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

AMENDED APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC FOR COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO.

CASE NO. 16284

AFFIDAVIT OF BRANDON PATRICK

Brandon Patrick of lawful age and being first duly sworn declares as follows:

1. My name is Brandon Patrick. I work for Novo Oil & Gas Northern Delaware, LLC ("Novo") 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 Novo in this matter and I am familiar with the status of the lands involved in this case.

4. None of the pooled parties named in this application have indicated opposition, therefor opposition at hearing is not anticipated.

5. The application in this case was amended in accord with the agreement reached between Novo and BTA Oil Producers to limit the spacing unit to the E/2E/2 of Section 5.

6. Exhibit No. 1 is a Form C-102 for the proposed well. The proposed standard horizontal spacing and proration unit encompassing 160.36 acres is reflected as a red outline on the C-102. The Rana Salada Fed Com 05 124H Well will be drilled within the Cedar Canyon; Bone Spring, (Pool Code 11520). The northern-most take-point and the southern-most take-point of the completed interval will be orthodox.

7. **Exhibit No. 2** includes a copy of the well proposal letter Novo sent to the other working interest owner within the proposed 160.36-acre spacing unit, together with a copy of the Authority for Expenditure (AFE) included with the well proposal letter.

8. There are no existing depth severances in the Bone Spring formation (Cedar Canyon; Bone Spring, Pool Code 11520) underlying Lot 1 (NE/4NE/4), SE/4NE/4, and E/2SE/4 of Section 5, Township 23 South, Range 29 East, Eddy County, New Mexico.

9. Exhibit No. 3 is a plat and diagram describing the Bone Spring Execution Plan for the wells proposed in Case Nos. 16282, 16283 and 16284. This plat reflects that the stand-up spacing unit for the Rana Salada Fed Com 05 124H Well in the E/2E/2 of Section 5 to be drilled in the 2nd Bone Spring Sand interval under this application intersects the proposed laydown spacing units for the Rana Salada Fed Com 0504 133H and 134H wells to be drilled in the 3rd Bone Spring Sand interval in the S/2 of Sections 4 and 5.

10. Although there are no depth severance limitations in the proposed spacing unit in this application, Novo is seeking to pool only the 2nd Bone Spring Sand interval within the Bone Spring formation because the 3rd Bone Spring interval will be developed by the **Rana Salada Fed Com 0504 134H and 133H wells** proposed in Case Nos. 16282 and 16283, respectively.

11. Exhibit No. 4 is a description of the depth severance proposed for this case.

12. The testimony being offered today by Novo's geologist and completions engineer will explain why no communication is expected between the 1st, 2nd Bone Spring Sand intervals nor between the 2nd and 3rd Bone Spring Sand intervals within these proposed horizontal spacing units.

13. The landing zone of any infill well within this spacing unit will not be closer to the depth severance footage without approval by the Division on Novo's application for same and after notice and opportunity to be heard.

14. Case Nos. 16282, 16283 and 16284 all request that Novo Oil & Gas Northern Delaware, LLC be designated as the operator of the wells and spacing units proposed.

15. **Exhibit No. 5** is a plat outlining the proposed standard horizontal spacing unit and mineral ownership as of July 18, 2018 when Novo filed its amended application. This exhibit shows the interest owners and the percentage of their interest in each tract as well as a unit recapitulation showing the percentage of each interest owner in the spacing unit. The basis of this ownership is both a title opinion and an updated title report.

16. A diligent search was made of the public records in the county where the lands within the spacing unit are located, as well as internet searches, to obtain accurate mailing addresses for the mineral interest owners to be noticed.

17. Novo made a good faith effort to obtain the voluntary joinder of the other working interest owner in the proposed unit and well.

18. The parties to be pooled are identified in **Exhibit 6**.

19. The proposed spacing and proration unit includes federal and fee lands and lays within the Potash Area.

20. Novo has estimated well costs of \$6,797,000, as reflected in the Authority for Expenditure (AFE) which was attached to its proposal letters. The estimated cost of the well

set forth therein is comparable to the costs of other wells of similar depths and length drilled in this area of New Mexico and is fair and reasonable.

21. Novo requests overhead and administrative rates for drilling and producing the proposed well at \$8,000 per month while drilling and \$800 per month while producing. These rates are fair and are consistent with what other operators are charging in this area for similar type wells. Novo requests these rates be adjusted periodically as provided in the COPAS Accounting Procedure.

22. Novo requests authority to recover its costs of drilling, equipping and completing this well, and imposition of a 200% penalty for the risk assumed by Novo in drilling and completing this well against any working interest owner who does not voluntarily participate in the drilling of the well.

23. The Exhibits attached to this Affidavit were either prepared by me or compiled under my direction and supervision.

24. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

25. The granting of this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

FURTHER AFFIANT SAYETH NOT

BRANDON PATRICK

STATE OF OKLAHOMA

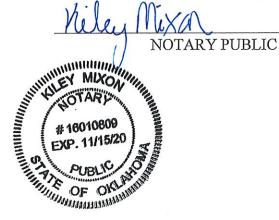
COUNTY OF OKLAHOMA

SUBSCRIBED and SWORN to before me this <u>19</u>th day of <u>Feb (wary</u> 2019 by Brandon Patrick.

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My Commission Expires: 11/15/20



District I 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 District II 311 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

AMENDED REPORT

		W	ELL LC	OCATIO	N AND ACI	REAGE DEDI	CATION PL	AT			
¹ API Number				² Pool Cod	e		³ Pool Na	ime			
⁴ Property Code					⁵ Property	Nama			6	Well Number	
Property Code				RANA SALADA FED COM 05					124H		
'OGRID N	٧o.				⁶ Operator	Name				⁹ Elevation	
372920 NOVO O				OIL AN	IL AND GAS NORTHERN DELAWARE, LLC					3017.0	
					Surface	Location					
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/W	est line	County	
1	5	23 S	29 E	£	485	NORTH	1206	EA	ST	EDDY	
			u B	ottom He	ole Location	If Different Fr	om Surface				
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/ W	est line	County	
P	5	23 S	29 E		20	SOUTH	100	EA	ST	EDDY	
¹² Dedicated Acres	¹³ Joint of	Infill ¹⁴ Co	onsolidation	Code ¹⁵ Or	der No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	N89'58'23"E	2641.56 FT		"E 2642.41 FT		" OPERATOR CERTIFICATION
	CORNER SEC. 5	LOT 3 FTP -	100' FNL, 100' FEL	lia	1	I hereby certify that the information contained herein is true and complete to the
	= 32.3417741'N G, $= 104.0153768$ 'W		bist. = 1174.99 FT∽ ∧Ring = N70°56'16"E	14		best of my knowledge and belief, and that this organization either owns a
	SP EAST (FT)		1 and the second second	1206'		working interest or unleased mineral interest in the land including the proposed
N =	= 488215.14	N/4 CORNER SEC. 5		SURFACE		bottom hole location or has a right to drill this well at this location pursuant to
	639533.08	LONG. = 104.0068255'W	1	LOCATION	E	a contract with an owner of such a mineral or working interest, or to a
-24	LOT 4	NMSP EAST (FT)		NE CORNER SEC. 5 ≥	668.63	voluntary pooling agreement or a compulsory pooling order heretofore entered
2708.24		N = 488216.38 E = 642174.05		LAT. = 32.3417246'N	266	by the division.
				$ONG. = 103.9982714'W \\ NMSP EAST (FT) 7$	3	
N00'48'09"E			SALADA FED 5 124H	N = 488213.27 8	50"W	Signature Date
18.	i		= 3017.0'	E = 644815.88	39	Signature Date
- o	י ו	LAT. =	32.3404060'N (NADB)	3) <u>"</u> [S00'	
ž	1		= 104.0021986'W EAST (FT)	N N	0	Printed Name
	1	N = 4	87729.80	EA		
	CORNER SEC. 5	E = 6	43604.50	E/4 CORNER SEC. 5 00		E-mail Address
	= 32.3343323'N = 104.0155256'W			NG. = 103.9983985'W		
	EAST (FT)	NOTE: LATITUDE AND LONG	TUDE COORDINATES ARE	NMSP EAST (FT)		GUDYEVOD CEDEUCATION
	100007.70	SHOWN USING THE NORTH (NADB3). LISTED NEW MEXIC	AMERICAN DATUM OF 1983	N = 485545.40 E = 644784.96		"SURVEYOR CERTIFICATION
E=t	639495.15	COORDINATES ARE GRID (NA	AD83). BASIS OF BEARING	L = 011/01.30		I hereby certify that the well location shown on this plat was
		FAST COORDINATES MODIFIE	D TO THE SURFACE.	62		plotted from field notes of actual surveys made by me or under
토		ELEVATION VALUES ARE NAV	D88.	21	5	my supervision, and that the same is true and correct to the
86	1	BO	TTOM OF HOLE	SE CORNER SEC. 5	60.2	
2686.98	1	LAT,	= 32.3271347'N	AT. = 32.3270813'N	266	best of my belief.
56	-		$G_{-} = 103.9988504'W_{-}$	NMSP EAST (FT)	3	AUGUST 2, 2018 ON F. JARAA
6"E	•1	N [482905.03	N - 482885 03 0	49"	
19,5	i	Ēŧ	644653.63	E = 644753.39	40,	Date of Survey, NEW ME HIGHE
00.4	i	S/4 CORNER	R SEC 5		200-	the internet A
Z SW CO	RNER SEC. 5 32.3269490'N	LAT. = 32,3	270383'N	> - 100' FSL	°'	toxin HARMANIA
	= 104.0156765'W	LONG. = 104.				
	EAST (FT)	NMSP EAS N = 4823		OF HOLE		Signifure and seal of Processional Surveyor
	82821.66 S39456.52	E = 6420	095.38	100'		Certificate Number FILLMON F. JARAMILLO PLS 12797
	S89'07'22"W 2	639.76 FT	S89'29'08"W	2658.70 FT		SURVEY NO. 6300A

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #1

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AP	1#	

Operator Name:	Property Name:	Well Number
NOVO OIL & GAS NORTHERN DELAWARE, LLC	RANA SALADA FED COM 05	124H

# Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitu	ıde	[	L	L	Longitude	I	L	1	NAD

# First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County	
A	5	23S	29E	1	100	NORTH	100	EAST	EDDY	
Latitu 32.3	^{ude} 341451	1		•	Longitude	• 985997			NAD 83	

# Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	5	23S	29E		100	SOUTH	100	EAST	EDDY
Latitu 32.3	^{ide} 327354	6			Longitu	^{de} 9988466			NAD 83

Is this well the defining well for the Horizontal Spacing Unit?

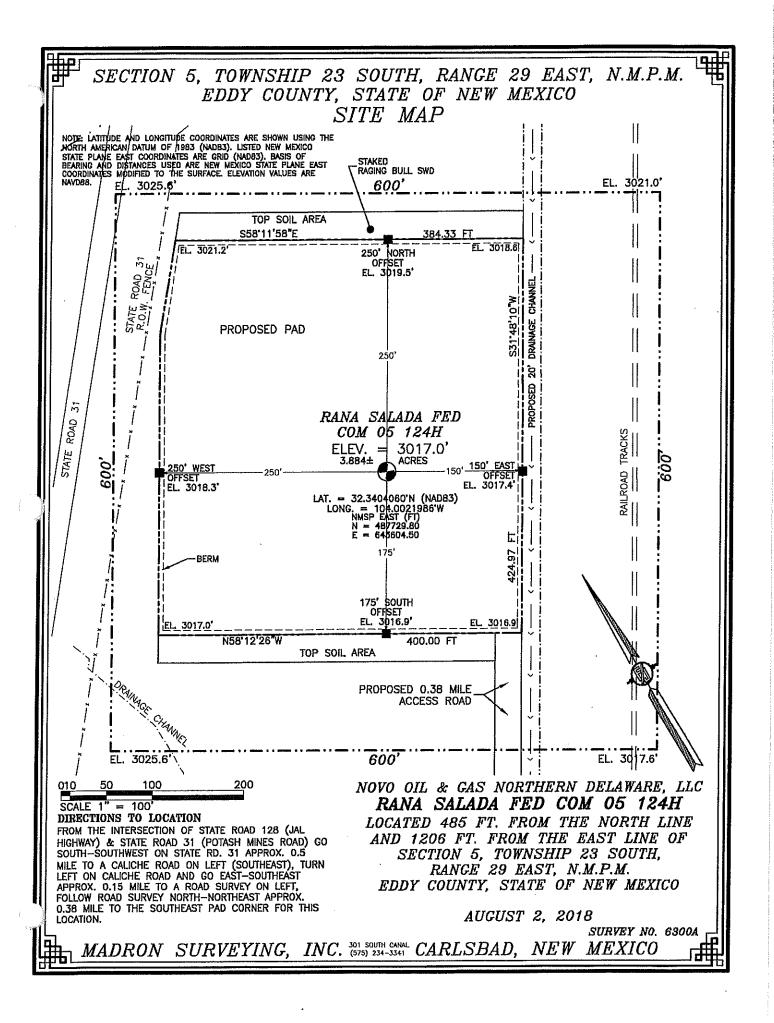
Is this well an infill well?

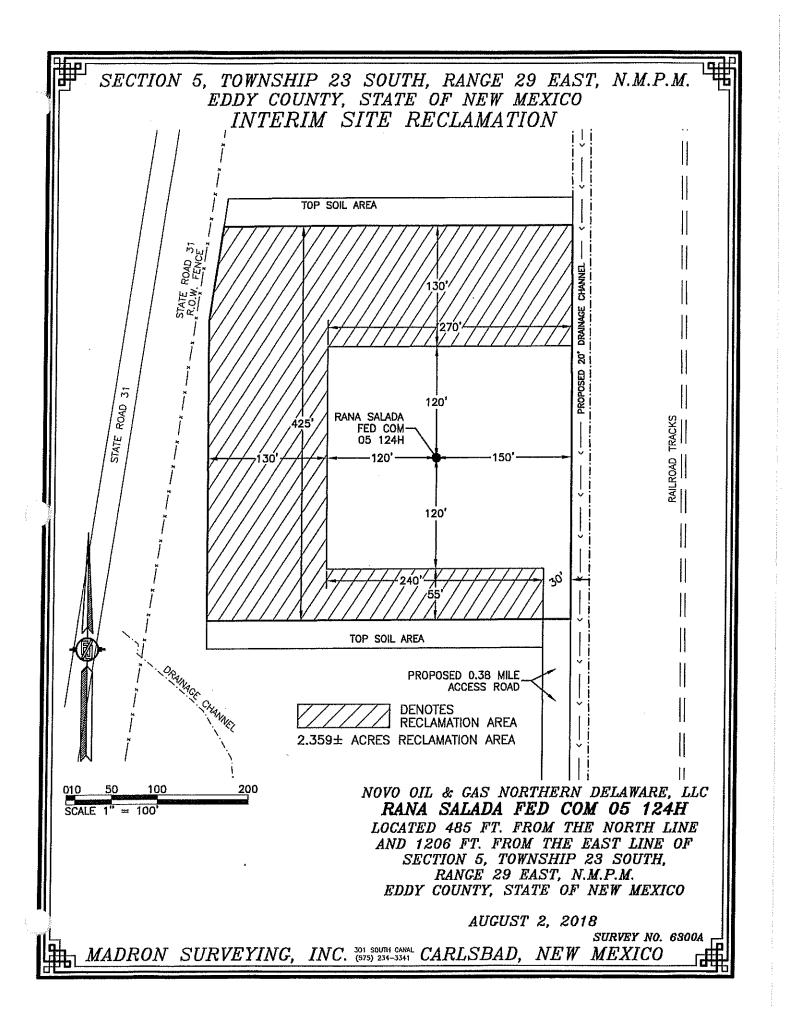
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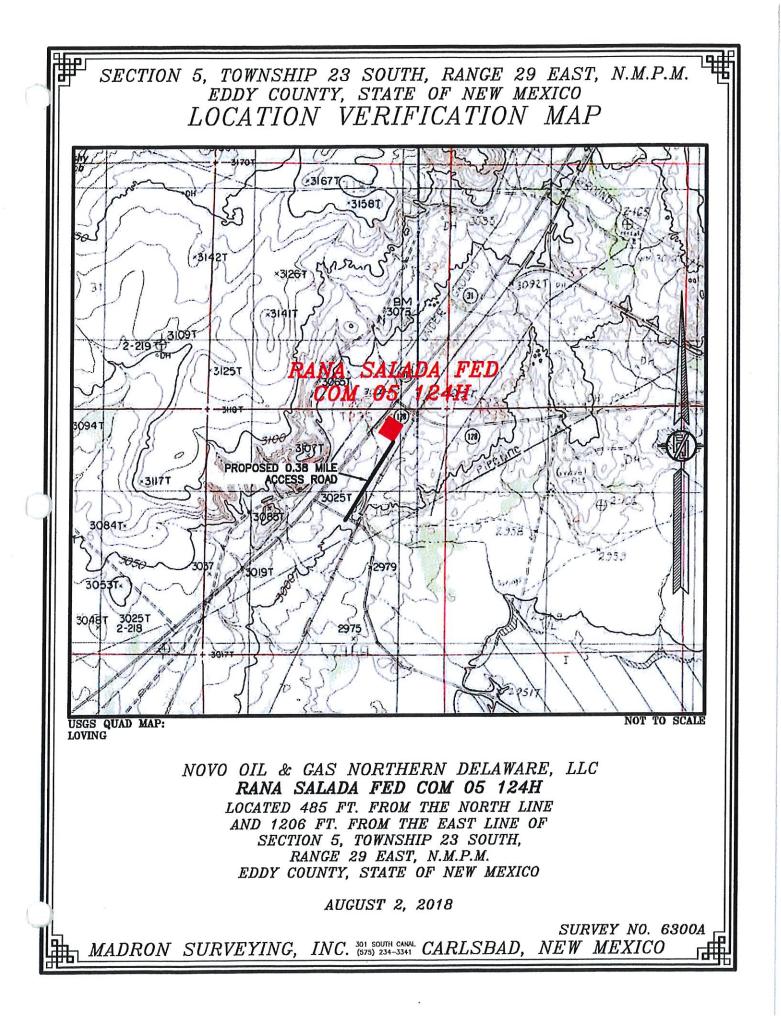
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

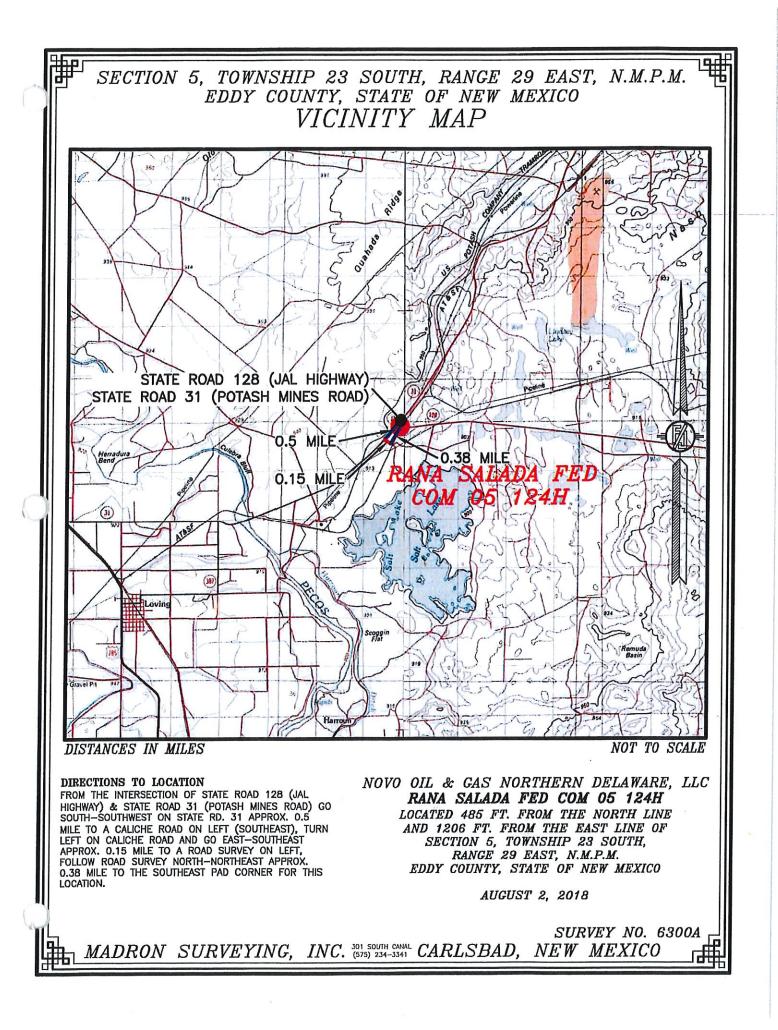
API #		
Operator Name:	Property Name:	Well Number
		 KZ 06/29/2018

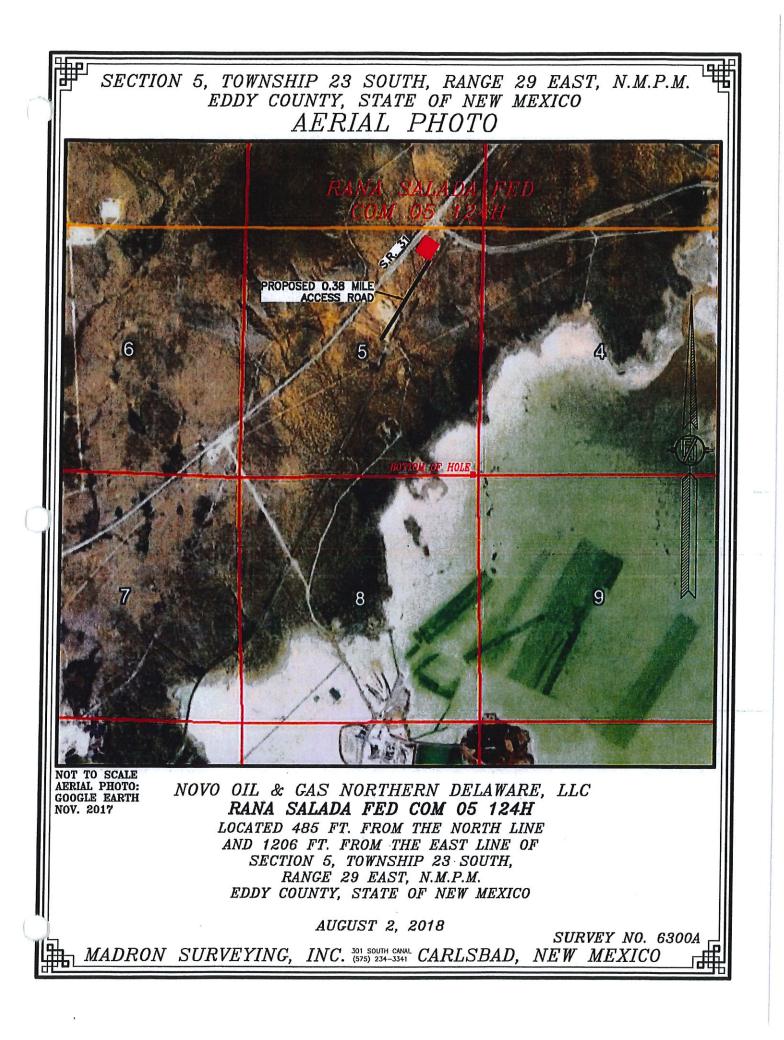
KZ UO/29/2010

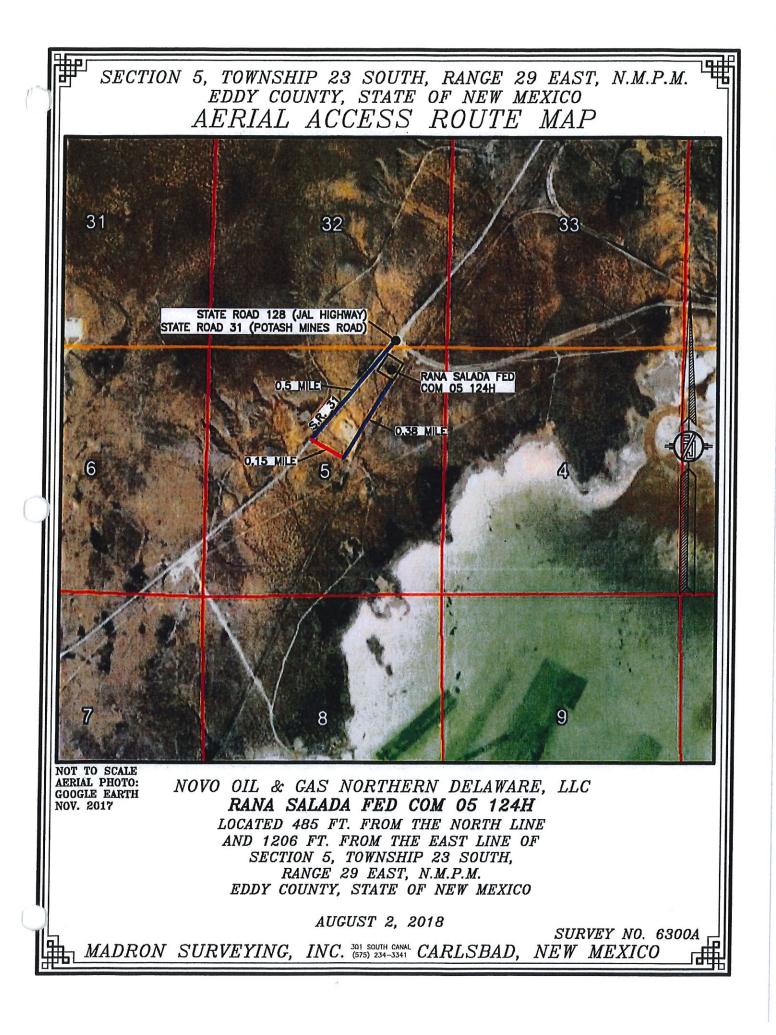


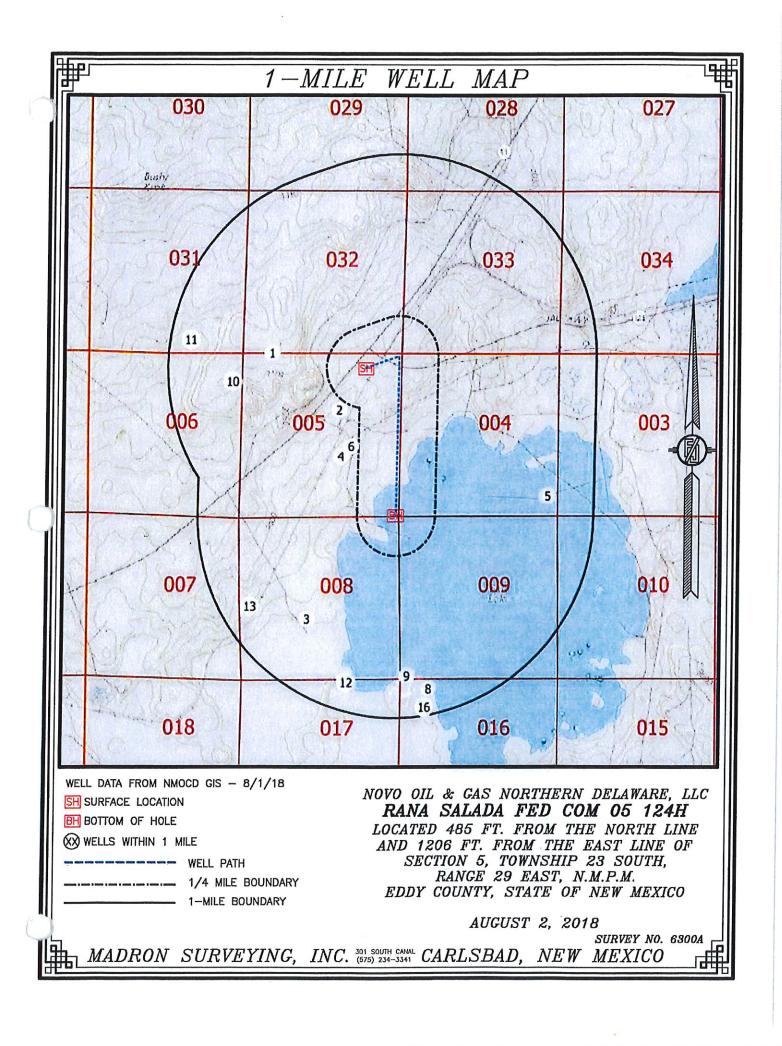


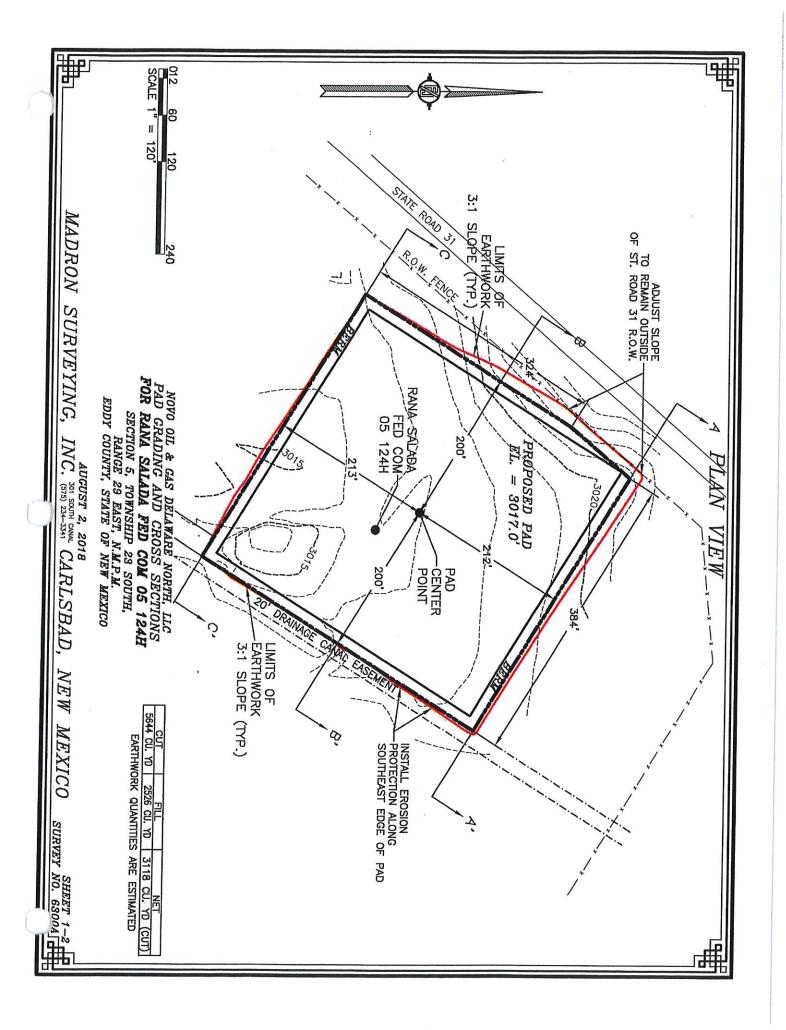


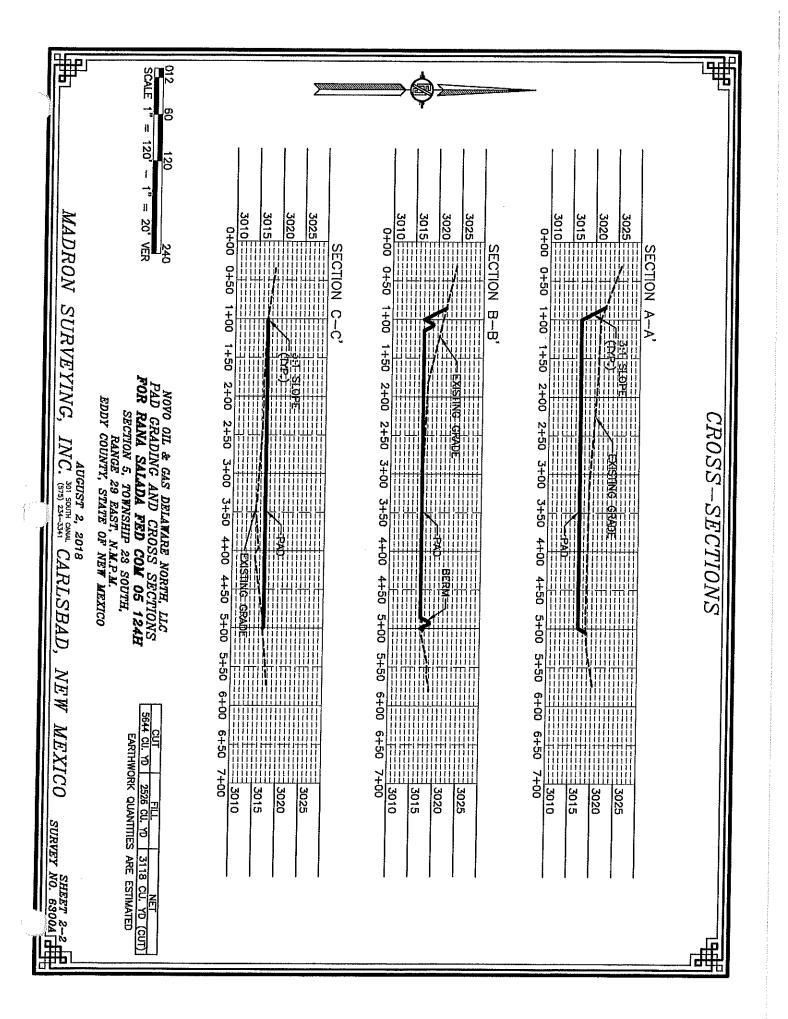


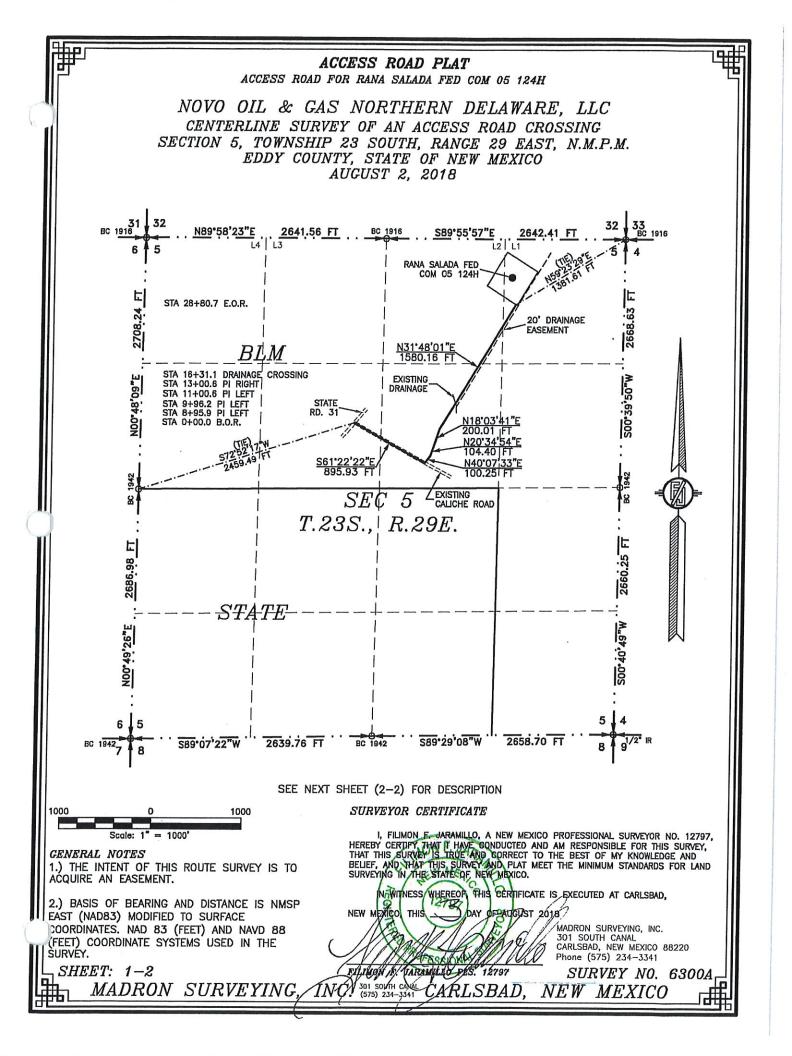












ACCESS ROAD PLAT ACCESS ROAD FOR RANA SALADA FED COM 05 124H

NOVO OIL & GAS NORTHERN DELAWARE, LLC CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING SECTION 5, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO AUGUST 2, 2018

#### DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 5, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 5, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 5, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S72'52'17"W, A DISTANCE OF 2459.49 FEET; THENCE S61*22'22"E A DISTANCE OF 895.93 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N40'07'33"E A DISTANCE OF 100.25 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED; THENCE N40'07'33"E A DISTANCE OF 100.25 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED; THENCE N20'34'54"E A DISTANCE OF 104.40 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED; THENCE N18'03'41"E A DISTANCE OF 200.01 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED; THENCE N31'48'01"E A DISTANCE OF 1580.16 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 5, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS N59'23'29"E, A DISTANCE OF 1381.61 FEET;

SAID STRIP OF LAND BEING 2880.75 FEET OR 174.59 RODS IN LENGTH, CONTAINING 1.984 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	338.99 L.F.	20.54 RODS	0.233 ACRES
SW/4 NE/4	1793.37 L.F.	108.69 RODS	1.235 ACRES
LOT 2	474.18 L.F.	28.74 RODS	0.327 ACRES
LOT 1	274.21 L.F.	16.62 RODS	0.189 ACRES

#### SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797. HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO. GENERAL NOTES 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT. IN WITNESS WHEREOF, MANS SI SERVIFICATE IS EXECUTED AT CARLSBAD, 2.) BASIS OF BEARING AND DISTANCE IS NMSP 2018 AUGUST NEW MEXICO EAST (NAD83) MODIFIED TO SURFACE MADRON SURVEYING, INC. COORDINATES. NAD 83 (FEET) AND NAVD 88 301 SOUTH CANAL FEET) COORDINATE SYSTEMS USED IN THE CARLSBAD, NEW MEXICO 88220 SURVEY. Phone (575) 234-3341 SHEET: 2-2 FILLONGE, KENNINGERSTATIS INC. 101 SOUTH CANAL CARES BAD SURVEY NO. 6300A MADRON SURVEYING, NEW MEXICO

ATTORNEYS AT LAW 500 DON GASPAR AVENUE SANTA FE, NEW MEXICO87505-2626 TELEPHONE (505) 983-8545 FACSIMILE (505) 983-8547 www.bwenergylaw.com

COLORADO NEW MEXICO NORTH DAKOTA UTAH WYOMING

#### CANDACE CALLAHAN

DIRECT: (505) 983-8764 E-MAIL: CCALLAHAN@BWENERGYLAW.COM

October 24, 2018

### VIA CERTIFIED MAIL-RETURN RECEIPT

To: Parties on Exhibit "A"

Re: New Mexico Oil Conservation Division Amended Application for Non-Standard Spacing and Proration Unit and Compulsory Pooling, Case No. 16284 Rana Salada Fed Com 05 124H well

Dear Ladies and Gentlemen:

This letter is to advise you that Novo Oil & Gas, LLC has filed the enclosed amended application for non-standard spacing and compulsory pooling with the New Mexico Oil Conservation Division. This application will be set for hearing before a Division Examiner at 8:15 a.m. on November 15, 2018. The hearing will be held in the Oil Conservation Division's Santa Fe Offices located at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an interest owner in the well unit you may be affected by this application, and you may appear and present testimony. Failure to appear at that time and become a part of record will preclude you from challenging the matter at a later date. Please note the name stated in the enclosed application for the proposed initial well has been changed to the Rana Salada Fed Com 05 124H well as referenced above.

A party appearing in a Division case is required by Division Rule 19.15.4.13:B to file a Pre-Hearing Statement four days in advance of a scheduled hearing. This statement must be filed with the Division's Santa Fe office at the above address and should include: the names of the party and its attorney; 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 need to be resolved prior to the hearing. The Pre-Hearing Statement must also be provided to the undersigned and to the persons listed on Exhibit A.

If you have any questions about this matter, please contact Brandon Patrick at 405-286-4197 or bpatrick@novoog.com.

Very truly yours,

Candace Callahan Attorney for Novo Oil & Gas, LLC

Energy in the Law®

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 EXHIBIT #7-A

## (16284) Exhibit A

Marathon Oil Permian, LLC 555 San Felipe Street Houston, TX 77056 Attention: Chase Rice

TDY Industries, LLC c/o Bank of America, Agent P. O. Box 830308 Dallas, TX 75283

BTA Oil Producers, LLC 104 South Pecos Midland, Texas 79701

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Bureau of Land Management 301 Dinosaur Trail Santa Fe, NM 87508

Wells Fargo Bank, N.A., Trustee of the John Saleh Charitable Foundation 500 West Texas Avenue Midland, TX 79701

Morris E. Schertz and wife, Holly K. Schertz P.O Box 2588 Roswell, NM 88202

Rolla R. Hinkle II P.O Box 2292 Roswell, NM 88202

NOVO Minerals, LP 105 N. Hudson Ave Ste 500 Oklahoma City, OK 73102 Melinda Mueller Personal Representative of the Estate of Philip B. Withrow P.O Box 616 Stamford, TX 79553

Destiny Management, Inc. 104 N. Big Spring, Suite 220 Midland, TX 79701

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SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON	DEL ULEDY
SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON	DELIVERY
Complete items 1, 2, and 3.	
Print your name and address on the reverse	Agent Addressee
so that we can return the card to you.	C. Date of Delivery
Attach this card to the back of the manpiece,	1991 10/29/18
or on the front if space permits.	mitem 1? Ves
If YES, enter delivery address	below: INO
9416 -0002 A	
Marathon Oil Permian, LLC	
555 San Felipe Street	
Houston, TX 77056	
Attention: Chase Rice	
3. Service Type	Priority Mail Express®
Adult Signature	□ Registered Mail™ □ Registered Mail Restricted
9590 9402 4303 8190 8869 16	Delivery Return Receipt for
Collect on Delivery	Merchandise □ Signature Confirmation™
2. Article Number (Transfer from service label)	Signature Confirmation
7018 0680 0002 2179 7541 Restricted Delivery	Restricted Delivery
PS Form 3811, July 2015 PSN 7530-02-000-9053	Domestic Return Receipt
U.S. Postal Service [™]	
CERTIFIED MAIL® RECEIPT Domestic Mail Only For delivery information, visit our website at www.usps.com®. OFFICIAL USE Certified Mail Fee	
For delivery information, visit our website at www.usps.com [®] . OFFICIALUSE Certified Mail Fee s Extra Services & Fees (check box, edd fee as appropriate)	
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Domestic Mail Only         For delivery information, visit our website at www.usps.com*.         O F I C I A L U S E         Certified Mail Fee         Schra Services & Fees (check box, edd fee as appropriate)         Beturn Receipt (lactorpy)       Postmark         Certified Mail Restricted Delivery       Postmark         Here       Adult Signature Required       Postmark         Here       Street and App.1       Marathon Oil Permian, LLC         Street and App.1       555 San Felipe Street	
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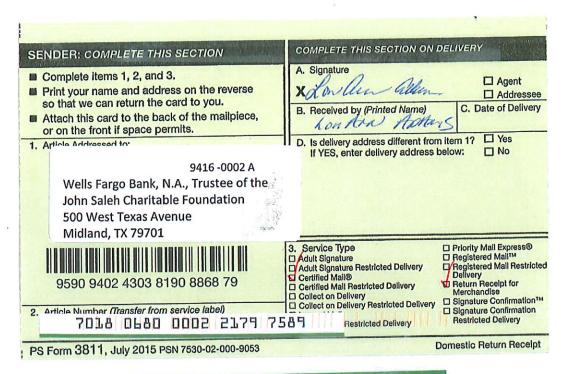
53	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT Domestic Mail Only		
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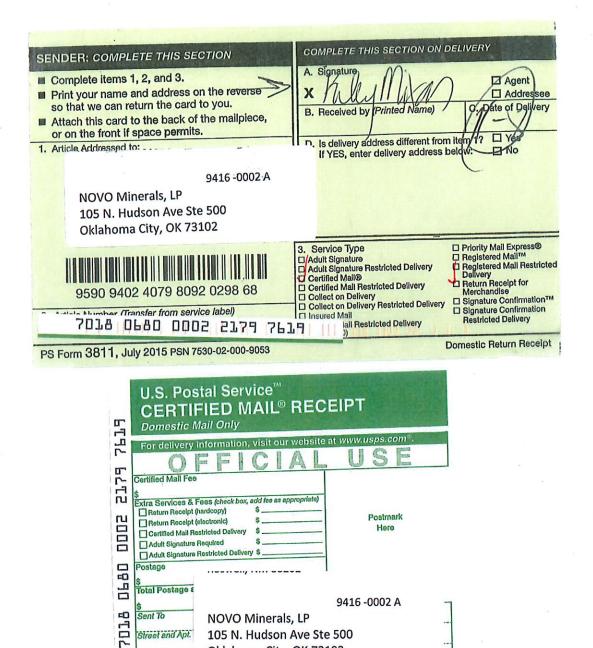


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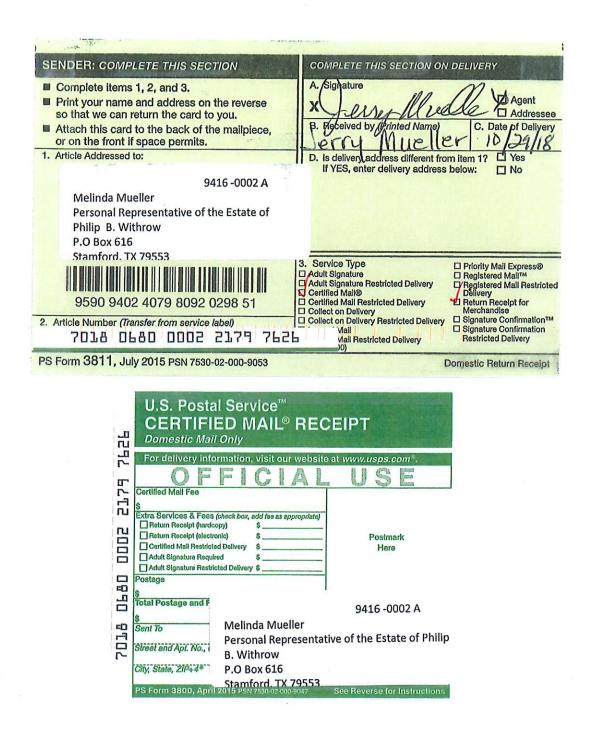
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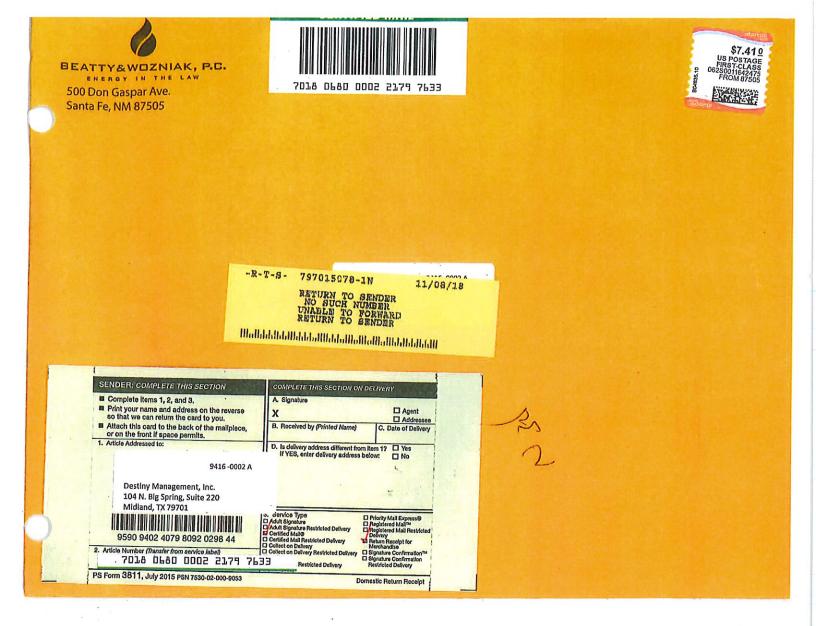
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Justin Carter Landman Novo Oil & Gas Northern Delaware, LLC 1001 West Wilshire Blvd, Suite 206 Oklahoma City, Oklahoma 73116 Office: 405.286.3375 jcarter@novoog.com

December 13, 2018

Marathon Oil Permian, LLC 5555 San Felipe Street Houston, Texas 77056

Attention: Chase Rice

Re: Rana Salada Fed Com 05 124H Well Proposal Section 5, T23S-R29E Eddy County, New Mexico

Mr. Rice:

11

Novo Oil & Gas Northern Delaware, LLC ("Novo"), as Operator, proposes the drilling and completion of the Rana Salada Fed Com 05 124H as a horizontal well to test the Second Bone Spring formation (TVD 8,465"). The proposed well will have a total measured length of approximately 14,445" with the first take point located approximately 100" FNL and 330" FEL of Section 5, 23S-29E and a proposed last take point located approximately 100" FSL and 330" FEL of Section 5, 23S-29E. The spacing unit area will be the E/2 E/2 of Section 5, T23S-R29E, being 160 acres, more or less.

Enclosed for your review is Novo's Authority for Expenditure ("AFE") in the total gross amount of \$6,797,000.00. According to our records, Marathon Oil Permian, LLC owns 5 net acres in the SE/4 SE/4, representing 3.125% working interest in the proposed well.

Novo reserves the right to modify the location and drilling plans described above in order to address surface and/or subsurface issues as may arise as preparations are made to drill the well. Novo will advise of any such modifications.

Please indicate your election as to whether you will participate in the space provided below. Please sign and return this letter to my attention within thirty (30) days from receipt or send by email to jcarter@novoog.com. Upon request, a Joint Operating Agreement will be provided for review.

Should you have any questions, please do not hesitate to contact me at 405.286.3375.

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #2 Sincerely,

Novo Oil & Gas Northern Delaware, LLC

Justin Carter Landman

## Rana Salada Fed Com 05 124H

elects to participate in the drilling, completing, and equipping of the Rana Salada Fed Com 05 124H

elects <u>NOT</u> to participate in the drilling, completing, and equipping of the Rana Salada
 Fed Com 05 124H

## Marathon Oil Permian, LLC

By:_____

Print Name:_____

Title:_____

Date:_____



#### NOVO OIL & GAS NORTHERN DELAWARE, LLC AUTHORIZATION FOR EXPENDITURE 1001 WWWWike, Suite 266 Okishoma CRy, Okishoma 73116 465284430

WELL NAME AFE TYPE Rana Salada Fed Com 05 124H Development AFE NUMBER 2015050 ATERAL LOCATION T-23-S, R-29-N, Sec 05, Slot 4, Az-S FIELD Northern Delaware DRILLING DAYS 18 FORMATION 2nd Bone Spring COUNTY Eddy County SURFACE LOCATION -25-S, R-29-E, Sec 5 NE/4 8,465' / 14,445' DEPTH (TVD/TMD) BOTTOM-HOLE LOCATION PROJECT DESCRIPTION -25-S, R-29-E, Sec 5 SE/4 Eddy County STATE New Mexico Drilling, completion, and production facilities coste for 5,080' horizontal well. ACCT. DESCRIPTION OF EXPENDITURE COST ESTIMATE CODE INTANGIBLE COSTS DRILLING (300) COMPLETION (500) SURVEY/PERMITS/DAMAGES/LEGAL 01 25,000 25,000 LOCATION & ROAD 02 100,000 100,000 03 RIG MOVE 120,000 120,000 04 DRILLING - FOOTAGE 50,000 50,000 05 DRILLING - DAYWORK 547,000 547,000 06 COMPLETION/WORKOVER RIG 80,000 80,000 COIL TUBING/SNUBBING UNIT 07 120,000 120,000 08 SLICKLINE/SWABBING 09 BITS 80,000 5,000 85,000 10 DIRECTIONAL SERVICES 180.000 180,000 11 CASING CREW 12 TOOL & EQUIPMENT RENTAL 80,000 80,000 50,000 80,000 130,000 FUEL & POWER 13 138,000 20,000 158,000 14 DIESEL - BASE FOR MUD 100,000 100,000 15 MUD LOGGING & GEOLOGIST 16,000 16.000 16 DISPOSAL, RESTORATION & BACKFILL 120,000 120,000 17 TRUCKING 50,000 50,000 100,000 18 TESTING 19 CEMENTING 140,000 140,000 20 PERFORATING 178,000 178,000 CASED HOLE LOGS 21 DOWNHOLE TOOLS & SERVICE OTHER STIMULATION 22 75,000 75,000 23 120,000 120,000 FORMATION STIMULATION CONSULTING SERVICES 24 2,070,000 2,070,000 25 26 SUPERVISION 80.000 120,000 200,000 27 CONTRACT LABOR 28 OTHER LABOR 10,000 20,000 30,000 100,000 100,000 29 COMPANY CONSULTING/SUPV 30 WATER 0 50,000 455,000 505,000 31 FLUIDS & CHEMICALS 32 CORING & ANALYSIS 33 COMMUNICATIONS 34 BOP TESTING 125,000 125,000 10.000 10,000 20,000 20,000 10,000 30,000 36 FISHING TOOLS & SERVICES 37 INSPECTIONS 38 WIRELINE SERVICES 10,000 5,000 15,000 39 ENGINEERING & GEOLOGY - FIELD C 40 ENGINEERING & GEOLOGY - OFFICE C 41 MULTISHOT & GYRO ٥ 42 RE-ENTRY SERVICES 43 CAMPS & TRAILERS 25.000 15,000 40.000 44 SAFETY EQUIPMENT & H2S 45 CONTINGENCY 10,000 5,000 15,000 46 INSURANCE 5,000 2.000 7.000 47 MISCELLANEOUS 1,000 11,000 10,000 SIM-OPS TOTAL INTANGIBLE COSTS 49 3,501,000 5,692,000 2,191,000 \$ Ś DRILLING (400) COMPLETION (600) \$ 6,000 TANGIBLE COSTS CASING - CONDUCTOR CASING - SURFACE CASING - INTERMEDIATE CASING - INTERMEDIATE 2 CASING - PRODUCTION / LINER SUBSURFACE EQUIPMENT P2ODUCTION TUBING TOTAL 01 S 6,000 02 22,000 22,000 03 156,000 156,000 04 05 344,000 344.000 06 25,000 25,000 07 PRODUCTION TUBING 52,000 52,000 08 SUBSURFACE PUMPING EQUIPMENT 09 WELLHEAD EQUIPMENT 40,000 30,000 70,000 10 FLOWLINES 11 SURFACE PUMPING EQUIPMENT 50,000 50,000 12 LINER HANGER & ASSOC EQUIP VALVES & FITTINGS 13 10,000 10,000 15 RODS 17 TRUCKING 20 RE-ENTRY EQUIPMENT 40,000 10,000 50,000 20 PRODUCTION EQUIPMENT MISCELLANEOUS TANGIBLE EQUIP-ACQUISITIONS 34 300,000 300.000 47 10,000 10,000 20,000 49 TOTAL INTANGIBLE COSTS 618,000 487,000 1,105,000 \$

PREPARED BY: **OPERATOR APPROVAL:** OPERATOR APPROVAL:

TOTAL ESTIMATED WELL COST

Kurt A.

1

shipley #2

Vice President - Operations Chief Executive Officer Chief Financial Officer

2,809,000

\$

DATE: 11-5-2018 11/5/18 DATE: DATE: 1152018

6,797,000

3,988,000 \$

DATE:

PARTNER COMPANY NAME:

PARTNER APPROVAL:

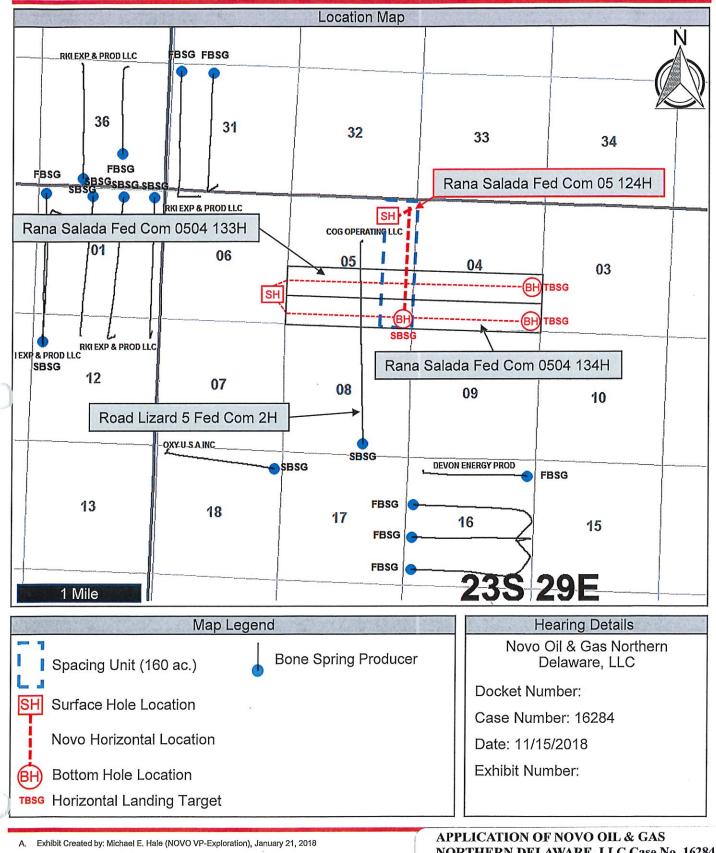
TITLE:

The costs of this AFE are estimates only. Participants in this project agree to pay their proportionate share of the actual costs. Please make a note that some expenditures such as tubing, ertificial lift or surface equipment may occur up to one year effer the project has been initiated.

# Salt Lake – Bone Spring Execution Plan







APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #3

# CASE NO. 16284 - Description of Depth Severance

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"the stratigraphic equivalent of all depths from the top of the 2nd Bone Spring Sand interval to the base of the 2nd Bone Spring Sand interval as delineated by the Type Log for the Carthel Federal 2, API 30015233890000 located in the SW/4NE/4 and W/2SE/4 of Section 5 and W/2E/2 of Section 8, Township 23 South, Range 29 East, Eddy County, New Mexico."

> APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #4

		Cas	se No. 16284
2	Sec. 5-	1	Unit Boundary
		2 29	DE
	orthern Delaware		

Novo Oil & Gas Northern Delaware, LLC Case Nos. 16284 Ownership in Proposed Unit* 2nd Bone Spring Sand interval Lot 1 (NE4NE4), SE/4NE/4, E/2SE/4 Sec 5, T23S, R29E

<u> Tract 1: Lot 1 (NE/4NE/4), SE/4NE/4,</u>

<u>NE/4SE/4</u>	Type	WI	<u>Unit Acres</u>	<u>Unit WI</u>
120.36 unit acres Novo Oil & Gas Northern Delaware, LLC	Federal	100.00%	120.36	0.750561237
<u>Tract 2: SE/4SE/4</u> 40.00 unit acres Novo Oil & Gas Northern Delaware, LLC	Fee	87.50%	35.00	0.218258917
Marathon Oil Permian, LLC		12.50%	<u>5.00</u> 40.00	<u>0.031179845</u> 0.249438763
		TOTAL	160.36	1.0000000

TOTAL

*Ownership is uniform within the Bone Spring Sand interval underlying Lot 1 (NE4NE4), SE/4NE/4, E/2SE/4 of Sec 5

Unit Cummulative WI	Unit	Cumm	ulative	WI
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Novo Oil & Gas Northern Delaware, LLC Marathon Oil Permian, LLC

<u>0.0311798</u> **1.0000000** 

0.9688202

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #5

	E/2 E/2 of Sect Updated Mineral Owners Case		
11.1.2	Owner Name	WI	Comment
Group A	SURFACE TO 8,773'		Marathon assigned 7/8 of its interest to
	Marathon Oil Permian	3.13%	Novo (recorded 12/19/2018)
	Novo Oil & Gas Northern Delaware, LLC	96.88%	
Group B	8,773' TO BASE OF BONE SPRING		Marathon assigned 7/8 of its interest to
	Marathon Oil Permian	3,13%	Novo (recorded 12/19/2018)
	Novo Oil & Gas Northern Delaware, LLC	96.88%	
Group C	BELOW BASE OF BONE SPRING		Marathan agaigned 7/9 of its interest to
	Marathon Oil Permian	3.13%	Marathon assigned 7/8 of its interest to Novo (recorded 12/19/2018)
x	Novo Oil & Gas Northern Delaware, LLC	96.88%	

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# EXHIBIT 6 LIST OF POOLED PARTIES CASE NO. 16284 NOVO OIL & GAS NORTHERN DELAWARE, LLC RANA SALADA FED COM 05 124H WELL

Marathon Oil Permian, LLC	WI
Wells Fargo Bank NA Trustee of the John Saleh Charitable Foundation	ORI
Morris E. Schertz and wife, Holly K. Schertz	ORI
Rolla R. Hinkle II	ORI
NOVO Minerals LP	ORI
Melinda Mueller, Personal Representative of the Estate of Philip B. Withrow	ORI
Destiny Management, Inc.	ORI
TDY Industries, LLC	RI
BTA Oil Producers, LLC	RI

1

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 PATRICK EXHIBIT #6

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

## AMENDED APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC FOR COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO.

### CASE NO. 16284

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

#### **AFFIDAVIT OF NOTICE**

Candace Callahan, being duly sworn upon her oath, deposes and states:

1. I am over the age of 18 and have personal knowledge of the matters stated herein.

2. I am an attorney for Novo Oil & Gas Northern Delaware, LLC.

3. Applicant has conducted in good faith, diligent effort to find the names and correct addresses of the interest owners entitled to receive notice of the application filed herein.

4. Notice of the application was provided to the interest owners, at their correct addresses, by certified mail. Copies of the notice letter and certified return receipts are attached hereto as Exhibit A

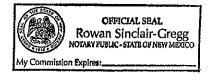
Candace Callahan

SUBSCRIBED AND SWORN TO before me this 19 day of February, 2019 by Candace Callahan.

Му С	omn	nissi	ion I	Expires:
10/	18/	202	72	-

Notary P/

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 EXHIBIT #7



Status of October 25th "Parties on Exhibit A" Case 16284	16284					
Recipient	Delivered	Receipt	Returned	Interest Type	Receipt Returned Interest Type Tracking Notes	Published in Current-Ara
1 Marathon Oil Permian, LLC	×	×		MI	0	11/1/2018
2 TDY Industries, LLC	×	×		RI		11/1/2018
3 BTA Oil Producers, LLC	×	×		RI		11/1/2018
4 Bureau of Land Management	×	×		RI		
Wells Fargo Bank, NA Trustee of the John						
5 Saleh Charitible Foundation	×	×		ORI		8 LUC/ 1/ 11
6 Morris E. Schertz et ux Holly K. Schertz	×	×		ORI		11/1/2018
7 Rolla R. Hinkle II	×	×		ORI		0102/1/11 0102/1/11
8 NOVO Minerals, LP	×	×		ORI		11/1/2018
Melinda Mueller Personal Rep. of the Estate						
9 of Philip B. Withrow	×	×		ORI		810C/1/11
10 Destiny Management, Inc.			×	ORI	Returned	11/1/2018

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 EXHIBIT #7-B

Argus

# ARLSBAD **RENT-ARGUS**

#### AFFIDAVIT OF PUBLICATION

Ad No. 0001266952

BEATTY & WOZNIAK, P.C. 216 SIXTEENTH STREET, SUITE 1100

DENVER CO 80202

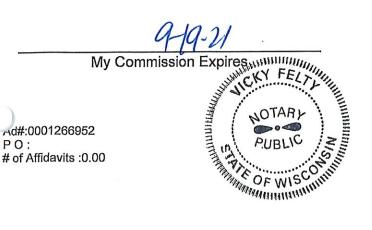
I, a legal clerk of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

11/01/18

egal Clerk

Subscribed and sworn before me this 1st of November 2018.

County of Brown NOTARY PUBLIC



# 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 November 15, 2018 in the Oil Conservation Division's Hearing Room at 1220 South St. Francis, Santa Fe, New Mexico, before an examiner, duly appointed for the hearing. OCD Rule Subsection B of 19.15.4.13 NMAC re-quires parties who intend to present evidence at an adjudicatory hearing to file a pre-hearing statement no later than the Thursday before the hearing and serve a copy on opposing counsel of record. If the OCD does not receive a pre-hearing statement from the applicant by the close of business on the Thursday before the hearing, the hearing may be continued.

#### STATE OF NEW MEXICO TO

All named parties and persons having any right, title interest or claim in the following cases and notice to the public (NOTE: All land descrip-tions herein refer to the New Mexico Principal Meridian whether or not so stated) CASE NO. 16284

TO: Marathon Oil Permian, LLC, TDY Industries, LLC, BTA Oil Producers, LLC, Wells Fargo Bank, N.A., Trustee of the John Saleh Charitable Foundation, Morris E. Schertz and wife, Holly K. Schertz, Rolla R. Hinkle II, NOVO Minerals, LP, Melinda Mueller Personal Representative of the Estate of Philip B. Withrow, Destiny Management, Inc.

Case No. 16284: Amended Application of Novo Oil & Gas Northern Delaware, LLC, the wholly owned subsidiary of Novo Oil & Gas, LLC, for a non-standard spacing and proration unit, and compulsory pooling, Eddy County, New Mexi-co. Applicant in the above-styled cause seeks an order pooling all uncommitted mineral interests in the Bone Spring formation underlying Lot 1 (NE/4NE/4), SE/4NE/4, and E/2SE/4 of Section 5, Township 23 South, Range 29 East, 3 Eagy County, New Mexico. This 160.36 acre standard horizontal spacing and proration unit is to be dedicated to the applicant's Rana Salada Fed Com 05 124H well which will be horizontally drilled from a surface location in the NE/4NE/4 of Section 5, Township 23 South, Range 29 East, to a bottom hole location in the SE/4SE/4 of Section 5, Township 23 South, Range 29 East. The producing interval will be orthodox. Also to be considered will be the cost of drilling and completing each well and the al-location of the cost thereof, as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a 200% charge for risk involved in Eddy County, New Mexico. This 160.36 acre 3 wells and a 200% charge for risk involved in drilling the well. Said area is located approximately 5 miles Northeast of Loving, New Mexico.

. . . .

Case No. 16284 LLC

Pub: Nov. 1, 2018 #1266952

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

# APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC FOR COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO.

#### **CASE NO. 16284**

#### **AFFIDAVIT OF MICHAEL HALE**

Michael Hale of lawful age and being first duly sworn, declares as follows.

1. My name is Michael Hale. I work for Novo Oil & Gas, LLC ("Novo") as the Vice President of Exploration. I am responsible for all geologic operations and development of Novo's Delaware Basin assets in Eddy County, NM as well as exploring other oil and gas basins in North America for opportunities.

2. I received a Bachelor of Science in Geology and a Master of Science in Geology from East Carolina University in 2004 and 2008, respectively. While in graduate school, I worked on a Petroleum Research Fund (PRF) grant with senior scientists from the National Museum of Natural History, Smithsonian Institution in Washington D.C. I have worked as a geologist in the oil and gas industry for over 11 years. I began my career in 2008, working for Fronterra Geosciences doing primarily resistivity formation image evaluation. After I left Fronterra, I worked as a Geologist for Sandridge Energy, performing both operational and exploration duties in both the Permian Basin and Anadarko Basins. Before coming to Novo, I was Geological Advisor for Ascent Resources, overseeing all work in the Appalachian Basin with a primary focus in Ohio's Utica Shale play. While I have never testified before the New Mexico Oil Conservation Division (NMOCD), while with Ascent Resources I testified as an expert witness as part of ~10 unitization hearings before the Ohio Department of Natural Resources (ODNR).

3. My professional associations are: American Association of Petroleum Geologists (AAPG), West Texas Geological Society (WTGS), Oklahoma City Geological Society (OCGS), Young Professionals in Energy (YPE)

4. I am familiar with the application filed by Novo in this case. I am also familiar with the applications filed by Novo in Case Nos. 16282 and 16283 heard by the Division on July 12, 2018 and August 9, 2018 pertaining to offsetting lands within the same Sections 4 and 5, Township 23 South, Range 29 East, Eddy County, New Mexico. I have conducted a geologic study of the Bone Spring formation underlying Sections 4 and 5.

5. Novo is targeting the Bone Spring formation (2nd Bone Spring Sand interval) with the proposed Rana Salada Fed Com 124H well. The well will be located in the Culebra Bluff; Bone Spring, South Pool (Pool Code 15011).

6. **Exhibit No. 9** is a map view of the execution plan for the 2nd and 3rd Bone Spring Sand in the Rana Salada development block in Sections 4 and 5. The proposed wellbores are denoted by the red dashed lines, with BHL locations depicted by the red circles and SHL depicted with a red box. The proposed horizontal spacing unit for the Rana Salada Fed Com 124H well proposed in this case is depicted by the blue dashed rectangle. The horizontal spacing units proposed in Novo's Case Nos. 16282 and 16283 to be drilled in the 3rd Bone Spring are depicted by the grey outlined rectangle.

7. **Exhibit No. 10** is a subsea structure map that I prepared for the top of the 2nd Bone Spring Sand. The proposed spacing unit is depicted by the blue dashed rectangle. The contour interval is 50 feet and the proposed wellbore path for the 124H well is depicted by the red dashed line, with the BHL indicated by the red circle and the SHL depicted with a red box. Offset Bone Spring horizontal producers are indicated by blue circles at the BHL and black well paths. The

structure map shows that the area is gently dipping from West to East across the map. I do not observe any faulting, pinch-outs, or other geologic impediments or hazards to developing this targeted interval with a horizontal well.

8. Exhibit No. 11 is a gross isopach map I prepared for the 2nd Bone Spring Sand. As in the previous map, the proposed spacing unit is depicted by the blue dashed rectangle, the proposed wellbore path is denoted by the red dashed line, the well BHL is indicated by the red circle and the SHL is depicted with a red box. Existing Bone Spring horizontal producers are indicated by blue circles with black well paths. The contour interval is 25 feet and thickness of the 2nd Bone Spring Sand interval over the Rana Salada development block ranges from approximately 325 feet to 400 feet. Also shown on the map is one line of section for cross-section I prepared to illustrate the consistent and contiguous nature of the 2nd Bone Spring Sand. The orange line (A-A') is an apparent dip section of type wells that penetrate the Bone Spring in and offsetting the Rana Salada development block.

9. Exhibit No. 12 is a West to East dip section (A-A') illustrating the three type wells in and offsetting the Rana Salada development block (Longview Deep 31, API 30015376040000, Carthel Federal 2, API 30015233890000, and Teledyne 4 Gas Com 1, API 30015227010000) that penetrate the 2nd Bone Spring Sand with the line of section shown on the inset map. Each well in the cross-section contains gamma ray, resistivity, and porosity logs. The proposed target interval is labeled and depicted by the green shaded box labeled "Target". The cross-section demonstrates that the targeted interval extends across the proposed spacing and proration unit (i.e. it is laterally continuous) and is consistent in thickness and log character.

10. **Exhibit No. 13** is a Type Log (Carthel Federal 2, API 30015233890000) for the Rana Salada development block illustrating the low porosity limestone barrier existing between

the 2nd and 3rd Bone Spring intervals underlying this area.

11. In my opinion, the proposed location of the well bore for the 124H well is such that the 2nd Bone Spring Lime barrier will effectively prevent communication between the 1st and 2nd Bone Spring intervals and fracs for the well proposed in this case will not extend into the 1st Bone Spring interval.

12. In my opinion, the proposed location of the well bore for the 124H well is such that the 3rd Bone Spring Lime barrier will effectively prevent communication between the 2nd and 3rd Bone Spring intervals and fracs for the well proposed in this case will not extend into the 3rd Bone Spring interval.

13. In my opinion, there is no preferential stress direction underlying the Rana Salada development area and both north-south and east-west development are acceptable, provided they allow operators to optimally develop their acreage position.

Based on my geologic study of the area, the Bone Spring formation underlying the 14. subject area is suitable for development by horizontal wells and each quarter-quarter section comprising the proposed spacing and proration unit will contribute more-or-less equally to the production from the wellbore.

15. In my opinion, the granting of Novo's application will be in the best interest of conservation, the prevention of waste, and the protection of correlative rights.

16. The Exhibits attached to this affidavit were either prepared by me or compiled under my direction and supervision.

17. The foregoing is correct and complete to the best of my knowledge and belief.

FURTHER AFFIANT SAYETH NOT.

W He

MICHAEL HALE

STATE OF OKLAHOMA

COUNTY OF OKLAHOMA

SUBSCRIBED and SWORN to before me this <u>19</u>th day of <u>February</u> 2019 by Michael Hale.

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Kiley Mixa NOTARY PUBLIC

My Commission Expires:

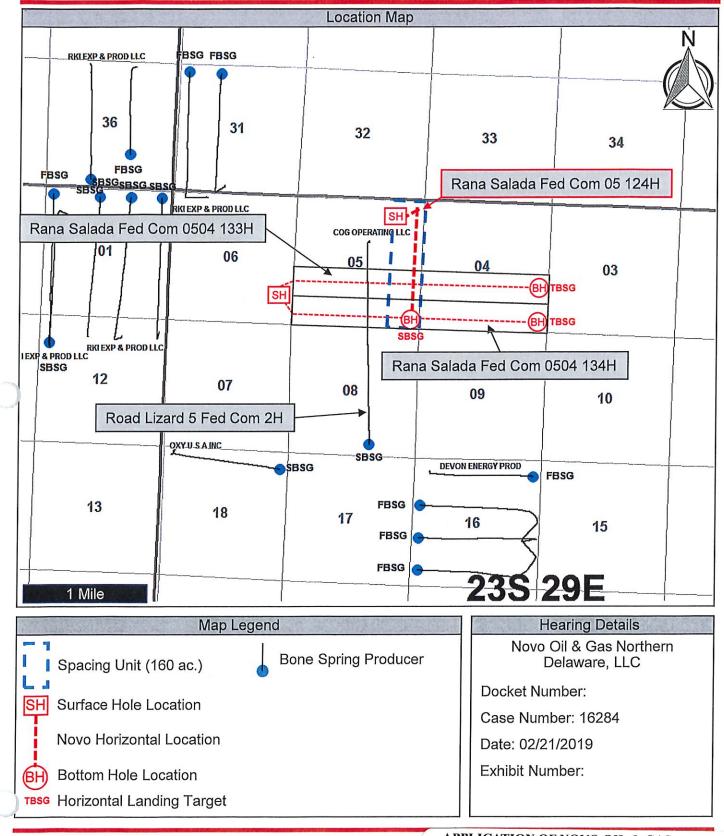
11/15/20



# Salt Lake – Bone Spring Execution Plan

3rd Bone Spring Proposed Location, Section 05-23S-29E



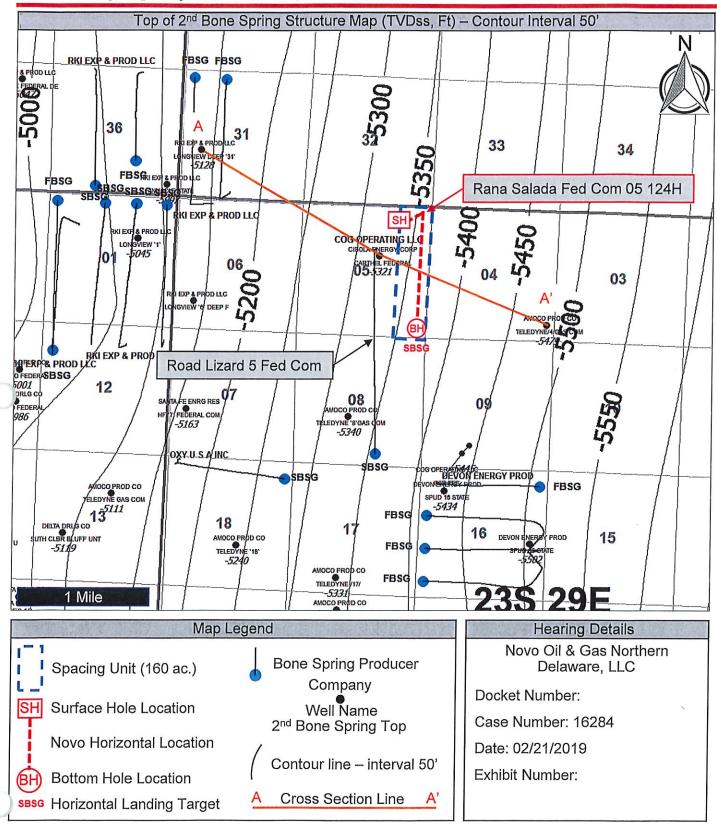


A. Exhibit Created by: Michael E. Hale (NOVO VP-Exploration), January 21, 2018

# Salt Lake – Top of 2nd Bone Spring Structure Map



2nd Bone Spring Proposed Location, Section 05-23S-29E

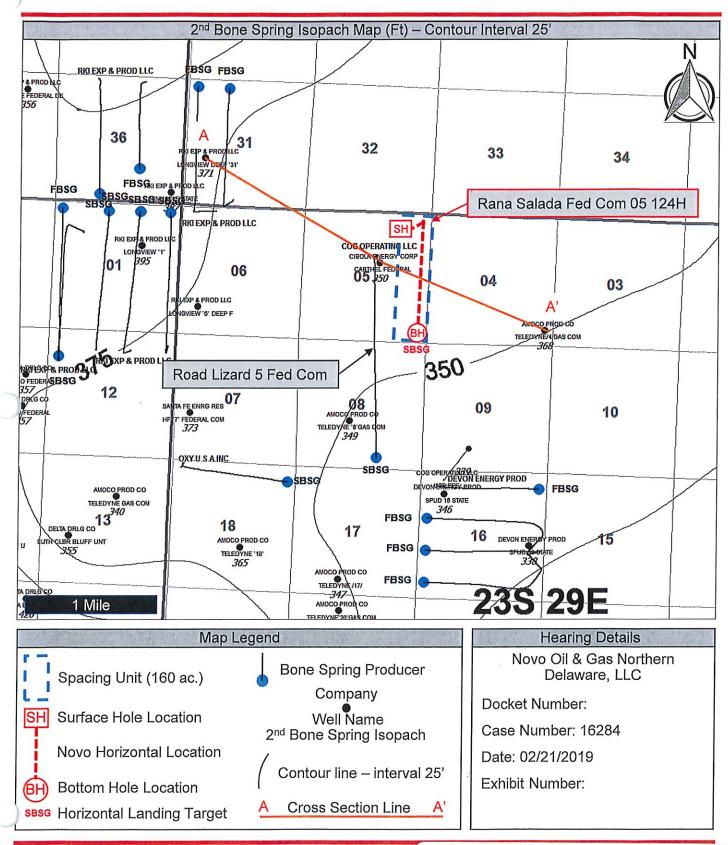


A. Exhibit Created by: Michael E. Hale (NOVO VP-Exploration), January 21, 2018

# Salt Lake – 2nd Bone Spring Isopach Map



2nd Bone Spring Proposed Location, Section 05-23S-29E

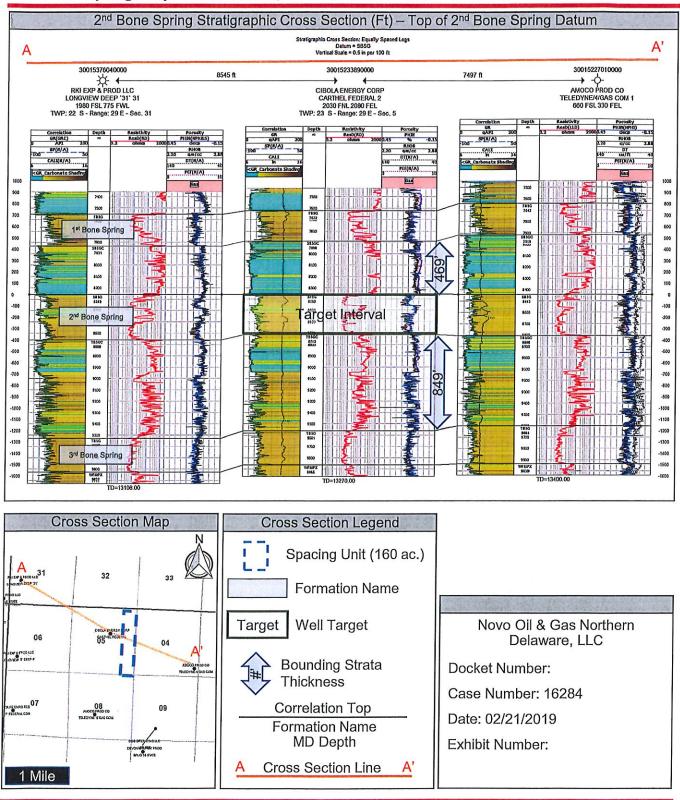


A. Exhibit Created by: Michael E. Hale (NOVO VP-Exploration), January 21, 2018

# Salt Lake – 2nd Bone Spring Stratigraphic Cross Section



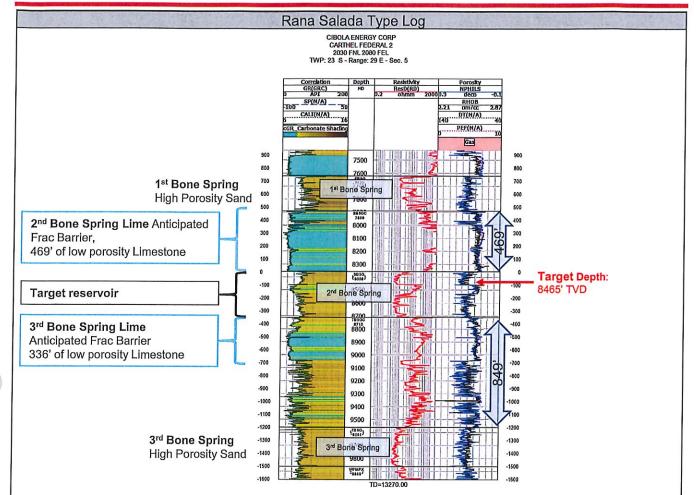
2nd Bone Spring Proposed Location, Section 05-23S-29E

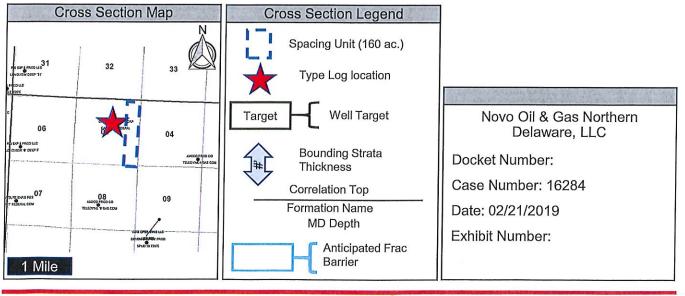


A. Exhibit Created by: Michael E. Hale (NOVO VP-Exploration), January 21, 2018

APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 HALE EXHIBIT #12

# Rana Salada Development Block Type Log





APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 HALE EXHIBIT #13

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

## AMENDED APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC FOR COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO.

CASE NO. 16284

#### AFFIDAVIT OF KURT SHIPLEY

Kurt Shipley, of lawful age and being first duly sworn, declares as follows:

 My name is Kurt Shipley. I am the Vice President of Operations for Novo Oil & Gas Northern Delaware, LLC ("Novo"). My responsibilities at Novo include drilling, completion, facilities and pipeline operations and petroleum engineering duties.

I received a Bachelor of Science degree in Mechanical Engineering from Texas
 Tech University. I have worked as a petroleum engineer since 1991. Prior to working for Novo,
 I worked for Burlington Resources, Chesapeake Energy, LINN Energy and American Energy
 Partners in New Mexico, Texas and Oklahoma.

3. I am familiar with the application filed by Novo in this case. I am also familiar with the applications filed by Novo in Case Nos. 16282 and 16283 pertaining to offsetting lands initially heard July 12, 2018, and on August 9, 2018 to supplement the record. I have conducted a study of the Bone Spring formation underlying the subject acreage.

4. In this case Novo is targeting the 2nd Bone Spring Sand interval with its proposed **Rana Salada Fed Com 05 124H Well**. In Novo's related Case Nos. 16282 and 16283, Novo is targeting the 3rd Bone Spring Sand interval.

5. The stimulation design for the **Rana Salada Fed Com 05 124H** is a slickwater and sand fracture stimulation. The design is intended to control height and maximize fracture half-length.

6. Novo's completion team expects **the Rana Salada Fed Com 05 124H** to stay contained and produce primarily from the 2nd Bone Spring Sand interval due to the following reasons:

## Depth Severance justification between 1st and 2nd Bone Spring intervals:

(a) The gross height between the base of the 1st Bone Spring Sand interval and the producing 2nd Bone Spring Sand is approximately 469 ft and the conductive frac height is not expected to exceed approximately 100 ft.

(b) Stimulation models suggest that the limestone formation separating the 1st and2nd Bone Spring Sand intervals will act to barrier and isolate these intervals; and

(c) Novo is not aware of any lasting communication effects between these zones in the immediate area.

(d) Exhibit 14 to this Affidavit is a Type Log for the Carthel Federal 2, API
30015233890000 located in the SW/4NE/4 and W/2SE/4 of Section 5 and W/2E/2 of Section 8,
Township 23 South, Range 29 East, Eddy County, New Mexico. The vertical separation
between the Base of the 1st Bone Spring and the Top of the 2nd Bone Spring is 469 ft. There are
469 ft of frac barriers in between the 1st Bone Spring and the 2nd Bone Spring.

(e) Exhibit 15 to this Affidavit is a Comparison of Vertical Separation of 1st, 2nd and 3rd Bone Spring formations and a map of the wellbores. There is 469 ft of vertical separation between the Base of the 1st Bone Spring at 7890' and the Top of the 2nd Bone Spring at 8359 ft.

Depth Severance justification between 2nd and 3rd Bone Spring intervals:

(a) The gross height between the base of the producing 2nd Bone Spring Sand interval and the producing 3rd Bone Spring Sand interval is approximately 849 ft and the conductive frac height is not expected to exceed approximately 100 ft.

(b) The planned landing point for the proposed well is at 8465 ft.

(c) Stimulation models suggest that the limestone barrier separating the 2nd and 3rd Bone Spring Sand intervals will act to barrier and isolate these intervals; and

(c) Novo is not aware of any lasting communication effects between these zones in the immediate area.

(d) Exhibit 14 to this Affidavit is a Type Log for the Carthel Federal 2, API
30015233890000 located in the SW/4NE/4 and W/2SE/4 of Section 5 and W/2E/2 of Section 8,
Township 23 South, Range 29 East, Eddy County, New Mexico. The vertical separation
between the Base of the 2nd Bone Spring and the Top of the 3rd Bone Spring is 849 ft. There are
336 ft of frac barriers in between the 2nd Bone Spring and the 3rd Bone Spring.

(e) Exhibit 15 to this Affidavit is a Comparison of Vertical Separation of 1st, 2nd and 3rd Bone Spring formations and a map of the wellbores. There is 336 ft of vertical separation between the Base of the 2nd Bone Spring at 8712' and the Top of the 3rd Bone Spring at 9561'.

7. In light of the foregoing, I conclude that the 1st Bone Spring Sand interval and the 2nd Bone Spring Sand interval will be isolated from each other in the proposed horizontal spacing units and are not within hydraulic fracture communication.

8. In light of the foregoing, I conclude that the 2nd Bone Spring Sand interval and the 3rd Bone Spring Sand interval will be isolated from each other in the proposed horizontal spacing units and are not within hydraulic fracture communication.

9. In my opinion, the granting of Novo's application will be in the best interest of conservation, the prevention of waste, and protection of correlative rights.

10. The Exhibits to this Affidavit were prepared by me or compiled from Novo's company business records.

11. The foregoing is correct and complete to the best of my knowledge and belief.

FURTHER AFFIANT SAYETH NOT.

STATE OF OKLAHOMA

COUNTY OF OKLAHOMA

SUBSCRIBED and SWORN to before me this <u>19</u>th day of <u>Fabruary</u> 2019 by Kurt Shipley.

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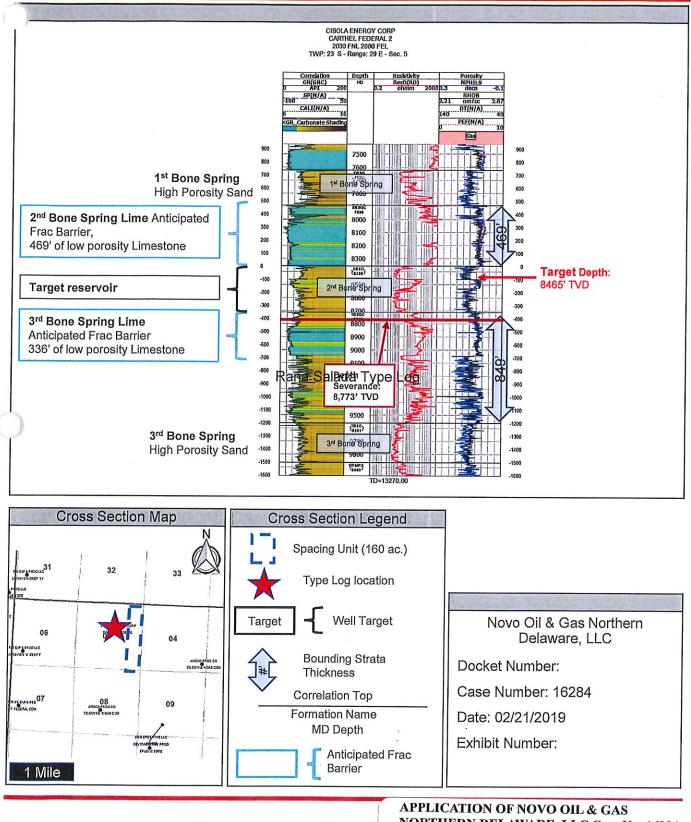
NOTARY PUBLIC

My Commission Expires:

11/15/20

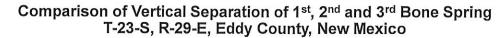


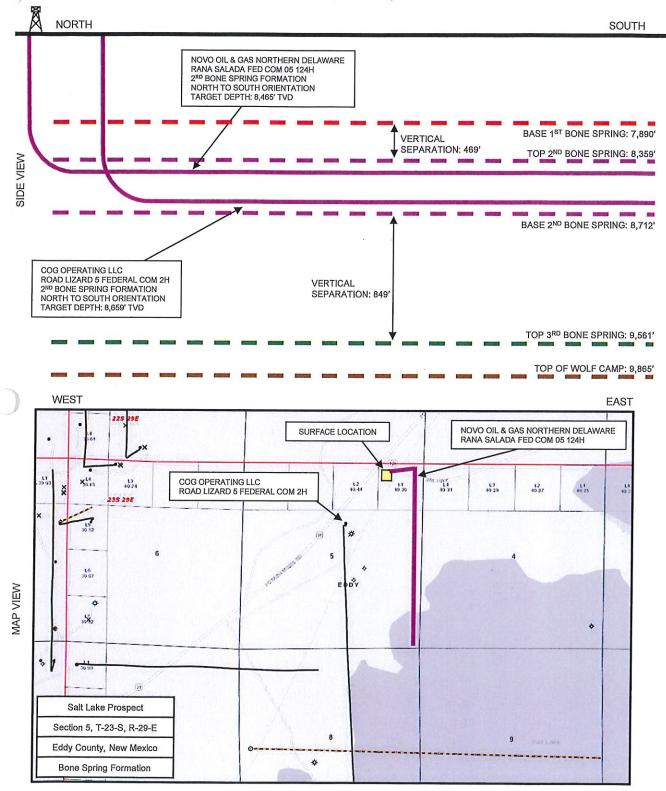
Rana Salada Development Block Type Log



NORTHERN DELAWARE, LLC Case No. 16284 SHIPLEY EXHIBIT #14 Case: 16284 Exhibit:







APPLICATION OF NOVO OIL & GAS NORTHERN DELAWARE, LLC Case No. 16284 SHIPLEY EXHIBIT #15