

**BEFORE THE OIL CONSERVATION DIVISION
EXAMINER HEARING JUNE 13, 2019**

CASE No. 20533

NEUMAN 001 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. 20533

AFFIDAVIT OF ROB CARLSON IN SUPPORT OF CASE NO. 20533

I, Rob Carlson, being of lawful age and duly sworn, declare as follows:

1. My name is Rob Carlson. 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 sections, with two Mesaverde gas wells in the same quarter-quarter sections, for a total of six Mesaverde gas wells within the same standard 320-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 320-acre, more or less, spacing and proration unit in the Blanco-Mesaverde Gas Pool comprised of the N/2 of Section 20, Township 31 North, Range 12 West, San Juan County, New Mexico, in which the following four wells are currently completed and producing:

- a. Ohio F Govt 001 Well (API No. 30-045-10620) Sec. 20, T31N, R12W (Unit A);
- b. Ohio F Govt 001A Well (API No. 30-045-23000), Sec. 20, T31N, R12W (Unit C);
- c. Ohio F Govt 001B Well (API No. 30-045-30129), Sec. 20, T31N, R12W (Unit E);
and
- d. Ohio F Govt 001C Well (API No. 30-045-30121), Sec. 20, T31N, R12W (Unit G).

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

- a. **Neuman 001 Well** (API No. 30-045-10616), Sec. 20, T31N, R12W (Unit B); and
- b. **Neuman 001E Well** (API No. 30-045-24388), Sec. 20, T31N, R12W (Unit C).

9. These will be the fifth and sixth wells within the same spacing unit with three wells in the same quarter section, and two wells in the same quarter-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 **Neuman 001 Well** (API No. 30-045-10616) and the **Neuman 001E Well** (API No. 30-045-24388) within the N/2 of Section 20, Township 31 North, Range 12 West, permitting the total number of wells dedicated and producing within this spacing and proration unit to six, with three wells in the same quarter section and two wells in the same quarter-quarter section (Unit C).

11. The proposed simultaneous dedication of the **Neuman 001 Well** and the **Neuman 001E Well**, which are 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, within the N/2 of Section 20, Township 31 North, Range 12 West, to which the wells 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 **Neuman 001 Well** and the **Neuman 001E Well** as dark blue triangles.

16. Exhibit A-1 also depicts the notice area comprised of the offsetting spacing units, which is the area within the dark blue dashed 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.

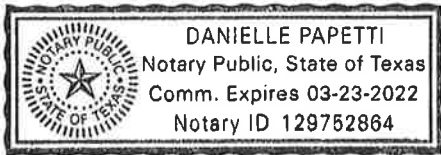
19. Exhibits A-1 and A-2 were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NAUGHT.

Rob Carlson
Rob Carlson

STATE OF TEXAS)
COUNTY OF Harris)

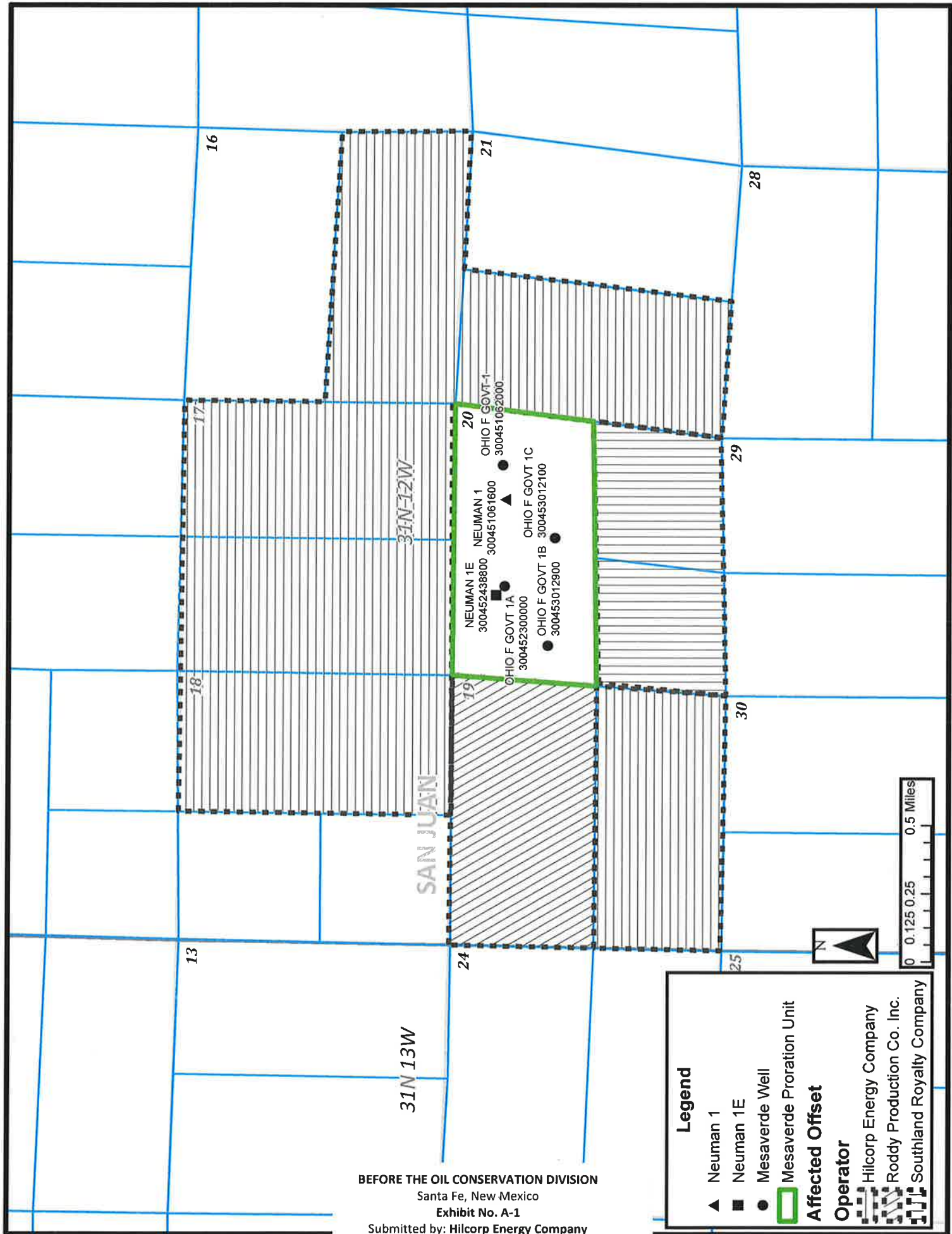
SUBSCRIBED and SWORN to before me this 4th day of June, 2019 by Rob
Carlson.



Danielle Papetti
NOTARY PUBLIC

My Commission Expires:

03/23/2022



BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. A-1
Submitted by: Hilcorp Energy Company
Hearing Date: June 13, 2019
Case # 20533

Legend

- ▲ Neuman 1
- Neuman 1E
- Mesaverde Well
- Mesaverde Proration Unit
- Affected Offset

Operator

- Hilcorp Energy Company
- Roddy Production Co. Inc.
- Southland Royalty Company

Name	Address	City	State	Zip Code	Remarks	Offset Drillblock
HILCORP ENERGY COMPANY	1111 TRAVIS	HOUSTON	TX	77002	OFFSET OPERATOR	
RODDY PRODUCTION	PO BOX 2221	FARMINGTON	NM	87499	OFFSET OPERATOR	N/2 Sec. 19-T31N-R12W
SOUTHLAND ROYALTY COMPANY	400 WEST 7TH STREET	FORT WORTH	TX	76102	OFFSET OPERATOR	S/2 Sec. 20-T31N-R12W
ANDREA ALSBERG DOLIN	12407 SARAH	STUDIO CITY	CA	91604	WIO	S/2 Sec. 19-T31N-R12W
BACHMAN BROTHERS	2501 GREENBRIAR DR	SPRINGFIELD	IL	62704	WIO	S/2 Sec. 19-T31N-R12W
CHEROKEE MINERALS LP	P O BOX 2272	LONGVIEW	TX	75606	WIO	S/2 Sec. 19-T31N-R12W
CLIFFORD ALSBERG	1480 SHEFFIELD DR NE	ATLANTA	GA	30329-3422	WIO	S/2 Sec. 19-T31N-R12W
JOHN V GUTTAG	273 EMERSON RD	LEXINGTON	MA	02420-1936	WIO	S/2 Sec. 19-T31N-R12W
KAREN KOROBKIN	571 E BROAD ST	NEVADA CITY	CA	95959	WIO	S/2 Sec. 19-T31N-R12W
STEPHEN ALSBERG	447 ZION STREET	NEVADA CITY	CA	95959	WIO	S/2 Sec. 19-T31N-R12W

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

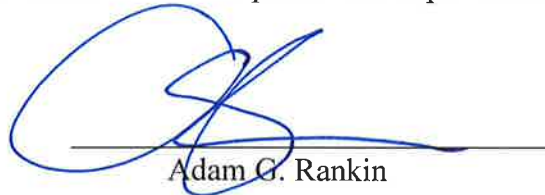
**APPLICATION OF HILCORP ENERGY
COMPANY FOR AN EXCEPTION TO THE
WELL DENSITY REQUIREMENTS OF THE
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CASE NO. 20533

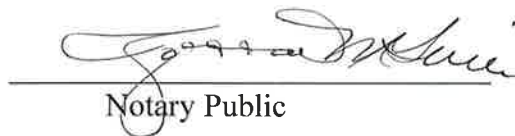
AFFIDAVIT

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 12th day of June, 2019 by Adam G. Rankin.


Notary Public

My Commission Expires:

August 26, 2021


**BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B
Submitted by: Hilcorp Energy Company
Hearing Date: June 13, 2019
Case # 20533**



May 24, 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 June 13, 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 Rob Carlson at (832) 839-4596.

Sincerely,

Adam G. Rankin

ATTORNEY FOR HILCORP ENERGY COMPANY**BEFORE THE OIL CONSERVATION DIVISION**

Santa Fe, New Mexico

Exhibit No. B-1Submitted by: **Hilcorp Energy Company**

Hearing Date: June 13, 2019

Case # 20533



Shipment Confirmation Acceptance Notice

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.

Hilcorp Energy Co. 93904.0003
Neuman 1 & 1E Wells
Case No. 20533

Shipment Date: 05/23/2019

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	11
Total	11

*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.

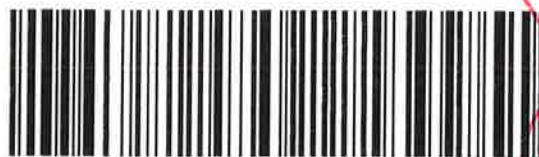
B. USPS Action

Note to RSS Clerk:

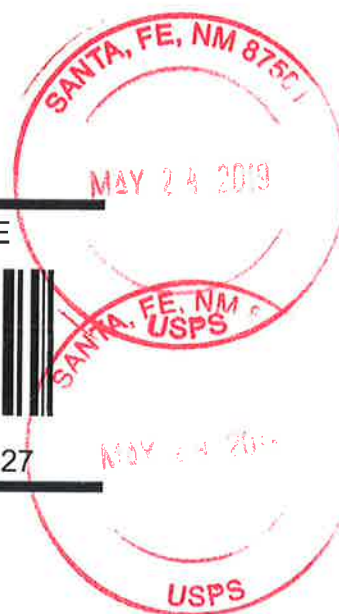
1. Home screen > Mailing/Shipping > More
2. Select Shipment Confirm
3. Scan or enter the barcode/label number from PS Form 5630
4. Confirm the volume count message by selecting Yes or No
5. Select Pay and End Visit to complete transaction

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 0014 6698 27



**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.													
USPS Tracking/Article Number		Addressee (Name, Street, City, State, & ZIP Code™)		Postage	(Extra Service) Fee	Handling Charge	Actual Value If Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee	
1.	9214 8901 9403 8383 7251 58	RODDY PRODUCTION PO BOX 2221 FARMINGTON NM 87499		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
2.	9214 8901 9403 8383 7251 65	SOUTHLAND ROYALTY COMPANY 400 WEST 7TH STREET FORT WORTH TX 76102		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
3.	9214 8901 9403 8383 7251 72	ANDREA ALSBERG DOLIN 12407 SARAH STUDIO CITY CA 91604		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
4.	9214 8901 9403 8383 7251 89	BACHMAN BROTHERS 2501 GREENBRIAR DR SPRINGFIELD IL 62704		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
5.	9214 8901 9403 8383 7251 96	CHEROKEE MINERALS LP PO BOX 2272 LONGVIEW TX 75606		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
6.	9214 8901 9403 8383 7252 02	CLIFFORD ALSBERG 1480 SHEFFIELD DR NE ATLANTA GA 30329-3422		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
7.	9214 8901 9403 8383 7252 19	JOHN V GUTTAG 273 EMERSON RD LEXINGTON MA 02420-1936		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
8.	9214 8901 9403 8383 7252 26	KAREN KOROBKIN 571 E BROAD ST NEVADA CITY CA 95959		0.65	3.50	Handling Charge - if Registered and over \$50.00 in value							1.60				
Total Number of Pieces Listed by Sender 11		Total Number of Pieces Received at Post Office		Postmaster, Per (Name of receiving employee)													



Holland & Hart LLP
110 N Guadalupe St # 1
Santa Fe NM 87501

Check type of mail or service

- | | |
|--|---|
| <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 | |

Affix Stamp Here
(if issued as an international
certificate of mailing or for
additional copies of this receipt).
Postmark with Date of Receipt.

[illegible]

POSTAL DELIVERY REPORT
NEUMAN 1 & 1E WELL
Case No. 20533

Recipient	Status	Custom
RODDY PRODUCTION PO BOX 2221 FARMINGTON NM 87499	Delivered Signature Received	Ref#: C1399840.7861610 RetRef#:
SOUTHLAND ROYALTY COMPANY 400 WEST 7TH STREET FORT WORTH TX 76102	Delivered Signature Received	Ref#: C1399840.7861611 RetRef#:
ANDREA ALSBERG DOLIN 12407 SARAH STUDIO CITY CA 91604	Delivered Signature Received	Ref#: C1399840.7861612 RetRef#:
BACHMAN BROTHERS 2501 GREENBRIAR DR SPRINGFIELD IL 62704	Delivered Signature Received	Ref#: C1399840.7861613 RetRef#:
CHEROKEE MINERALS LP PO BOX 2272 LONGVIEW TX 75606	Delivered Signature Received	Ref#: C1399840.7861614 RetRef#:
CLIFFORD ALSBERG 1480 SHEFFIELD DR NE ATLANTA GA 30329-3422	Delivered Signature Received	Ref#: C1399840.7861615 RetRef#:
JOHN V GUTTAG 273 EMERSON RD LEXINGTON MA 02420-1936	Delivered Signature Received	Ref#: C1399840.7861616 RetRef#:
KAREN KOROBKIN 571 E BROAD ST NEVADA CITY CA 95959	Delivered Signature Received	Ref#: C1399840.7861617 RetRef#:
STEPHEN ALSBERG 447 ZION STREET NEVADA CITY CA 95959	Delivered Signature Received	Ref#: C1399840.7861618 RetRef#:
BUREAU OF LAND MANAGEMENT 6251 College Blvd FARMINGTON NM 87402	Delivered Signature Received	Ref#: C1399840.7861619 RetRef#:
NEW MEXICO LAND OFFICE 310 Old Santa Fe Trail Santa Fe NM 87501	Delivered Signature Received	Ref#: C1399840.7861620 RetRef#:

AFFIDAVIT OF PUBLICATION

Ad No.
0001286997

HOLLAND AND HART
PO BOX 2208

SANTA FE NM 87504

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B-2
Submitted by: Hilcorp Energy Company
Hearing Date: June 13, 2019
Case # 20533

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 **June 13, 2019**, in the Oil Conservation Division Hearing Room at 1220 South St. Francis, Santa Fe, New Mexico, before an examiner duly appointed 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 **June 3, 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: RODDY PRODUCTION SOUTHLAND ROYALTY COMPANY; ANDREA ALSBERG DOLIN, HER HEIRS AND DEVISEES BACHMAN BROTHERS; CHEROKEE MINERALS LP; CLIFFORD ALSBERG, HIS HEIRS AND DEVISEES; JOHN V. GUTTAG, HIS HEIRS AND DEVISEES; KAREN KOROBIK, HER HEIRS AND DEVISEES; STEPHEN ALSBERG, HIS HEIRS AND DEVISEES.

CASE 20533: 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 six Mesaverde gas wells in the same standard 320-acre, more or less, spacing and proration unit, with three wells in the same quarter section and two wells in the same quarter-quarter section. Hilcorp further seeks approval for the

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):

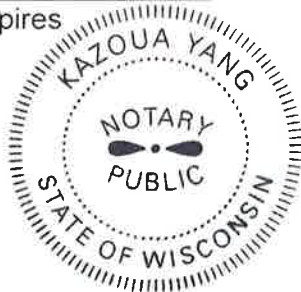
05/28/19

Legal Clerk

Subscribed and sworn before me this
28th of May 2019.

State of WI County of Brown
NOTARY PUBLIC

My Commission Expires



proposed location of the **Neuman 001 Well** (API No. 30-045-10616) with a surface location in Unit B and the **Neuman 001E Well** (API No. 30-045-24388) with a surface location in Unit C in the Mesaverde formation of the N/2 of Section 20, Township 31 North, Range 12 West, NMPM, San Juan County, New Mexico, and authorization to simultaneously complete and produce the **Neuman 001 Well** and the **Neuman 001E Well** from the Blanco-Mesaverde Gas Pool. Said area is located approximately 7 miles northwest of Aztec, NM.

Legal No. 1286997 published in The Daily Times on May 28, 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. 20533

AFFIDAVIT OF ALEX LIANG IN SUPPORT OF CASE NO. 20533

Alex Liang, being of lawful age and duly sworn, declare as follows:

1. My name is Alex Liang. 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 **Neuman 001 Well** (API No. 30-045-10616) and the **Neuman 001E Well** (API No. 30-045-24388) within the N/2 of Section 20, Township 31 North, Range 12 West, which are the wells Hilcorp proposes for simultaneous dedication within the Blanco-Mesaverde Gas Pool in this application. They are currently producing within the Dakota formation. They will be the third Mesaverde completions in the quarter sections within the spacing unit. I anticipate that they will help drain the area to the west and east, respectively.

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.

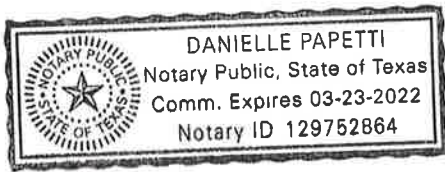
14. Exhibits C-1 through C-6 were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NAUGHT.

Alex Liang
Alex Liang

STATE OF TEXAS)
COUNTY OF Harris)

SUBSCRIBED and SWORN to before me this 5th day of June, 2019 by Alex Liang.



Danielle Papetti
NOTARY PUBLIC

My Commission Expires:

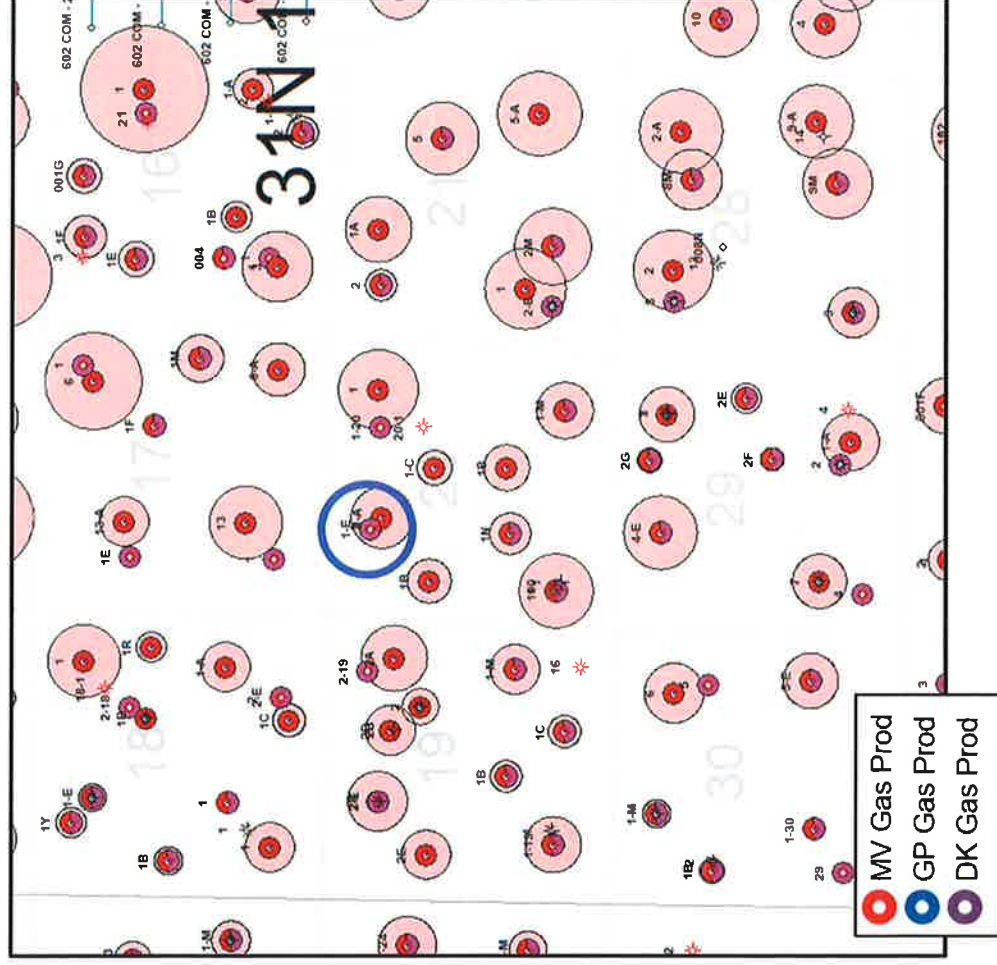
03/23/2022



- NE20 31-12 3004510616 1960 drill
- 3rd MV completion in $\frac{1}{4}$ section
- 630' from nearest MV producer
- Help drain area to the south
- Complete MV in 1-2 stages

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. C-1
Submitted by: **Hilcorp Energy Company**
Hearing Date: June 13, 2019
Case # 20533

NEUMAN 001E

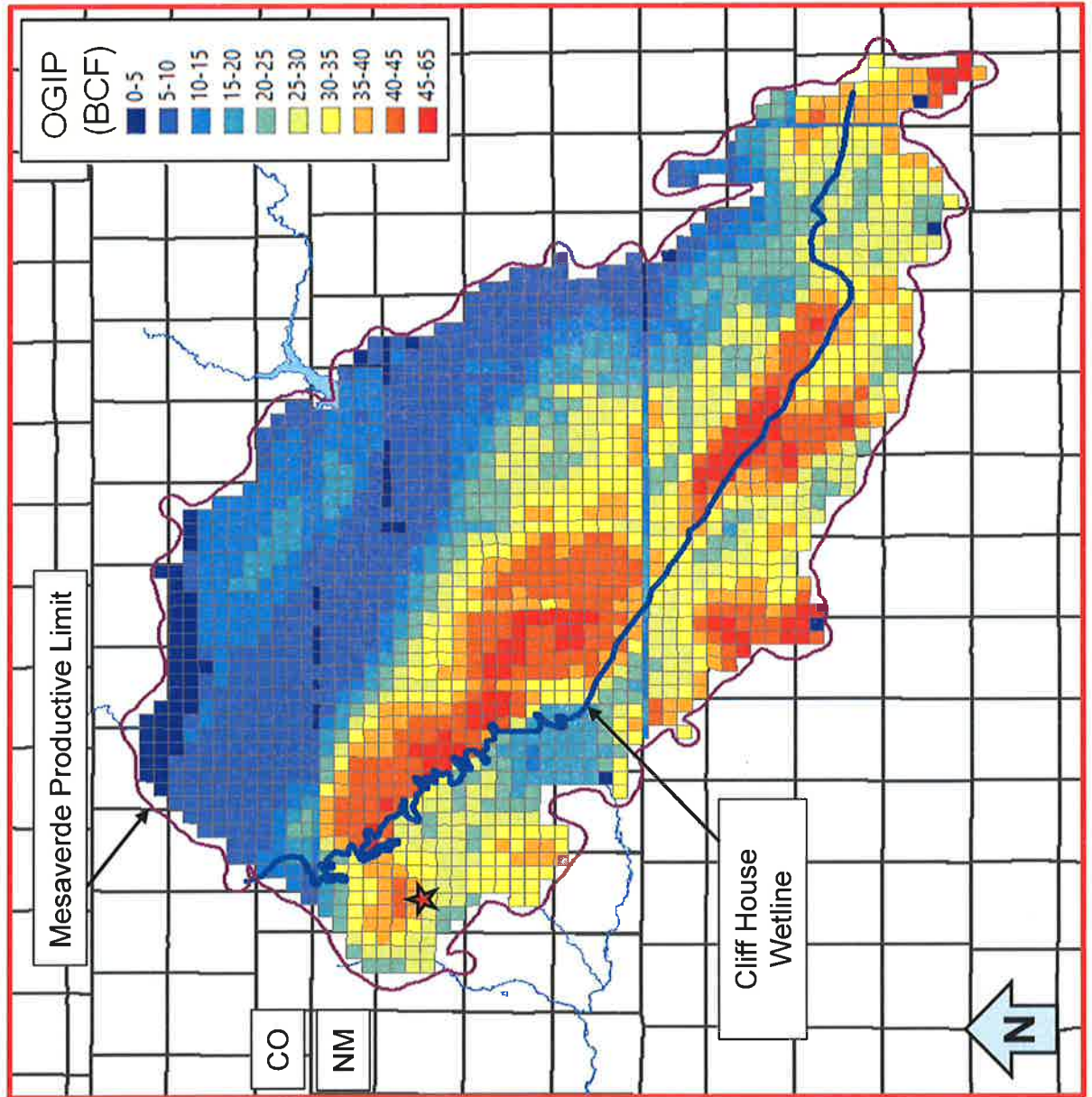


Well Specifics

- NW20 31-12 3004524388 1980 drill
- 3rd MV completion in 1/4 section
- 300' from nearest MV producer
- Help drain area to the west
- Complete MV in 1-2 stages

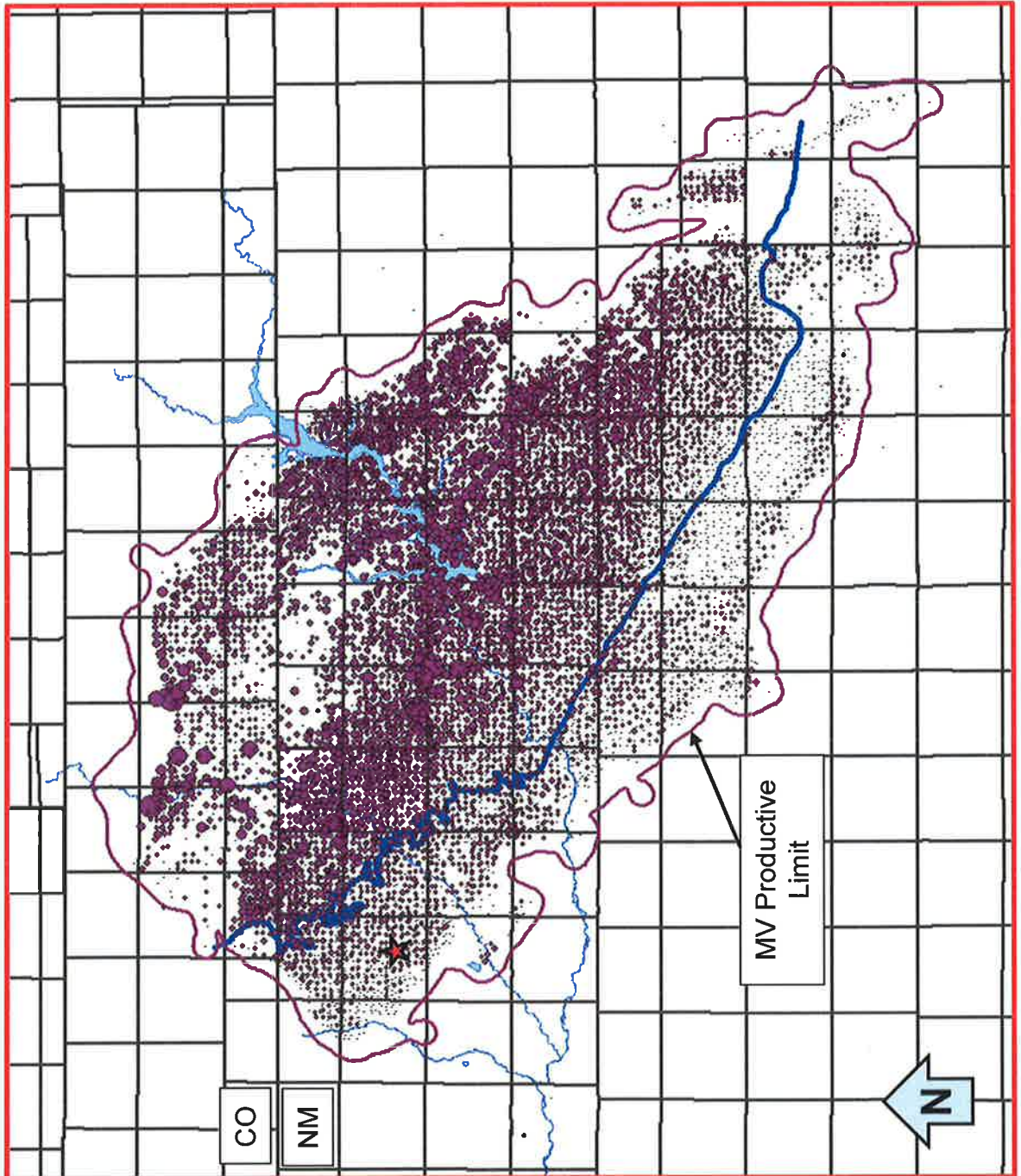


MV Original Gas In Place



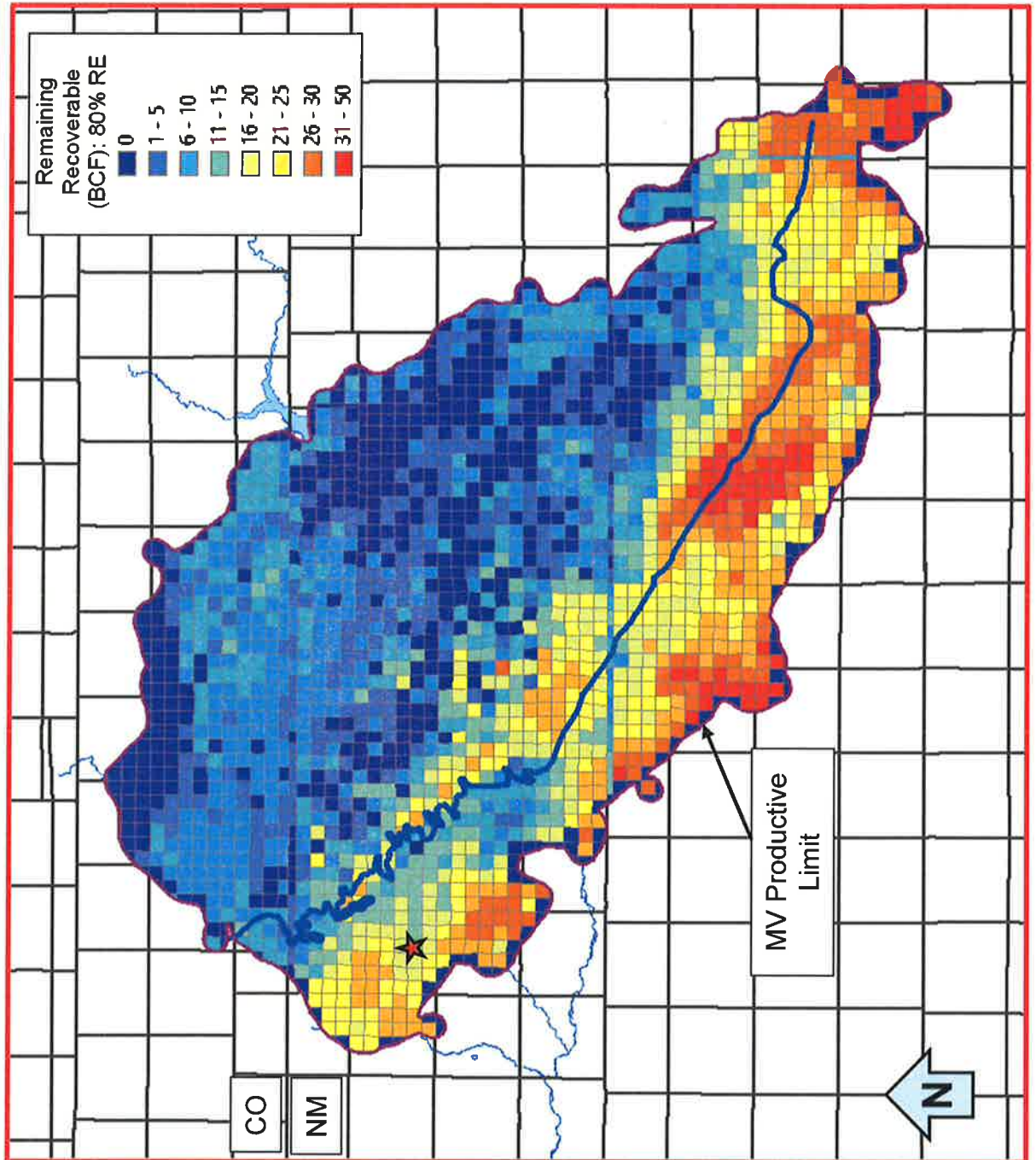


MV EUR and Drainage Radius





MV Remaining Recoverable Gas



NEUMAN 001



Reference Area	Volumetric OGIP	Section Equivalent OGIP	CTD / RF%	Remaining GIP	EUR / RF%
Qtr Section	2.1 Bcf	8.4 Bcf	2.5 Bcf / 120%	0 Bcf	2.5 Bcf / 120%
Section	8.3 Bcf	8.3 Bcf	7.9 Bcf / 96%	0.4 Bcf	7.9 Bcf / 96%
9 Section	141.0 Bcf	15.6 Bcf	53.3 Bcf / 38%	87.7 Bcf	62.3 Bcf / 44%

- Remaining Gas in Place in Quarter Section of 0 Bcf
- Cumulative Recovery Factor to Date 120% and 96% in the Quarter Section and Section, respectively
- Considerable gas remaining in area with opportunity to recover additional volumes utilizing existing wellbore

NEUMAN 001E



Reference Area	Volumetric OGIP	Section Equivalent OGIP	CTD / RF%	Remaining GIP	EUR / RF%
Qtr Section	2.0 Bcf	8.0 Bcf	1.8 Bcf / 92%	0.2 Bcf	1.8 Bcf / 92%
Section	8.3 Bcf	8.3 Bcf	7.9 Bcf / 96%	0.4 Bcf	7.9 Bcf / 96%
9 Section	141.0 Bcf	15.6 Bcf	53.3 Bcf / 38%	87.7 Bcf	62.3 Bcf / 44%

- Remaining Gas in Place in Quarter Section of 0.2 Bcf
- Cumulative Recovery Factor to Date 92% and 96% in the Quarter Section and Section, respectively
- Considerable gas remaining in area with opportunity to recover additional volumes utilizing existing wellbore

Hilcorp Energy Company

Current Schematic - Version 2

Well Name: (PRE-IMPORT) NEUMAN #1

API Well ID SC004510616	Schedule Dates 8-20-2019-12-01	Well Name NEUMAN #1	Operator HILCORP ENERGY COMPANY
County Seward	Original Depth (ft) 16,060.00	Completion Date 11-20	Completion Type Production

Vertical, Original Hole, 5/6/2019 4:14:32 PM

MD (fms)	TVD (fms)	Vertical Schematic (actual)
11.2		
32.0		
154.1		
195.0		
2,477.0		
2,889.9		
5,190.1		
4,029.1		
4,226.1		
4,779.9		
5,368.9		
5,775.9		
5,106.0		
5,236.9		
6,948.6		
6,949.1		
7,022.0		
7,071.2		
7,066.9		
7,071.9		
7,066.0		
7,105.0		
7,136.9		

Vertical Schematic (actual)

1. Surface, 9.5 ft in, 8.92 in, 11.00 fms, 165.00 fms

2. Production, 5.12 in, 4.95 in, 11.00 fms

PERF - CARO (UPPER), 6.949.00, 7,002.00

PERF - CARO (LOWER), 7,071.00, 7,066.00

PICURED CLIFFS (final)

MESA VERDE (LEGAL TOP) (final)

BENTONITE (final)

CLIFFHOUSE (final)

MENEFEE (final)

POINT LOOKOUT (final)

MAVCOE (final)
Hydraulic Frac: 8/11/1960, Stage Summary:
42,000 gal. water
42,000 gal. sand (20-40 mesh) sand (34,000 in formation)
1000 gal. 15% HCl
75 Balls
2,100-2,400 pig (3500 psig sandout) 40 Ball

DJ


Hydraulic Frac: 7/20/1960, Stage Summary:
22,000 gal. water
22,000 gal. sand (20-40 mesh) sand (14,000 in formation)
750 gal. 15% HCl
25 Balls
2,000 pig (3500 psig sandout) 40 Ball

END: 7,932.00, Cleaned out to 7,932.00

www.gelston.com

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Report Printed: 5/6/2019



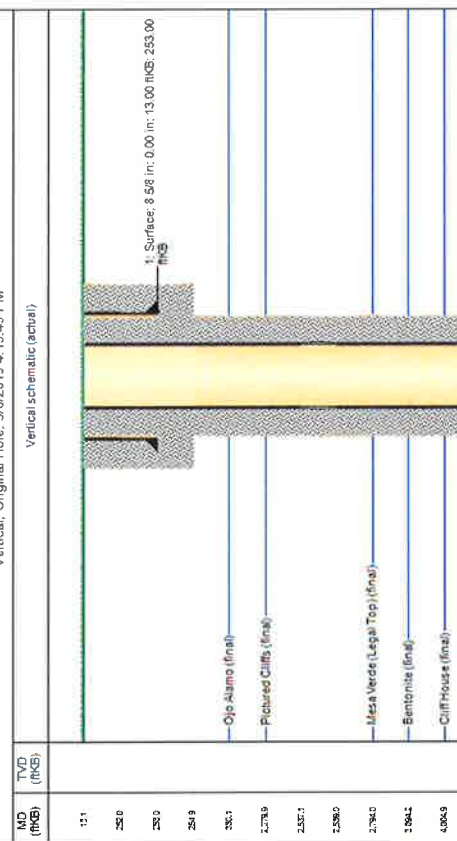
Hilltop Energy Company

Current Schematic - Version 2

Well Name: (PRE-IMPORT) NEUMAN #1E

Date of Print	Barrels per Day (BPD)	Field Name	Well Completion Type
5/5/2019	3004524388	C-20-31A-12W	Vertical
Countdown (hrs)	Original Well Location (R)	County (State)	State (Country)
5,991.00	5,004.00	13.00	NEW MEXICO

Vertical, Original Hole, 5/6/2019 4:13:49 PM

MD (ft)	TVD (ft)	Vertical schematic (actual)
12.1		
25.9		
29.0		
29.9		
35.1		
2,73.9		
2,85.1		
2,88.0		
2,794.0		
3,944.2		
4,904.9		
4,427.0		
4,721.1		
5,143.0		
5,143.0		
5,169.9		
5,271.9		
5,881.9		
6,675.0		
6,982.9		
7,982.1		
7,169.9		
7,172.9		
7,182.1		

Hydraulic Frac: 1/26/1981: Acidized w/ 500 gal Frac w/ 500,000 gal 30% gel 7.12% HCL sand Max tr pr 3300 psi. Avg tr pr 3000. Avg inj rate 28 BPD.

PROD: 7,095.00

PERF: 1/26/1981

PERF: 1/26/1981

2. Production: 4.12 in, 4.00 in, 13.00 ft. Nature of completion: 4.12 in, 4.00 in, 13.00 ft. Count down: 5,991.00 hrs

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