeared in the internet at The Daily Times web site on the following days(s):

07/23/19

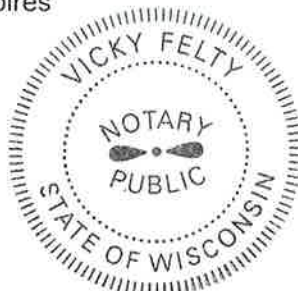
  
Legal Clerk

Subscribed and sworn before me this  
23th of July 2019.

  
State of WI, County of Brown  
NOTARY PUBLIC

9/19/26  
My Commission Expires

Ad#:0001291919  
P O : Case No. 16403  
# of Affidavits :0.00



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
SANTA FE, NEW MEXICO

The State of New Mexico through its Oil Conservation Division hereby gives notice pursuant to law and the Rules and Regulations of the Division of the following public hearing to be held at 8:15 A.M. on **August 8, 2019**, in the Oil Conservation Division Hearing Room at 1220 South St. Francis, Santa Fe, New Mexico, before an examiner duly appoint for the hearing. If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing, please contact: Florene Davidson at 505-476-3458 or through the New Mexico Relay Network, 1-800-659-1779 by **July 29, 2019**. Public documents, including the agenda and minutes, can be provided in various accessible forms. Please contact Florene Davidson if a summary or other type of accessible form is needed.

**STATE OF NEW MEXICO TO:**  
**All named parties and persons**  
**having any right, title, interest**  
**or claim in the following case**  
**and notice to the public.**

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated.)

**TO: All working interest owners in the subject spacing unit and offsetting operators or leased mineral interest owners, including: BP Production Company.**

**CASE 20703: Application of Hilcorp Energy Company for an Exception to the Well Density Requirements of the Special Rules and Regulations of the Blanco-Mesaverde Gas Pool, San Juan County, New Mexico.** Applicant in the above-styled cause seeks an order for an exception to the well density requirements of Rule I.B of the Special Rules and Regulations for the Blanco-Mesaverde Gas Pool (72319), San Juan County, New Mexico, to permit it to complete and simultaneously produce five Mesaverde gas wells in the same standard 314.52-acre, more or less, spacing and proration unit, with three wells in the same quarter section. Hilcorp further seeks approval for the proposed location of the **Ludwick LS 016 Well** (API No. 30-045-09019) in the Mesaverde formation with a surface location in Unit G of the E/2 of Section 31, Township 30 North, Range 10 West, NMPM, San Juan County, New Mexico, and authorization to simultaneously complete and produce the **Ludwick LS 016 Well** from the Blanco-Mesaverde Gas Pool. Said area is located approximately 7 miles east

of Aztec, NM.

Legal No. 1291919 published in The Daily Times  
on July 23, 2019.

**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

**APPLICATION OF HILCORP ENERGY  
COMPANY FOR AN EXCEPTION TO THE  
WELL DENSITY REQUIREMENTS OF THE  
SPECIAL RULES AND REGULATIONS FOR  
THE BLANCO-MESAVERDE GAS POOL,  
SAN JUAN COUNTY, NEW MEXICO.**

**CASE NO. 20703**

**AFFIDAVIT OF TYLER TEYKL IN SUPPORT OF CASE NO. 20703**

Tyler Teykl, being of lawful age and duly sworn, declare as follows:

1. My name is Tyler Teykl. I work for Hilcorp Energy Company ("Hilcorp") as a reservoir engineer.
2. I have previously testified before the New Mexico Oil Conservation Division as an expert in reservoir engineering. My credentials as a reservoir engineer have been accepted by the Division and made a matter of record.
3. I am familiar with the application filed by Hilcorp in this case and have conducted an engineering study of the subject area and of the Blanco-Mesaverde Gas Pool.
4. As with Hilcorp's prior applications for well density exceptions in the Blanco-Mesaverde Gas Pool, I used a decline curve analysis of existing wells to estimate ultimate recoveries for the subject spacing unit under the existing well density. I then compared the estimated ultimate gas recoveries against log-derived volumetric calculations for the original gas in place with the cumulative gas production in the spacing unit. Using this approach, we identified areas, including the subject spacing unit, that have substantial remaining recoverable



gas and lower-than-expected gas recoveries where additional well bores or well completions are necessary to adequately drain remaining gas reserves.

5. **Exhibit C-1** contains information relating to the subject spacing unit and the **Ludwick LS 016 Well** (API No. 30-045-09019) within the E/2 of Section 31, Township 30 North, Range 10 West, which is the well Hilcorp proposes for simultaneous dedication within the Blanco-Mesaverde Gas Pool in this application. It is currently producing within the Dakota formation. It will be the third Mesaverde completion in the quarter section in the spacing unit. I anticipate that it will help drain the area to the south.

6. **Exhibit C-2** is a basin-wide map reflecting Hilcorp's calculations for original gas in place across the Blanco-Mesaverde Gas Pool. The warmer colors represent areas where there is more original gas in place. The cooler colors indicate areas where there is less original gas in place. The red star indicates the location of the subject well in an area where we calculate moderately high volumes of original gas in place.

7. **Exhibit C-3** is a map depicting the calculated estimated ultimate recovery (EUR) from the Blanco-Mesaverde Gas Pool and drainage radius. The larger radius circles reflect wells with higher EURs and larger drainage areas. The red star identifies the location of the subject well where there is relatively low EURs and the drainage radii are smaller.

8. **Exhibit C-4** is a map depicting calculated remaining recoverable gas. The cooler colors indicate areas where there is relatively less remaining recoverable gas. The warmer colors reflect areas where there is relatively more remaining recoverable gas. The red star identifies the location of the subject well in an area where we calculate that there is relatively considerable remaining recoverable gas and relatively low EURs under the existing well density.

9. **Exhibit C-5** is a table that supports this volumetric analysis. The first column titled "Volumetric OGIP" reflects the calculated volumetric original gas in place on a quarter section, section, and nine-section area basis around the subject spacing unit. The column titled "Section Equivalent OGIP" shows the estimated gas in place to show that the estimates are consistent across the area. The column titled "CTD/RF%" shows the cumulative gas production to date on a quarter section, section, and nine-section area basis and the calculated recovery factor. The column titled "Remaining GIP" shows the estimated remaining gas in place on a quarter section, section, and nine-section area basis. The last column titled "EUR/RF%" shows the estimated ultimate gas recovery and recovery factor calculated on a quarter section, section, and nine-section area basis.

10. I would expect recovery factors of approximately 70-80% in a gas pool of this type. The relatively low recovery factors in Exhibit C-5 indicate that this area is not being sufficiently drained by the existing wells in the subject spacing unit under the existing well density and that additional well bores, or completions, are necessary to adequately drain the Blanco-Mesaverde Gas Pool in this area.

11. Approval of Hilcorp's application is therefore necessary to drain unrecovered gas reserves that will otherwise be left in place under the existing well density.

12. **Exhibit C-6** is a well bore diagram for the subject well. It provides the most current information known regarding the status and construction of the well, as well as the location and condition of cement within the wellbore. Hilcorp will separately seek administrative approval from the Division's Aztec District Office for authorization to recompleting this well in advance of undertaking any recompletion operations.

13. In my opinion, granting this application will not impair the Blanco-Mesaverde Gas Pool, and will be in the interest of conservation, the prevention of waste and will protect correlative rights.

14. Exhibits C-1 through C-6 were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NAUGHT.

Tyler Teykl  
Tyler Teykl

STATE OF TEXAS )  
COUNTY OF Harris )

SUBSCRIBED and SWORN to before me this 6<sup>th</sup> day of August, 2019 by  
Tyler Teykl.

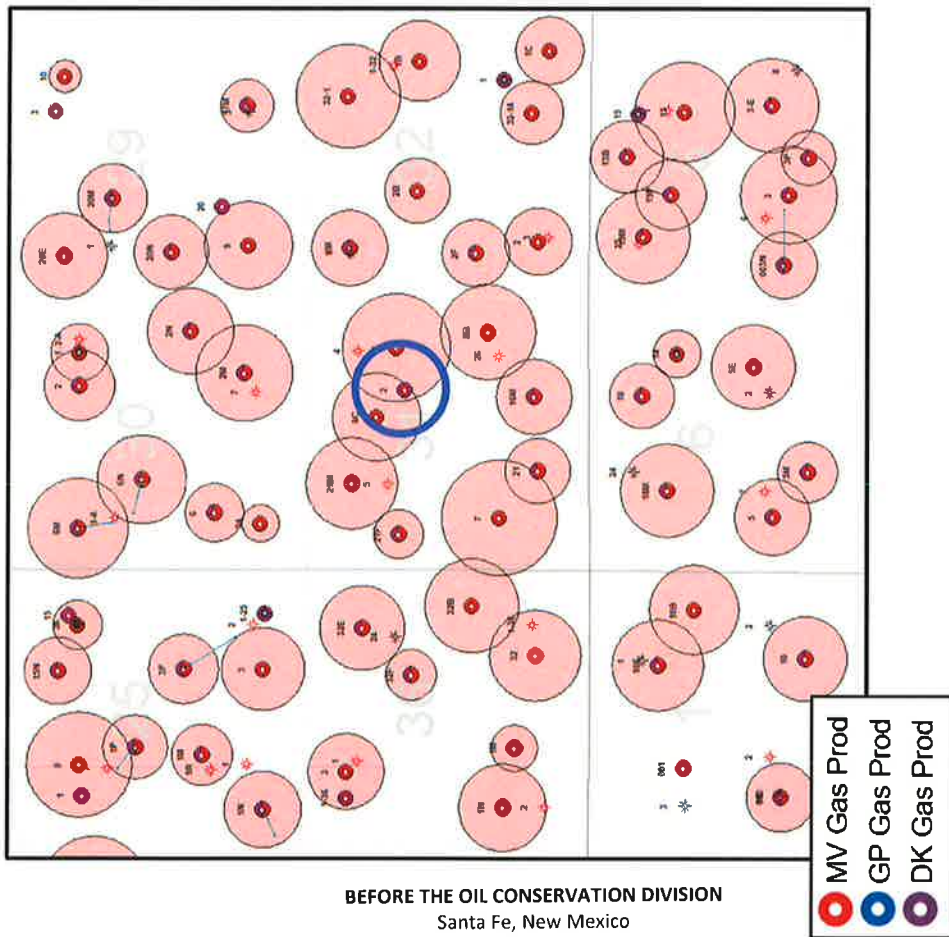
Brenda Maricela Guzman  
NOTARY PUBLIC

My Commission Expires:

02/08/2023



# Ludwick LS 16



BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. C-1

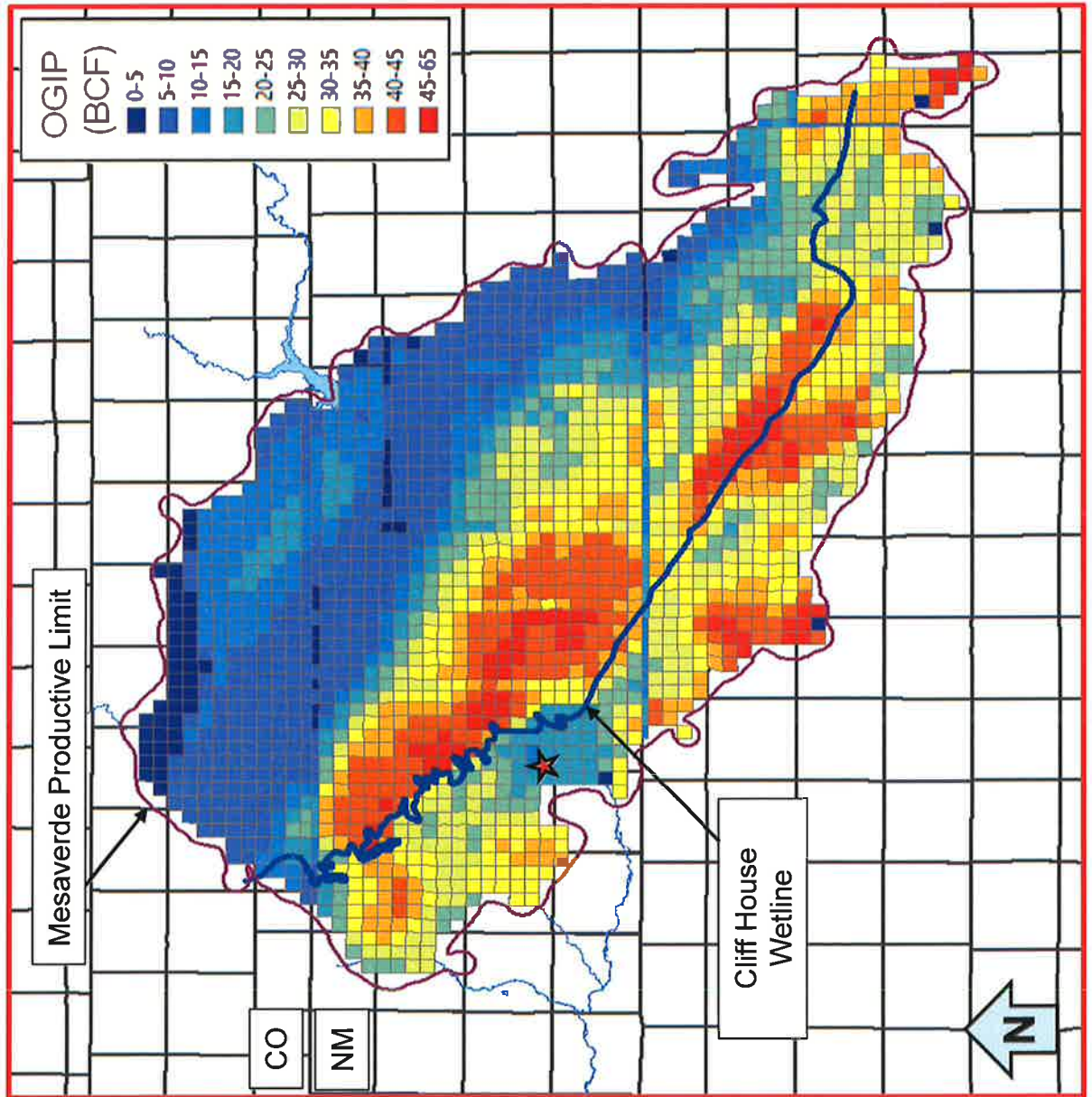
Submitted by: Hilcorp Energy Company

Hearing Date: August 8, 2019

Case # 20703



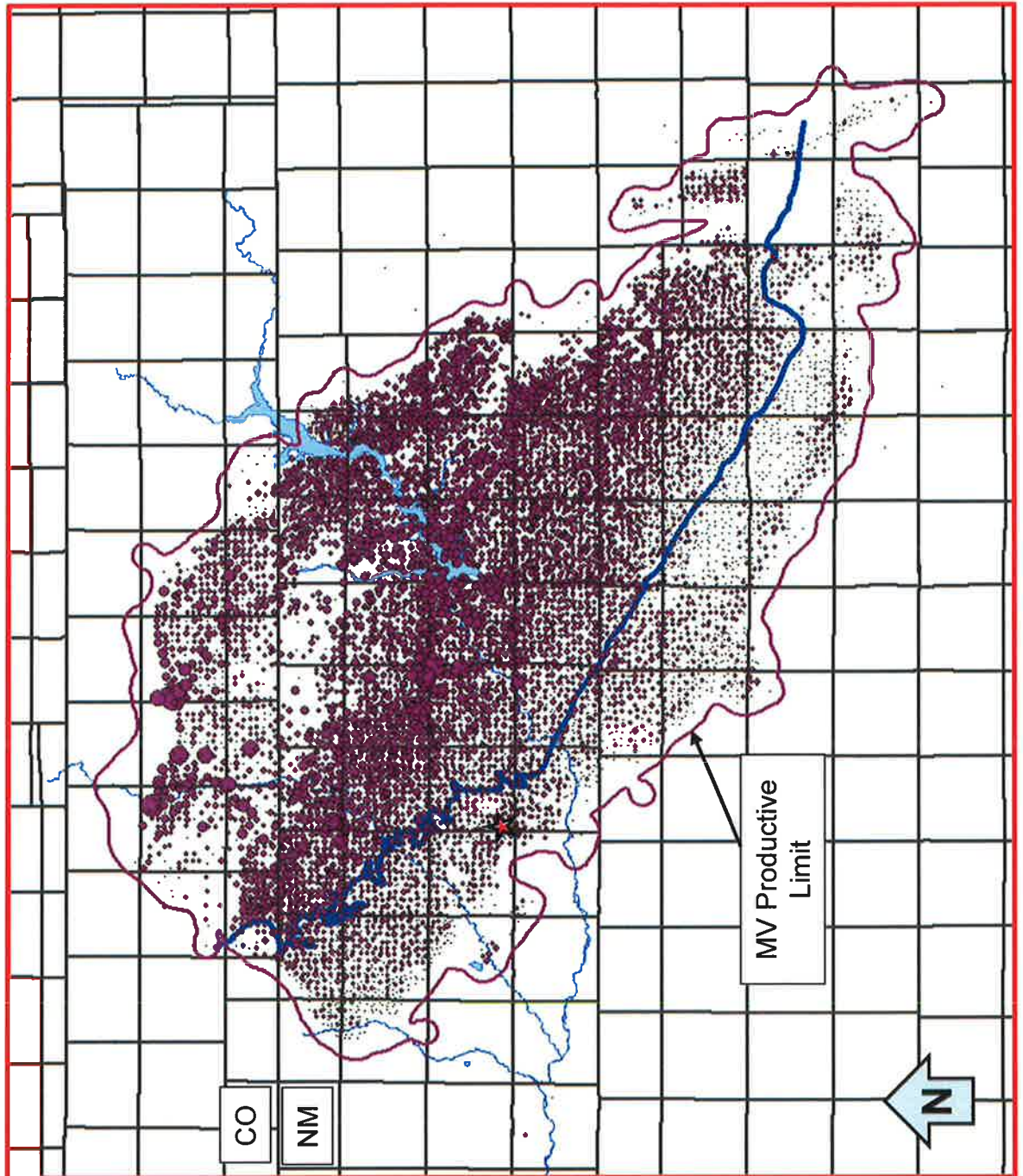
# MV Original Gas In Place





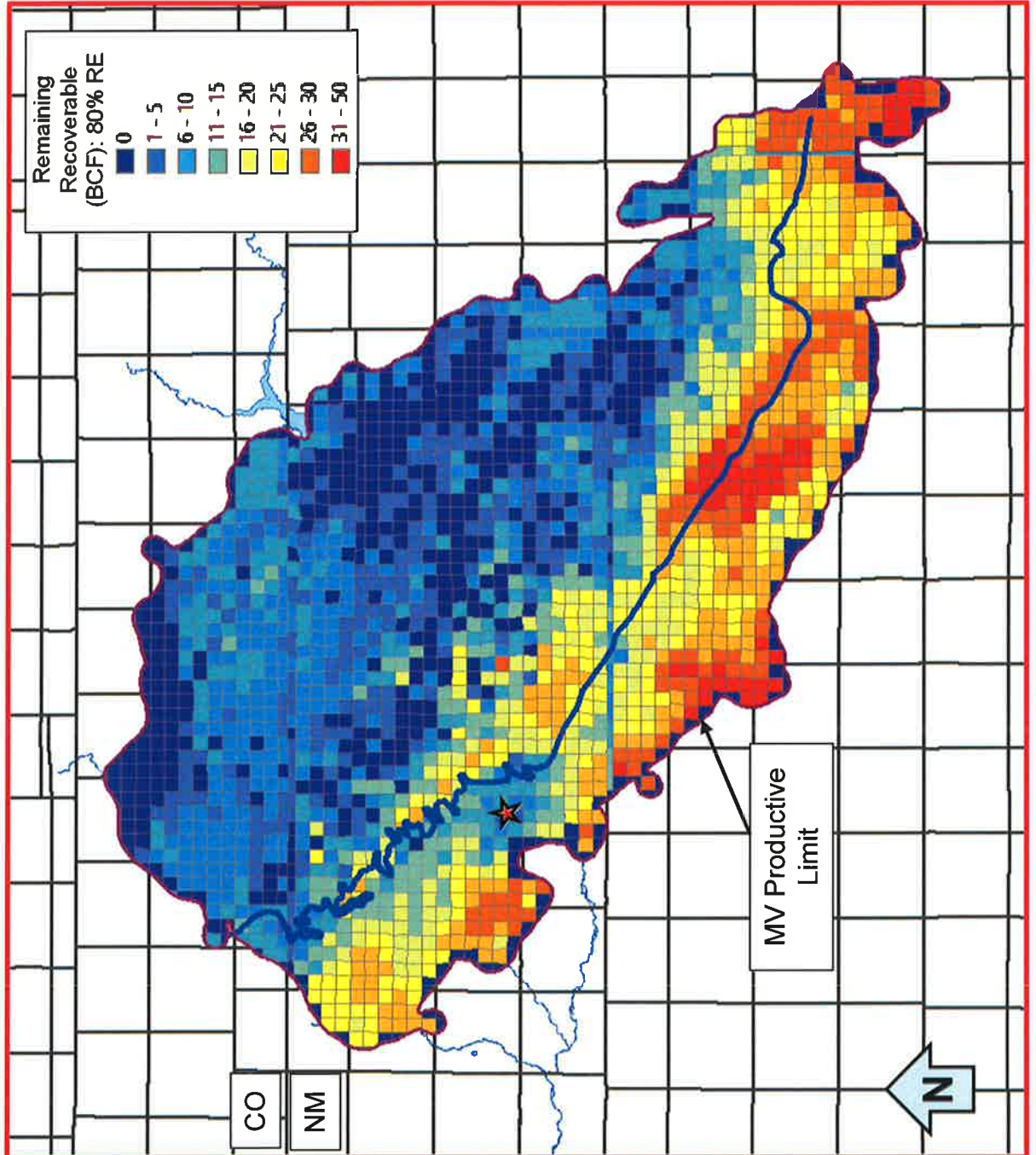


# MV EUR and Drainage Radius





# MV Remaining Recoverable Gas





# Ludwick LS 16



Reference Area	Volumetric OGIP	Section Equivalent OGIP	CTD / RF%	Remaining GIP	EUR / RF%
Qtr Section	5.2 Bcf	20.8 Bcf	2.2 Bcf / 42%	3 Bcf	3.98 Bcf / 77%
Section	20.4 Bcf	20.4 Bcf	6.7 Bcf / 33%	13.7 Bcf	11.3 Bcf / 55%
9 Section	195 Bcf	21.6 Bcf	42 Bcf / 22%	152 Bcf	70 Bcf / 36%

- Remaining Gas in Place in Quarter Section of 3 Bcf
- Cumulative Recovery Factor to Date 42% and 33% in the Quarter Section and Section, respectively
- Considerable gas remaining in area with opportunity to recover additional volumes utilizing existing wellbore

# Ludwick LS 16

