BEFORE THE OIL CONSERVATION DIVISION EXAMINER HEARING JULY 11, 2019

CASE No. 20642

SAN JUAN 010E 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. 20642

AFFIDAVIT OF ROB CARLSON IN SUPPORT OF CASE NO. 20642

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 five Mesaverde gas wells in the same standard 310-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 equivalent.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. A
Submitted by: Hilcorp Energy Company
Hearing Date: July 11, 2019
Case # 20642

- 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 310-acre, more or less, spacing and proration unit in the Blanco-Mesaverde Gas Pool comprised of the W/2 of Section 10, Township 30 North, Range 10 West, San Juan County, New Mexico, in which the following four wells are currently completed and producing:
 - a. San Juan 010 Well (API No. 30-045-09612), Sec. 10, T30N, R10W (Lot 13);
 - b. San Juan 010A Well (API No. 30-045-22753), Sec. 10, T30N, R10W (Lot 3);
 - c. San Juan 010B Well (API No. 30-045-29862), Sec. 10, T30N, R10W (Lot 11); and
 - d. San Juan 010C Well (API No. 30-045-31015), Sec. 10, T30N, R10W (Lot 5).
- 8. Hilcorp now proposes to simultaneously dedicate and produce the following fourth well within the same standard spacing and proration unit, at the following location:
 - a. San Juan 010E Well (API No. 30-045-33886), Sec. 10, T30N, R10W (Lot 13).
- 9. This will be the fifth well within the same spacing unit with three wells in the same quarter section and two wells in the same quarter-quarter section equivalent, 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 **San Juan 010E**Well (API No. 30-045-33886) within the W/2 of Section 10, 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 and two wells in the same quarter-quarter section equivalent (Lot 13).

- 11. The 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 wells 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 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 spacing unit.

- 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.

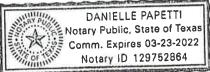
 FURTHER AFFIANT SAYETH NAUGHT.

Rob Carlson

COUNTY OF HARPIS

SUBSCRIBED and SWORN to before me this _____ day of July, 2019 by Rob

Carlson.



NOTARY PUBLIC

My Commission Expires:

3/23/2022

13194348_v1



Poperator FEG. Parerica Production Company FEC. FEC.	Well Name San Juan 010 (30-045-09612)	Ownership Type OPERATOR	Locardon W2 DRILLBLOCK	BA#	Owner Name Hilcoro San Juan, I P	Address 1	Cley	8	Surface
merica Production Company merica Production Company	San Juan 010 (30-045-0961Z)	OPERATOR	WZ DRILLBLOCK	-	d acili ac v				T I
merica Production Company merica Production Company	the same and the same and the				in a supplier of	1111 Travis Street	Houston		DEM
merica Production Company	Atlantic B LS 001 (30-045-09966)	Offset Operator	N2 NW Drillblock		BP America Production Company	737 N Eldridge Parkway	Houtson		BLM
	Atlantic B LS 003A (30-045-22989)	Offset Operator	S2 NW Drillblock	1066712	BP America Production Company	737 N Eldridge Parkway	Houtson		BLM
	Sunray E 001 (30-045-09747)	Offset WIO	W Drillblock	300	Hilcorp San Juan, LP	1111 Travis Street	Houston		BLM
	Atlantic D Com B 003 (30-045-09531)	Offset WIO	N2 SW Drillblock		Hilcorp San Juan, LP	1111 Travis Street	Houston		State
					ACCORD DU LAC PARTNERSHIP LLP	PO BOX 676281	RANCHO SANTA FE	-	5281
					BP AMERICA PRODUCTION COMPANY	PO BOX 848103	DALLAS		8103
					CAROLYN NIELSEN SEDBERRY REV TR	CAROLYN NIELSEN SEDBERRY TTEEJOHN B SEDBERRY POA FOR TTEEPO BOX 1258	FARMINGTON		1258
					CEEFAM LLC	PO BOX 1258	FARMINGTON	_	
					CROSS TIMBERS ENERGY LLC		FT WORTH		
				1047622 CYREN	CYRENE INMAN	BANK OF AMERICA NA PO BOX 840738	DALLAS	TX 75284-0738	0738
				1145911 IMINE	IMMERALS LLC	5 INVERNESS DR E	ENGLEWOOD		
				1139508 JOANN	JOANN BRIGGS	DBA JRB INVESTMENTS LLC6729 ACADEMY RD NE STE D	ALBUQUERQUE	NM 87109	
				1139422 MARC	MARCIA L BERGER EDUCATIONAL FNDN	PETROLEUM ASSET MGMT LLC AGENTPO BOX 745	HOBBS	NM 88241	
				1139287 PENNI	PENNIES FROM HEAVEN LLC	BANK OF AMERICA AGENTPO BOX 840738	DALLAS	TX 75284-0738	0738
					PRODUCTION GATHERING CO LP	8150 N CENTRAL EXPWY STE 1475	DALLAS		
				1139655 R B NI	R B NIELSEN TRUST SEPT 8 2010	KARIN DALE NIELSEN TRUSTEE1200 DANBURY DR	MANSFIELD	TX 76063	
				1139509 RAND	RANDOLPH BRIGGS	DBA RHB ENTERPRISES LLC6729 ACADEMY RD NE STE D	ALBUQUERQUE	NM 87109	
				1139494 ROBEF	ROBERT UMBACH CANCER FOUNDATION	ZIA DATA SEARCH CORP AGENTPO BOX 2188	ROSWELL	NM 88202-2188	2188
					SOUTHLAND ROYALTY COMPANY LLC	C/O DRILLINGINFO MAILPO BOX 161987	AUSTIN		
					WILLIAM BRIGGS	DBA WCB INVESTMENTS LLC6729 ACADEMY RD NE STE D	ALBUQUERQUE		
				1139673	WWR ENTERPRISES INC	C/O PETROLEUM ASSET MANAGEMENT LLCPO BOX 745	HOBBS	NM 88241	
HEC	Atlantic D Com E 006A (30-045-29310)	Offset WIO	SZ SW Drillblock		Hilcorp San Juan, LP	1111 Travis Street	Houston	ř	State
					ACCORD DU LAC PARTNERSHIP LLP	PO BOX 676281	RANCHO SANTA FE	5	6281
				1066712 BP AN	BP AMERICA PRODUCTION COMPANY	PO BOX 848103	DALLAS		8103
					ET VIE VEGTEGATS MISSING MV IOUAG	CAROLYN NIELSEN SEDBERRY TTEE	FARMINGTON	NM 87499-1258	1258
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				1146420 CEEFA	CEEFAMILC	PO BOX 1258	FARMINGTON	NM 87499	
						BANK OF BMFRICA NA	DALLAS	TX 75284-0738	0738
				1047622 CYREN	CYRENE INMAN	PO BOX 840738			
				1139888 HERBI	HERBERT KAI	PO BOX 2305	CORTARO	AZ 85652-2305	2305
				1145911 IMINE	IMINERALS LLC	S INVERNESS DR E	ENGLEWOOD	CO 80112	
				NACI ROSPETT	DANN BRIGGS	DBA JRB INVESTMENTS LLC	ALBUQUERQUE	NM 87109	
						6729 ACADEMY RD NE STE D			
				1139422 MARC	MARCIA L BERGER EDUCATIONAL FNDN	PETROLEUM ASSET MGMT LLC AGENT	HOBBS	NM 88241	
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				1139287 PENN	PENNIES FROM HEAVEN LLC	DO BOX 840738	DALDO		07.20
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					CACL O TOTAL PRINCE MANAGEMENT OF CALL	KARIN DALE MELSEN TRUSTEE	MANSFIELD	TX 76063	
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				1139509 RANDOLPH BRIGGS	OLPH BRIGGS	DOA RHB ENTERPRISES LLC	ALBUQUERQUE	NM 87109	
						6/29 ACADEMY RD NE STE D			60.75
				1139494 ROBE	ROBERT UMBACH CANCER FOUNDATION	ZIA DATA SEARCH CORP AGENT	ROSWELL	NM 88202-2188	-2188
						PO BOX 2268	NITSIIA	78716	
				T138989 SOUT	SOUTHLAND ROYALTY COMPANY LLC	PO BOX 161987			
				1139530 WILLIAM BRIGGS	AM BRIGGS	DBA WCB INVESTMENTS LLC	ALBUQUERQUE	NM 87109	
						C/O PETROLEUM ASSET MANAGEMENT LLC	HOBBS	NM 88241	
				1139673 WWR	WWR ENTERPRISES INC	PO BOX 745			
HEC	Sunray B 001 (30-045-09449)	Offset WIO	S Drillblock	113604 300 Hilcor	Hilcorp San Juan, LP	1111 Travis Street	Houston	TX 77002	
	Sunray A 001 (30-045-09540)	Offset WIO	SE Drillblock	300	Hilcorp San Juan, LP	1111 Travis Street	Houston	TX 77002	
	Sunray A 002 (30-045-09750)	Offset WIO	E Drillblack		Hilcorp San Juan, LP	1111 Travis Street	Houston		
BP America Production Company	Koch LS 001 (30-045-09915)	Offset Operator	NE Drillblock	1066712 BP An	BP America Production Company	737 N Eldridge Parkway	Houtson	97077 XT	Fee/BLM

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. A-2
Submitted by: Hilcorp Energy Company
Hearing Date: July 11, 2019
Case # 20642

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. 20642

<u>AFFIDAVIT</u>

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 10th day of July, 2019 by Adam G. Rankin.

My Commission Expires:

otary Public



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

June 21, 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 July 11, 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.

dam G. Rankin

ATTORNEY FOR HILCORP ENERGY COMPANY

Alaska

Idaho

Colorac

POSTAL DELIVERY REPORT OCD 20642 SJ 010E

TrackingNo	TransactionDate	TransactionDate ToCompanyName	ToName	DeliveryAddress	City	State	Zip	USPS Status
9414810898765037644484	06/20/2019	C/O PETROLEUM ASSET MANAGEMENT LLC	WWR ENTERPRISES INC	PO Box 745	Hobbs	ΣN	88241-0745	Your item was delivered at 11:43 am on June 26, 2019 in HOBBS, NM 88240.
9414810898765037644460	06/20/2019	C/O DRILLINGINFO MAIL	SOUTHLAND ROYALTY COMPANY LLC	PO Box 161987	Austin	×	78716-1987	This is a reminder to arrange for redelivery of your item or your item will be returned to sender.
9414810898765037644477 06/20/2019	06/20/2019		WILLIAM BRIGGS DBA WCB INVESTMENTS LLC	6729 Academy Rd NE Ste D	Albuquerque	ΣN	87109-3370	The delivery status of your item has not been updated as of June 24, 2019, 11:34 pm. We apologize that it may arrive later than expected.
9414810898765037644446 06/20/2019	06/20/2019		RANDOLPH BRIGGS DBA RHB ENTERPRISES LLC	6729 Academy Rd NE Ste D	Albuquerque	MM	87109-3370	Your item was delivered to an individual at the address at 11:22 am on June 24, 2019 in ABBUQUERQUE, NM 87109.
9414810898765037644453	06/20/2019	C/O ZIA DATA SEARCH CORP AGENT	ROBERT UMBACH CANCER FOUNDATION	PO Box 2188	Roswell	MN	88202-2188	Your item was delivered at 11:00 am on June 25, 2019 in ROSWELL, NM 88201.
9414810898765037644422	06/20/2019		PRODUCTION GATHERING CO LP	8150 N Central Expy Ste 1475	Dallas	¥	75206-0506	Your item was delivered to an individual at the address at 12.29 pm on June 24, 2019 in DALLAS, TX 75.206.
9414810898765037644439	06/20/2019	C/O KARIN DALE NIELSEN TRUSTEE	R B NIELSEN TRUST SEPT 8 2010	1200 Danbury Dr	Mansfield	¥	76063-3809	This is a reminder to arrange for redelivery of your item or your item will be returned to sender.
9414810898765037644408	06/20/2019	C/O PETROLEUM ASSET MGMT LLC AGENT	MARCIA L BERGER EDUCATIONAL FOUNDATION	PO Box 745	Hobbs	MΝ	88241-0745	Your item was delivered at 11:43 am on June 26, 2019 in HOBBS, NM 88240.
9414810898765037644415 06/20/2019	06/20/2019	C/O BANK OF AMERICA AGENT	PENNIES FROM HEAVEN LLC	PO Box 840738	Dallas	¥	75284-0738	Your item was delivered at 8:55 am on June 24, 2019 in DALLAS, TX 75284.

						on June 28, 2019 in
						FARMINGTON, NM
						87401.
						Your package will
						arrive later than
						expected, but is still on
						its way. It is currently
0.201,01,00,00	1					in transit to the next
3414910336763037644134 06/20/2013	BP America Production Company	737 N Eldridge Pkwy	Houston	۲	77079-4411	facility.
						Your item was picked
						up at a postal facility at
						3:15 pm on June 27,
						2019 in RANCHO
3414910838763037644500 06/50/5019	ACCORD DU LAC PARTNERSHIP LLP	PO Box 676281	Rancho Santa Fe CA	S	92067-6281	SANTA FE, CA 92091.



AFFIDAVIT OF PUBLICATION

Ad No. 0001289419

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 newsaper 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):

06/26/19

Legal Clerk

Subscribed and sworn before me this 26th of June 2019.

State of W. County of Brown NOTARY PUBLIC

My Commission Expires

Ad#:0001289419 P O : Hubbard # of Affidavits :0.00



SEFORE THE OIL CONSERVATION DIVISION

Hearing Date: July 11,

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 July 11,2019, 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 1, 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.)

ALL WORKING INTEREST OWNERS IN THE SUBJECTSPACINGUNIT AND OFFSET TING OPERATORSOR LEASED MINERAL IN-TEREST OWNERS, INCLUDING: BP AMERICA PRODUCTION COMPANY; ACCORD DU LAC PARTNERSHIP LLP, SEDBERRY REV TR, CAROLYN NIELSEN CAROLYN NIELSEN SEDBERRYTTEE, JOHNB. SEDBERRYPOAFOR TTEE; CEEFAMLLC; CROSSTIMBERS ENERGY LLC; CYRENE INMAN, HER HEIRS AND DEVISEES, C/O BANK OF AMERICA NA; IMINERALS LLC; JOANN BRIGGS, DBA JRBIN-VESTMENTS LLC, HER HEIRS AND DEVISEES MARCIA L. BERGEREDUCATIONAL FNDN, PETROLEMAN PETROLEMA TROLEUMASSETMGMT LLC, AGENT; PENNIES
FROM HEAVEN LLC, BANK OF AMERICA
AGENT; PRODUCTIONGATHERINGCO LP; R B
NIELSEN TRUST SEPT 8 2010, KARIN DALE NIELSEN TRUSTEE; RANDOLPH BRIGGS, HIS HEIRS AND DEVISEES, DBA RHB ENTERPRISE LLC; ROBERTUMBACH CANCERFOUNDATION ZIA DATA SEARCH CORP, AGENT; SOUTH-LAND ROYALTY COMPANY LLC, C/O DRILLINGINFOMAIL; WILLIAM BRIGGS, DBA WCB INVESTMENTS LLC; WWR ENTERPRISE INC, C/O PETROLEUMASSET MANAGEMENT LLC; HERBERT KAI, HIS HEIRS AND DEVISEE

CASE 20642: Application of Hilcorp Ener-

gy Company for an Exception to the Well Density Requiren ts 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 comand simultaneously produce Mesaverde gas wells in the same standard 310acre, more or less, spacing and proration unit, with three wells in same quarter section and two wells in the same quarter-quarter section equivalent (Lot 13). Hilcorp further seeks approval for the proposed location of the San Juan 010E Well (API No. 30-045-33886) in the Mesaverde formation with a surface location in Lot 13 within the W/2 of Section 10, Township 30 North, Range 10 West, NMPM, San Juan County, New Mexico, and authorization to simultaneously complete and produce the San Juan 010E Well from the Blanco-Mesaverde Gas Pool. Said area is located approximately 6 miles east of Aztec, NM.

Legal No. 1289419 published in The Daily Times on June 26, 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. 20642

AFFIDAVIT OF ALEX LIANG IN SUPPORT OF CASE NO. 20642

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

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. C

Submitted by: Hilcorp Energy Company Hearing Date: July 11, 2019 Case # 20642 gas and lower-than-expected gas recoveries where additional well bores or well completions are necessary to adequately drain remaining gas reserves.

- Juan 010E Well (API No. 30-045-33886) within the W/2 of Section 10, 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 and second well in the same quarter-quarter section equivalent within the spacing unit. I anticipate that it will help drain the area to the southeast.
- 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 recomplete 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.

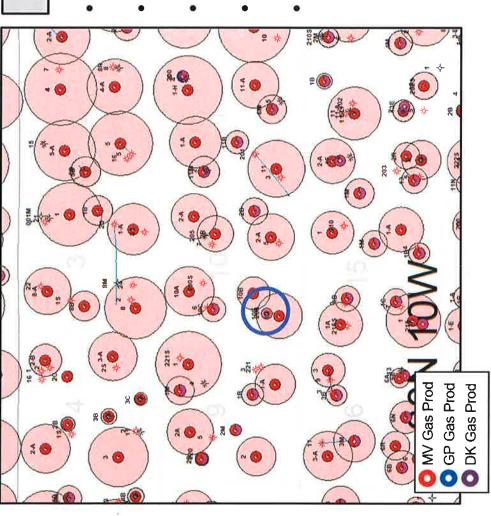
Alx Liang
Alex Liang

STATE OF NEW MEXICO)
COUNTY OF Sanduar	$\mathcal{L}_{\mathcal{L}}}}}}}}}}$
SUBSCRIBED and SWO	ORN to before me this <u>3</u> day of July, 2019 by Alex
Liang.	
	NOPARY PUBLIC
Ü	19
My Commission Expires:	OFFICIAL SEAL LISABETH JONES NOTARY PUBLIC - STATE OF NEW MEXICO
1/2/2072	My commission expires: 1/2/2017

13199498_v1

San Juan 10E





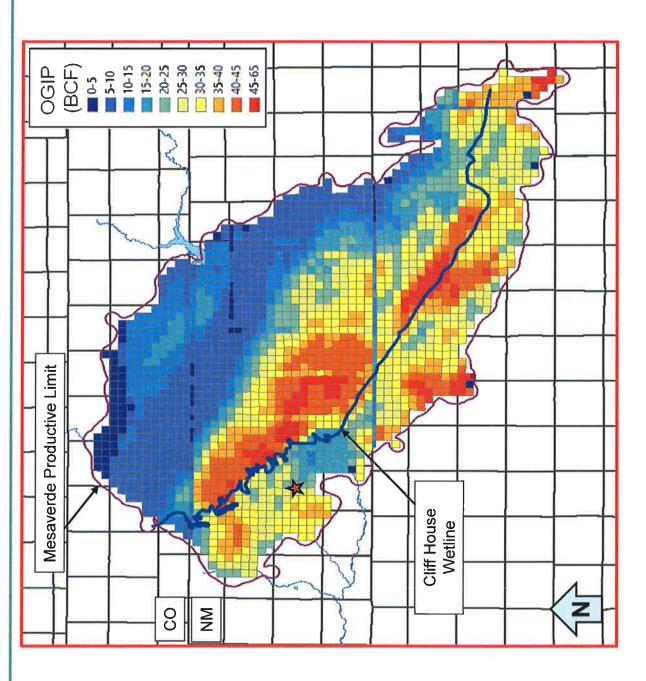
Well Specifics

- SW10 30-10 3004533886 2007 drill
- 3rd MV completion in 1/4 section
- 500' from nearest MV producer
- Help drain area to the southeast 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: July 11, 2019 Case # 20642



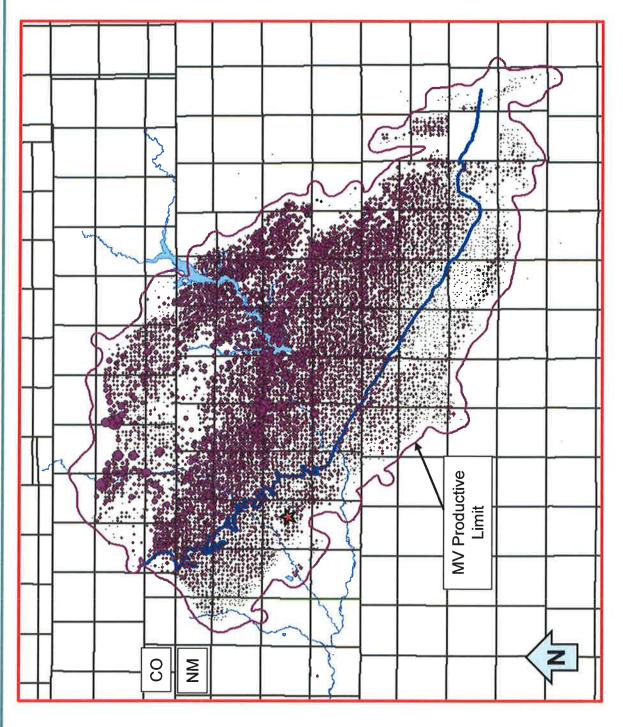
MV Original Gas In Place



Case # 20642

MV EUR and Drainage Radius





BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. C-3

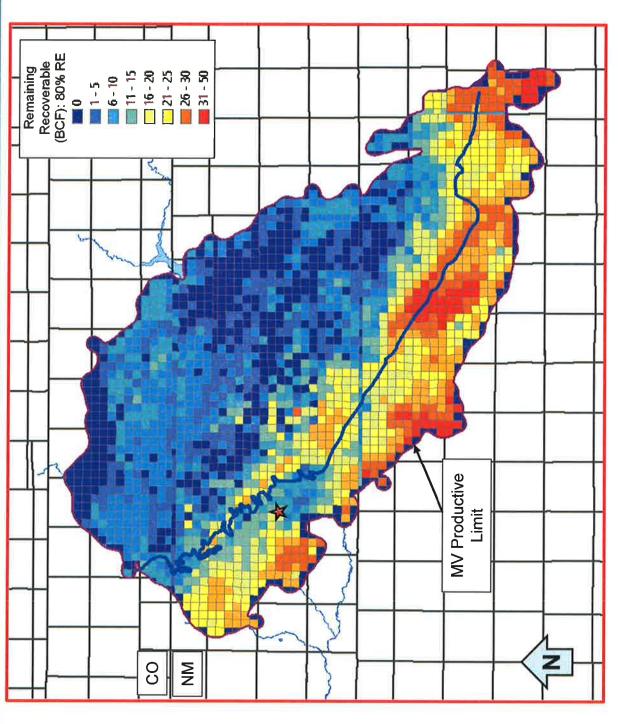
Submitted by: Hilcorp Energy Company

Hearing Date: July 11, 2019

Case # 20642

MV Remaining Recoverable Gas





BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico
Exhibit No. C-4
Submitted by: Hilcorp Energy Company
Hearing Date: July 11, 2019
Case # 20642



San Juan 10E

EUR / RF%	5.3 Bcf / 59%	20.5 Bcf / 44%	172.7 Bcf / 44%
Remaining GIP	4.7 Bcf	29.5 Bcf	254.2 Bcf
CTD / RF%	4.2 Bcf / 47%	16.7 Bcf / 36%	142.2 Bcf / 36%
Section Equivalent OGIP	35.6 Bcf	46.2 Bcf	44.6 Bcf
Volumetric OGIP	8.9 Bcf	46.2 Bcf	396.4 Bcf
Reference Area	Qtr Section	Section	9 Section

Remaining Gas in Place in Quarter Section of 4.7 Bcf

Cumulative Recovery Factor to Date 47% and 36% in the Quarter Section and Section, respectively

Considerable gas remaining in area with opportunity to recover additional volumes utilizing existing wellbore

Exhibit No. C-5
Submitted by: Hilcorp Energy Company
Hearing Date: July 11, 2019
Case # 20642



6/20/2019 rface: 9 5/8 in: 9:00 in; 16:00 fbtB: 147,66 3 Production: 4 (/2 in: 4,02 an; 15.95 fb/G) 7,894 00 fb/G 2. Insemediate; 7 in: 6 45 in: 15 95 ft/B; 3 442 50 ft/B; PERF DAKOTAL 7,487,00-7,559,00,111,020,07 VERTICAL, Original Hole, 6/20/2019 12:59:03 PM Current Schematic - Version 2 Vertical schematic (actual) Page 111 draulic Fracture: 1/19/2007; FRAC DAKOTA UPPER CLIFFHOUSE (final - FRUTLAND (final) - PICTURED CUPPS (final) -MENETEE (final) -POINTLOOKOUT (final) -MANCOS (final) SLIFFHOUSE(final) THE PROPERTY. GREENHORN (final OUD ALAMO (final GRANEROS (final) ARTUNID (Sna) Well Name: SAN JUAN #10E Ifferen Energy Company 1000 2 P

San Juan 10E

Santa Fe, New Mexico
Exhibit No. C-6

Submitted by: Hilcorp Energy Company

Hearing Date: July 11, 2019 Case # 20642