

**BEFORE THE OIL CONSERVATION DIVISION
EXAMINER HEARING OCTOBER 22, 2020**

CASE No. 21463

VINDICATOR CANYON EXPLORATORY UNIT

LEA COUNTY, NEW MEXICO



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

**APPLICATION OF MANZANO LLC FOR APPROVAL OF THE VINDICATOR
CANYON STATE EXPLORATORY UNIT, LEA COUNTY, NEW MEXICO.**

CASE NO. 21463

AFFIDAVIT OF NICK C. McCLELLAND, LANDMAN

Nick C. McClelland, being of lawful age and duly sworn, states the following:

1. My name is Nick C. McClelland and I am employed by Manzano, LLC ("Manzano") as a Landman. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum land matters and my credentials have been accepted by the Division and made a matter of record.
2. I am the landman responsible for the formation of the proposed unit, familiar with the application filed by Manzano in this matter and the status of the lands in the subject area.
3. Since this application seeks approval of a voluntary unit, I do not expect any opposition at the hearing.
4. Manzano seeks an order approving the Vindicator Canyon State Exploratory Unit, a voluntary unit consisting of the following 6,000 acres of State lands situated in Lea County:

TOWNSHIP 17 SOUTH, RANGE 36 EAST, N.M.P.M.

Section 14: SW/4
Section 15: ALL
Section 20: W/2
Section 23: S/2, NW/4
Section 26: ALL
Section 27: ALL
Section 28: ALL
Section 29: ALL
Section 30: E/2
Section 31: E/2 NE/4
Section 32: N/2, SW/4

Section 33: NE/4
Section 34: E/2 E/2
Section 35: ALL

5. Manzano is the designated operator for the proposed unit, and the unitized interval is the Canyon formation at the stratigraphic equivalent interval between 11,678 feet and 12,202 feet as found on the sonic log for the Deep Sparkling Muddler 15 State #1 well (API No. 30-025-22194) in Section 15, Township 17 South, Range 36 East, N.M.P.M., Lea County, New Mexico.

6. **Manzano Exhibit A-1** is a copy of the proposed Unit Agreement with Exhibits A, B and C. It conforms with the state exploratory unit form.

7. Exhibit A to the Unit Agreement outlines the boundary of the Unit Area in blue and identifies in yellow the tracts of state land in which working is committed to the Unit. There are 23 tracts of state lands, and currently 23 of those tracts have working interest committed to the Unit.

8. Exhibit B to the Unit Agreement shows the ownership breakdown by tract for the committed and uncommitted working interest in the Unit Area. Manzano owns 21.522663% of the working interest in the proposed unit area. More than 96.75% of the working interest in the state acreage is currently committed to the proposed Unit. An undivided 3.25% working interest remains uncommitted to the proposed Unit. The "Uncommitted Working Interest" is listed at the end of Exhibit B to the Unit Agreement. Manzano has sought the ratification of all overriding royalty interest owners to the Unit Agreement. Overriding royalty interest owners who do not ratify the Unit Agreement will be paid their interest on a lease basis.

9. Exhibit C to the Unit Agreement is the Schedule of Tract Participation for the 23 tracts of state lands committed to the Unit.

10. Manzano has met with the New Mexico State Land Office regarding the proposed unitized area and Unit Agreement. **Manzano Exhibit A-2** is a copy of the preliminary approval letter from the New Mexico State Land Office in support of the proposed unitized area and Unit Agreement.

11. As reflected in the State Land Office preliminary approval letter, the initial obligation well is the Vindicator 15 No. 1 well, a horizontal well currently dedicated to the E/2 W/2 of Section 15 (API No. 30-025-46513) and completed in the WC-025 G-09 S172315C; Upper Penn Pool (98333). Upon approval of the Unit, this well will be renamed the Vindicator Canyon State Unit 15 CNLC #3H.

12. The effective date of the Unit will be February 21, 2020, which is the first date of production from the existing Vindicator 15 No. 1 well.

13. Manzano is required by the Unit Agreement and the State Land Office preliminary approval letter to spud a second obligation well in the unitized area prior to January 2, 2021.

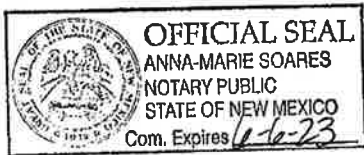
14. Manzano Exhibits A-1 through A-2 were prepared by me or compiled under my direction from company business records.

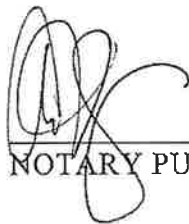
FURTHER AFFIANT SAYETH NAUGHT


NICK C. MCCLELLAND

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

SUBSCRIBED and SWORN to before me this 19th day of October 2020 by
Nick C. McClelland.




NOTARY PUBLIC

My Commission Expires:

6-6-23

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STATE EXPLORATORY UNIT
UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
VINDICATOR CANYON STATE EXPLORATORY UNIT AREA
LEA COUNTY, NEW MEXICO
NO. _____

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. A1

Submitted by: **Manzano LLC**

Hearing Date: October 22, 2020

Case No. 21463

**STATE
EXPLORATORY UNIT**

**UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
VINDICATOR CANYON STATE EXPLORATORY UNIT AREA
LEA COUNTY, NEW MEXICO**

NO. R-_____

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UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
VINDICATOR CANYON STATE EXPLORATORY UNIT AREA
LEA COUNTY, NEW MEXICO

STATE EXPLORATORY UNIT

NO. _____

THIS AGREEMENT, entered into as of the February day of 21st 2020, by and between the parties subscribing, ratifying, or consenting hereto, and herein referred to as the "parties hereto";

WITNESSETH:

WHEREAS, the parties hereto are the owners of working, royalty, or other oil and gas interests in the unit area subject to this Agreement;
and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico ("Commissioner") is authorized by an Act of the Legislature (NMSA 1978, §§19-10-45, 19-10-46, as amended) to consent to or approve this Agreement or operation of State Lands under agreements made by lessees of State Land jointly or severally with other lessees where such agreements provide for the unit operation or development of part or all of any oil or gas pool, field, or area; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (NMSA 1978, §19-10-47, as amended) to amend with the approval of lessee, evidenced by the lessee's execution of such agreement or otherwise, any oil and gas lease embracing State Lands so that the length of the term of said lease may coincide with the term of such agreements for the unit operation and development of part or all of any oil or gas pool, field or area; and

WHEREAS, the Oil Conservation Division of the Energy, Minerals and Natural Resources Department of the State of New Mexico (hereinafter referred to as "Division", is authorized by an act of the Legislature (NMSA 1978, §70-2-1 *et seq.*, as amended) to approve this Agreement and the conservation provisions hereof; and

WHEREAS, the parties hereto hold sufficient interests in the Vindicator Canyon State Exploratory Unit covering the land hereinafter described to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to conserve natural resources, prevent waste, and secure other benefits obtainable through development and operation of the area subject to this Agreement under the terms, conditions, and limitations herein set forth;

NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this Agreement their respective interests in the below-defined unit area, and agree severally among themselves as follows:

1. UNIT AREA. The following described land is hereby designated and recognized as constituting the unit area:

Township 17 South, Range 36 East, N.M.P.M.

Section 14: SW/4

Section 15: ALL

Section 20: ~~ALL~~ W/2

~~Section 21: ALL~~

~~Section 22: ALL~~

Section 23: S/2, NW/4

Section 26: ALL

Section 27: ALL

Section 28: ALL

Section 29: ALL

Section 30: E/2

Section 31: E/2NE/4

Section 32: N/2, SW/4

Section 33: NE/4

Section 34: E/2E/2

Section 35: ALL

Containing 7,600.00 total acres, more or less.

Exhibit "A" attached hereto is a map showing the unit area and the boundaries and identity of tracts and leases in said area to the extent known to the Unit Operator. Exhibit "B" attached hereto is a schedule showing to the extent known to the Unit Operator the acreage, percentage and kind of ownership of oil and gas interests in all lands in the unit area. However, nothing herein or in said schedule or map shall be construed as a representation by any party hereto as to the ownership of any interest other than such interest or interests as are shown on said map or schedule as owned by such party. Exhibits "A" and "B" shall be revised by the Unit Operator whenever changes in ownership in the unit area render such revisions necessary or when requested by the Commissioner of Public Lands, hereinafter referred to as "Commissioner", or the Oil Conservation Division, hereinafter referred to as "Division".

All land committed to this Agreement shall constitute land referred to herein as "Unitized Land" or "land subject to this Agreement".

2. **UNITIZED SUBSTANCES.** All oil, gas, natural gasoline, and associated fluid hydrocarbons in the Canyon formation, the correlative interval of which is identified as the stratigraphic equivalent of the interval between 11,678 feet and 12,202 feet as found on the sonic log for the Deep Sparkling Muddler 15 State #1 well (API No. 30-025-22194) located 600 feet FSL and 1,980 feet FEL of Section 15, Township 17 South, Range 36 East, N.M.P.M., Lea County, New Mexico, of the Unitized Land are unitized under the terms of this Agreement and herein are called "Unitized Substances".

3. **UNIT OPERATOR.** Manzano, LLC, with an address of 300 W. Second Street, Roswell, NM 88203, is hereby designated as Unit Operator and by signature hereto commits to this Agreement all interest in Unitized Substances vested in it as set forth in Exhibit "B", and agrees and consents to accept the duties and obligations of Unit Operator for the discovery, development, and production of Unitized Substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in the capacity and not as an owner of interest in Unitized Substances, and the term "working interest owner" when used herein shall include or refer to Unit Operator as the owner of a working interest only when such an interest is owned by it.

4. **RESIGNATIONS OR REMOVAL OF UNIT OPERATOR.** Unit Operator shall have the right to resign at any time, but such resignation shall not become effective until a successor Unit Operator has been selected and approved in the manner provided for in Section 5 of this Agreement. The resignation of Unit Operator shall not release Unit Operator from any liability for any default by it hereunder occurring prior to the effective date of its resignation.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by the same percentage vote of the owners of working interests determined in like manner as herein provided for the selection of a new Unit Operator. Such removal shall be effective upon notice thereof to the Land Commissioner and the Division.

The resignation or removal of Unit Operator under this Agreement shall not terminate its right, title, or interest as the owner of a working interest or other interest in Unitized Substances, but upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all equipment, materials, and appurtenances used in conducting the unit operations and owned by the working interest owners to the new duly qualified successor Unit Operator, or to the owners thereof if no such new Unit Operator is elected, to be used for the purpose of conducting unit operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment, or appurtenances needed for the preservation of any wells.

5. **SUCCESSOR UNIT OPERATOR.** Whenever the Unit Operator shall tender its resignation as Unit Operator or shall be removed as hereinabove provided, the owners of the working interests according to their respective acreage interest in all Unitized Land shall by a majority vote select a successor Unit Operator; provided that, if a majority but less than seventy-five percent (75%) of the working interests qualified to vote is owned by one party to this Agreement, a concurring vote of sufficient additional parties, so as to constitute in the aggregate not less than seventy-five percent (75%) of the total working interests, shall be required to select a new operator. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and (b) the selection shall have been approved by the Land Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Commissioner at his election, with notice to the Division, may declare this Unit Agreement terminated.

6. **ACCOUNTING PROVISIONS.** The Unit Operator shall pay in the first instance all costs and expenses incurred in conducting unit operations hereunder, and such costs and expenses and the working interest benefits accruing hereunder shall be apportioned among the owners of the unitized working interests in accordance an operating agreement entered into by and between the Unit Operator and the owners of such interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working interest owners and the Unit Operator as provided in this section, whether one or more, shall herein be referred to as the "Unit Operating Agreement" or "UOA". Such Unit Operating Agreement shall also provide the manner in which the working interest owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases, or other independent contracts, and such other rights and obligations as between Unit Operator and the working interest owners as may be agreed upon by Unit Operator and the working interest owners; however, the UOA shall not be deemed either to modify any of the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Unit Agreement, and in case of any inconsistency or conflict between this Agreement and the Unit Operating Agreement, this Unit Agreement shall prevail.

7. **RIGHTS AND OBLIGATIONS OF UNIT OPERATOR.** Except as otherwise specifically provided herein, the exclusive right, privilege, and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing, storing, allocating, and distributing the Unitized Substances are hereby delegated to and shall be exercised by the Unit Operator as herein provided. Acceptable evidence of title to said rights shall be deposited with Unit Operator and, together with this Agreement, shall constitute and define the rights, privileges, and obligations of Unit Operator. Nothing herein, however, shall be construed to transfer title to any land or to any lease or operating agreement, it being understood that under this Agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

8. **DRILLING TO DISCOVERY.** The Unit Operator shall, within sixty (60) days after the effective date of this Agreement on or before January 2nd, 2021, commence operations upon an adequate test second obligation well for oil and gas upon some part of the lands embraced within the Unit Area and shall drill said well with due diligence to a depth sufficient to attain the top of the Canyon formation or to such a depth as Unitized Substances shall be discovered in paying quantities at a lesser depth or until it shall, in the opinion of Unit Operator, be determined that the further drilling of said well shall be unwarranted or impracticable; provided, however, that Unit Operator shall not, in any event, be required to drill said well to a depth in excess of the base of the Canyon formation or 12,202 feet, whichever is deeper. Until a discovery of a deposit of Unitized Substances capable of being produced in paying quantities (to wit: quantities sufficient to repay the costs of drilling and producing operations with a reasonable profit) Unit Operator shall continue drilling diligently, one well at a time, allowing not more than six months between the completion of one well and the beginning of the next well, until a well capable of producing Unitized Substances in paying quantities is completed to the

satisfaction of the Commissioner or until it is reasonably proven to the satisfaction of the Unit Operator that the Unitized Land is incapable of producing Unitized Substances in paying quantities in the formation drilled hereunder.

Any well commenced prior to the effective date of this Agreement upon the Unit Area and drilled to the depth provided herein for the drilling of an initial test well shall be considered as complying with the drilling requirements hereof with respect to the initial well, but shall not be considered as complying with the drilling of the second obligation well. The Commissioner may modify the drilling requirements of this section by granting reasonable extensions of time when in his opinion such action is warranted. Upon failure to comply with the drilling provisions of this article the Commissioner may, after reasonable notice to the Unit Operator and each working interest owner, lessee and lessor at their last known addresses, declare this Unit Agreement terminated, and all rights privileges and obligations granted and assumed by this Unit Agreement shall cease and terminate as of such date.

9. OBLIGATIONS OF UNIT OPERATOR AFTER DISCOVERY OF UNITIZED SUBSTANCES. Should Unitized Substances in paying quantities be discovered upon the Unit Area, the Unit Operator shall on or before six months from the time of the completion of the initial discovery well and within thirty days after the expiration of each twelve months period thereafter, file a report with the Commissioner and Division of the status of the development of the unit area and the development contemplated for the following twelve months period.

It is understood that one of the main considerations for the approval of this Agreement by the Commissioner of Public Lands is to secure the orderly development of the Unitized Lands in accordance with good conservation practices so as to obtain the greatest ultimate recovery of Unitized Substances.

After discovery of Unitized Substances in paying quantities, Unit Operator shall proceed with diligence to reasonably develop the Unitized Area as a reasonably prudent operator would develop such area under the same or similar circumstances.

If the Unit Operator should fail to comply with the above covenant for reasonable development this Agreement may be terminated by the Commissioner as to all lands of the State of New Mexico embracing undeveloped regular well spacing or proration units, but in such event, the basis of participation by the working interest owners shall remain the same as if this Agreement had not been terminated as to such lands; provided, however, the Commissioner shall give notice to the Unit Operator and the lessees of record in the manner prescribed by (NMSA 1978, §19-10-20), of intention to cancel on account of any alleged breach of said covenant for reasonable development and any decision entered thereunder shall be subject to appeal in the manner prescribed by (NMSA 1978, §19-10-23), and, provided further, in any event the Unit Operator shall be given a reasonable opportunity after a final determination within which to remedy any default, failing in which this Agreement shall be terminated as to all lands of the State of New Mexico embracing undeveloped regular well spacing or proration units.

Notwithstanding any of the provisions of this Agreement to the contrary, all undeveloped regular well spacing or proration unit tracts within the unit boundaries shall be automatically eliminated from this Agreement and shall no longer be a part of the unit or be further subject to the terms of this Agreement unless at the expiration of five (5) years after the first day of the month following the effective date of this Agreement diligent drilling operations are in progress on said tracts.

10. PARTICIPATION AFTER DISCOVERY. Upon completion of a well capable of producing Unitized Substances in paying quantities the owners of working interests shall participate in the production therefrom and in all other producing wells which may be drilled pursuant hereto in the proportions that their respective leasehold interests covered hereby on an acreage basis bears to the total number of acres committed to this Unit Agreement, and such Unitized Substances shall be deemed to have been produced from the respective leasehold interests participating therein. For the purpose of determining any benefits accruing under this Agreement and the distribution of the royalties payable to the State of New Mexico and other lessors, each separate lease shall have allocated to it such percentage of said production as the number of acres in each lease respectively committed to this Agreement bears to the total number of acres committed hereto.

Notwithstanding any provisions contained herein to the contrary, each working interest owner shall have the right to take such owner's proportionate share of the Unitized Substances in kind or to personally sell or dispose of the same, and nothing herein contained shall be considered as giving or granting to the Unit Operator the right to sell or otherwise dispose of the proportionate share of any working interest owner without specific authorization from time to time so to do.

11. ALLOCATION OF PRODUCTION. All Unitized Substances produced from each tract in the Unitized Area established under this Agreement, except any part thereof used for production or development purposes hereunder, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of the Unitized Land, and for the purpose of determining any benefits that accrue on an acreage basis, each such tract shall have allocated to it such percentage of said production as its area bears to the entire Unitized Area. It is hereby agreed that production of Unitized Substances from the Unitized Area shall be allocated as provided herein, regardless of whether any wells are drilled on any particular tracts of said Unitized Area.

12. PAYMENT OF RENTALS, ROYALTIES, AND OVERRIDING ROYALTIES. All rentals due to the State of New Mexico shall be paid by the respective lease owners in accordance with the terms of their leases.

All royalties due to the State of New Mexico under the terms of the leases committed to this Agreement shall be computed and paid on the basis of all Unitized Substances allocated to the respective leases committed hereto; provided, however, the State shall be entitled to take in kind its share of the Unitized Substances allocated to the respective leases, and in such case the Unit Operator shall make deliveries of such royalty share in accordance with the terms of the respective leases.

All rentals, if any, due under any leases embracing lands other than the State of New Mexico, shall be paid by the respective lease owners in accordance with the terms of their leases and all royalties due under the terms of any such leases shall be paid on the basis of all Unitized Substances allocated to the respective leases committed hereto.

If the Unit Operator introduces gas obtained from sources other than the Unitized Substances into any producing formation for the purpose of repressuring, stimulating or increasing the ultimate recovery of Unitized Substances therefrom, a like amount of gas, if available, with due allowance for loss or depletion from any cause may be withdrawn from the formation into which the gas was introduced royalty free as to dry gas but not as to the products extracted therefrom; provided, that such withdrawal shall be at such time as may be provided in a plan of operation consented to by the Commissioner and approved by the Division is conforming to good petroleum engineering practices; and provided further, that such right of withdrawal shall terminate on the termination of this Unit Agreement.

If any lease committed hereto is burdened with an overriding royalty, payment out of production or other charge in addition to the usual royalty, the owner of each such lease shall bear and assume the same out of the Unitized Substances allocated to the lands embraced in each such lease as provided herein.

13. LEASES AND CONTRACTS CONFORMED AND EXTENDED INsofar AS THEY APPLY TO LANDS WITHIN THE UNITIZED AREA. The terms, conditions and provisions of all leases, subleases, operating agreements and other contracts relating to the exploration, drilling development or operation for oil or gas of the lands committed to this Agreement, shall as of the effective date hereof, be and the same are hereby expressly modified and amended insofar as they apply to lands within the Unitized Area to the extent necessary to make the same conform to the provisions hereof and so that the respective terms of said leases and agreements will be extended insofar as necessary to coincide with the terms of this Agreement and the approval of this Agreement by the Commissioner and the respective lessors and lessees shall be effective to conform the provisions and extend the terms of each such lease as to lands within the Unitized Area to the provisions and terms of this Agreement; but otherwise to remain in full force and effect. Each lease committed to this Agreement, insofar as it applies to lands within the Unitized Area, shall continue in force beyond the term provided therein as long as this Agreement remains in effect, provided, drilling operations upon the initial test well provided for herein shall have been commenced or said well is in the process of being drilled by the Unit Operator prior to the expiration of the shortest term lease committed to this Agreement. Termination of this Agreement shall not affect any lease which pursuant to the terms thereof or any applicable laws would continue in full force and effect thereafter. The commencement, completion, continued operation or production on each of the leasehold interests committed to this Agreement and operations or production pursuant to this Agreement shall be deemed to be operations upon and production from each leasehold interest committed hereto and there shall be no obligation on the part of the Unit Operator or any of the owners of the respective leasehold interests committed hereto to drill offset to wells as between the leasehold interests committed to this Agreement, except as provided in Section 9 hereof.

Any lease embracing lands of the State of New Mexico of which only a portion is committed hereto shall be segregated as to the portion committed and as to the portion not committed and the terms of such leases shall apply separately as two separate leases as to such segregated portions, commencing as of the effective date hereof. Notwithstanding any of the provisions of this Agreement to the contrary, any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced within the Unitized Area and committed to this Agreement, in accordance with the terms of this Agreement. If oil and gas, or either of them, are discovered and are being produced in paying quantities from some part of the lands embraced in such lease which part is committed to this Agreement at the expiration of the fixed term of such lease, such production shall not be considered as production from lands embraced in such lease which are not within the Unitized Area, and which are not committed thereto, and drilling or reworking operations upon some part of the lands embraced within the Unitized Area and committed to this Agreement shall be considered as drilling and reworking operations only as to lands embraced within the Unit Agreement and not as to lands embraced within the lease and not committed to this Unit Agreement; provided, however, as to any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto upon which oil and gas, or either of them, has been discovered is discovered upon that portion of such lands not committed to this Agreement, and are being produced in paying quantities prior to the expiration of the fixed term of such lease, such production in paying quantities shall serve to continue such lease in full force and effect in accordance with its terms as to all of the lands embraced in said lease.

14. CONSERVATION. Operations hereunder and production of Unitized Substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by or pursuant to State laws or regulations.

15. DRAINAGE. In the event a well or wells producing oil or gas in paying quantities should be brought in on land adjacent to the Unit Area draining Unitized Substances from the lands embraced therein, Unit Operator shall drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

16. COVENANTS RUN WITH LAND. The covenants herein shall be construed to be covenants running with the land with respect to the interests of the parties hereto and their successors in interest until this Agreement terminates, and any grant, transfer, or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder to the grantee, transferee, or other successor in interest. No assignment or transfer of any working interest, royalty, or other interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, photocopy, or certified copy of the instrument of transfer.

17. EFFECTIVE DATE AND TERM. This Agreement shall become effective upon approval by the Commissioner and the Division and shall automatically terminate 5 years from said effective date unless (a) such date of expiration is extended by the Commissioner, or (b) a valuable discovery of Unitized Substances has been made on Unitized Land during said initial term or any extension thereof in which event this Agreement shall remain in effect so long as Unitized Substances are being produced in paying quantities from the Unitized Land and, should production cease, so long thereafter as diligent operations are in progress for the restoration of production or discovery of new production and so long thereafter as the Unitized Substances so discovered are being produced as aforesaid. This Agreement may be terminated at any time by not less than seventy-five percent (75%) on an acreage basis of the owners of the working interests, signatory hereto, with the approval of the Commissioner and with notice to the Division. Likewise, the failure to comply with the drilling requirements of Section 8 hereof, may subject this Agreement to termination as provided in said section.

18. RATE OF PRODUCTION. All production and the disposal thereof shall be in conformity with allocations, allotments, and quotas made or fixed by the Division, and in conformity with all applicable laws and lawful regulations.

19. APPEARANCES. Unit Operator shall, after notice to other parties affected, have the right to appear for and on behalf of any and all interests affected hereby, before the Commissioner of Public Lands and the Division, and to appeal from orders issued under the regulations of the Commissioner or Division, or to apply for relief from any of said regulations or in any proceedings on its own behalf relative to operations pending before the Commissioner or Division; provided, however, that any other interested party shall also have the right at its own expense to appear and to participate in any such proceedings.

20. NOTICES. All notices, demands, or statements required hereunder to be given or rendered to the parties hereto, shall be deemed fully given, if given in writing and sent by postpaid registered mail, addressed to such party or parties at their respective addresses, set forth in connection with the signatures hereto or to the ratification or consent hereof, or to such other address as any such party may have furnished in writing to party sending the notice, demand, or statement.

21. LOSS OF TITLE. In the event title to any tract of Unitized Land or substantial interest therein shall fail, and the true owner cannot be induced to join the Unit Agreement so that such tract is not committed to this Agreement, or the operation thereof hereunder becomes impracticable as a result thereof, such tract may be eliminated from the Unitized Area, and the interest of the parties readjusted as a result of such tract being eliminated from the Unitized Area. In the event of a dispute as to the title to any royalty, working, or other interest subject hereto, the Unit Operator may withhold payment or delivery of the allocated portion of the Unitized Substances involved on account thereof, without liability for interest until the dispute is finally settled, provided that no payments of funds due the State of New Mexico shall be withheld. Unit Operator, as such, is relieved from any responsibility for any defect or failure of any title hereunder.

22. SUBSEQUENT JOINDER. Any oil or gas interest in lands within the Unit Area not committed hereto, prior to the submission of the Agreement for final approval by the Commissioner and the Division, may be committed hereto by the owner or owners of such rights, subscribing or consenting to this Agreement, or executing a ratification thereof, and if such owner is also a working interest owner, by subscribing to the Unit Operating Agreement providing for the allocation of costs of exploration, development, and operation. A subsequent joinder shall be effective as of the first day of the month following the approval by the Commissioner and the filing with the Division of duly executed counterparts of the instrument or instruments committing the interest of such owner to this Agreement, but such joining party or parties, before participating in any benefits hereunder, shall be required to assume and pay to Unit Operator, their proportionate share of the unit expenses incurred prior to such party's or parties' joinder in the Unit Agreement, and the Unit Operator shall make appropriate adjustments caused by such joinder, without any retroactive adjustment of revenue.

23. COUNTERPARTS. This Agreement may be executed in any number of counterparts, no one of which needs to be executed by all parties, or may be ratified or consented to by separate instrument in writing specifically referring hereto, and shall be binding upon all those parties who have executed such a counterpart, ratification, or consent hereto with the same force and effect as if all such parties had signed the same document, and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above-described Unit Area.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and have set opposite their respective names the date of execution.

UNIT OPERATOR AND WORKING INTEREST OWNER

DATED: _____

MANZANO, LLC

BY: Michael G. Hanagan
TITLE: Manager
ADDRESS: 300 W. Second Street
Roswell, NM 88203

ACKNOWLEDGEMENTS

STATE OF NEW MEXICO)
)ss.
COUNTY OF CHAVES)

This instrument was acknowledged before me on this ____ day of _____, 2020, by _____, _____ of Manzano, LLC, on behalf of said limited liability company.

Notary Public

EXHIBIT A

Vindicator Canyon State Exploratory Unit

Map of Unit Area

6000 Gross Acres

5805 Committed Acres

17S 36E

Unit Outline

Manzano
HBP

Manzano
8-1-2022
\$3750

HBP

Manzano
\$4023
1-1-2023

AEC
2-1-2022

Manzano
2-1-2022

Manzano
3-1-2025
\$639

Manzano
3-1-2025
\$1562

Manzano
12-1-2022
\$3033

Manzano
12-1-2022
\$4224

Manzano
11-1-2022
\$3422

Manzano
11-1-2022
\$1500

Manzano
7-1-2024
\$1256

Manzano
12-1-2022
\$4224

Manzano
12-1-2022
\$4224

Manz.
\$429
5-1-25

Manz
9-2022
\$2600

Manzano
12-1-202
\$3515

Manz
5-1-2025
\$209

Manzano
12-1-2022
\$2343

Manzano
12-1-2022
\$1067

Manzano
12-1-202
\$3063

EXHIBIT "B" SCHEDULE OF OWNERSHIP
Within the VINDICATOR UNIT
Lea County, New Mexico

TRACT NUMBER	DESCRIPTION OF LANDS	GROSS ACRES	COMMITTED WORKING INTEREST			SERIAL NUMBER AND EXPIRATION DATE	LESSEE OF RECORD	WORKING INTEREST AND PERCENTAGE	NET ACRES
1	T17S-R36E, NMPM Section 15 E/2 Lea County, NM	320.00	20.0000000%			State of New Mexico VC-0164-001 8/1/2022	Manzano, LLC	Manzano Group A *	280.000000
2	T17S-R36E, NMPM Section 15 W/2 Lea County, NM	320.00	20.0000000%			State of New Mexico VC-0555 1/1/2024	Manzano Energy Partners III, LLC	Manzano Group A *	280.000000
3	T17S-R36E, NMPM Section 14 SW/4 Lea County, NM	160.00	20.0000000%			State of New Mexico VC-0320 1/30/2023	Manzano Energy Partners III, LLC	Manzano Group B *	160.000000
4	T17S-R36E, NMPM Section 23 S/2 Lea County, NM	320.00	18.7500000%			State of New Mexico VB-2920 2/1/2022	Featherstone Development Corporation	Manzano Group B *	320.000000
5	T17S-R36E, NMPM Section 23 NW/4 Lea County, NM	160.00	18.7500000%			State of New Mexico VB-2907 2/1/2017	Slash Exploration, LP	Slash Exploration, LP	160.000000
6	T17S-R36E, NMPM Section 20 SE/4SW/4 Lea County, NM	40.00	20.0000000%			State of New Mexico VC-0735 6/1/2020	Manzano, LLC	Manzano Group A *	35.000000
7	T17S-R36E, NMPM Section 20 NW/4, N/2SW/4, SW/4SW/4 Lea County, NM	280.00	20.0000000%			State of New Mexico VC-0289 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	280.000000
8	T17S-R36E, NMPM Section 26 W/2 Lea County, NM	320.00	20.0000000%			State of New Mexico VC-0278-0001 11/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
9	T17S-R36E, NMPM Section 26 E/2 Lea County, NM	320.00	20.0000000%			State of New Mexico VC-0267-0001 11/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000

EXHIBIT "B" SCHEDULE OF OWNERSHIP
Within the VINDICATOR UNIT
Lea County, New Mexico

TRACT NUMBER	DESCRIPTION OF LANDS	GROSS ACRES	BASIC ROYALTY AND PERCENTAGE	SERIAL NUMBER AND EXPIRATION DATE	LESSEE OF RECORD	WORKING INTEREST AND PERCENTAGE	NET ACRES
10	T17S-R36E, NMMPM Section 27 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0290 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
11	T17S-R36E, NMMPM Section 27 S/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0291 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
12	T17S-R36E, NMMPM Section 28 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0302 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
13	T17S-R36E, NMMPM Section 28 S/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0292 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
14	T17S-R36E, NMMPM Section 29 S/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0632 7/1/2024	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
15	T17S-R36E, NMMPM Section 29 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0698 3/1/2025	Manzano, LLC	Manzano Group A *	280.000000
16	T17S-R36E, NMMPM Section 30 E/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0699 3/1/2025	Manzano, LLC	Manzano Group A *	280.000000
17	T17S-R36E, NMMPM Section 35 S/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0304 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000
18	T17S-R36E, NMMPM Section 35 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0294 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.000000

EXHIBIT "B" SCHEDULE OF OWNERSHIP
Within the VINDICATOR UNIT
Lea County, New Mexico

TRACT NUMBER	DESCRIPTION OF LANDS	GROSS ACRES	BASIC ROYALTY AND PERCENTAGE	SERIAL NUMBER AND EXPIRATION DATE	LESSEE OF RECORD	WORKING INTEREST AND PERCENTAGE	NET ACRES
19	T17S-R36E, NMPM Section 34 E/2E/2 Lea County, NM	160.00	20.00000000%	State of New Mexico VC-0218 9/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	160.0000000
20	T17S-R36E, NMPM Section 32 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0293 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	320.0000000
21	T17S-R36E, NMPM Section 32 SW/4 Lea County, NM	160.00	20.00000000%	State of New Mexico VC-0303 12/1/2022	Manzano Energy Partners III, LLC	Manzano Group B *	160.0000000
22	T17S-R36E, NMPM Section 31 E/2NE/4 Lea County, NM	80.00	20.00000000%	State of New Mexico - VC-0722 5/1/2020	Manzano, LLC	Manzano Group A *	70.0000000
23	T17S-R36E, NMPM Section 33 NE/4 Lea County, NM	160.00	20.00000000%	State of New Mexico - VC-0723 5/1/2020	Manzano, LLC	Manzano Group A *	140.0000000
<u>UNCOMMITTED WORKING INTEREST</u>							
1	T17S-R36E, NMPM Section 15 E/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0164-001 8/1/2022	Manzano, LLC	Texas Standard Oil LLC	40.0000000
2	T17S-R36E, NMPM Section 15 W/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0555 1/1/2024	Manzano Energy Partners III, LLC	Texas Standard Oil LLC	40.0000000
6	T17S-R36E, NMPM Section 20 SE/4SW/4 Lea County, NM	40.00	20.00000000%	State of New Mexico 6/1/2020	Manzano, LLC	Texas Standard Oil LLC	5.0000000
15	T17S-R36E, NMPM Section 29 N/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0698 3/1/2025	Manzano, LLC	Texas Standard Oil LLC	40.0000000

EXHIBIT "B" SCHEDULE OF OWNERSHIP
Within the VINDICATOR UNIT
Lea County, New Mexico

TRACT NUMBER	DESCRIPTION OF LANDS	GROSS ACRES	BASIC ROYALTY AND PERCENTAGE	SERIAL NUMBER AND EXPIRATION DATE	LESSEE OF RECORD	WORKING INTEREST AND PERCENTAGE	NET ACRES
16	T17S-R36E, NMPM Section 30 E/2 Lea County, NM	320.00	20.00000000%	State of New Mexico VC-0699 3/1/2025	Manzano, LLC	Texas Standard Oil LLC	40.0000000
22	T17S-R36E, NMPM Section 31 E/2NE/4 Lea County, NM	80.00	20.00000000%	State of New Mexico 5/1/2020	Manzano, LLC	Texas Standard Oil LLC	10.0000000
23	T17S-R36E, NMPM Section 33 NE/4 Lea County, NM	160.00	20.00000000%	State of New Mexico 5/1/2020	Manzano, LLC	Texas Standard Oil LLC	20.0000000
RECAPITULATION							
		5,805.000000	96.75000000%	Committed State Lands			
		195.000000	3.25000000%	Uncommitted State Lands			
TOTAL		6,000.000000	100.000000%				

Exhibit "B" SCHEDULE OF OWNERSHIP - Manzano Groups
Within the VINDICATOR UNIT
Lea County, New Mexico

Manzano Group A		
Owner/Entity	WI	NET ACRES
Manzano Energy Partners III, LLC	17.000000%	265.200000
Hanson Operating Company, Inc.	11.000000%	171.600000
Sharbro Energy, LLC	10.000000%	156.000000
Abo Petroleum, LLC	5.000000%	78.000000
Yates Energy Corporation	5.000000%	78.000000
David Petroleum Corporation	4.000000%	62.400000
Hanagan Petroleum Corporation	3.750000%	58.500000
Tamaroa Development, LLC	3.000000%	46.800000
Hutchings Oil Company	2.500000%	39.000000
Worrall Investment Corporation	2.000000%	31.200000
Scott Winn, LLC	2.000000%	31.200000
Richard J. Forrest, Jr. & Susan Forrest Revocable Trust	2.000000%	31.200000
JAY III, LLC	2.000000%	31.200000
Ruidoso Downs Racing, Inc.	2.000000%	31.200000
Babe Development, LLC	2.000000%	31.200000
McBride Minerals, LLC	1.000000%	15.600000
801, LLC	1.500000%	23.400000
Bane Bigbie, Inc	1.000000%	15.600000
Hat Mesa, LLC	1.000000%	15.600000
Centennial, LLC	1.000000%	15.600000
Scott Investment Corporation	1.000000%	15.600000
JTD Resources, LLC	1.000000%	15.600000
Axis Energy Corporation	1.000000%	15.600000
Cathryn Isabella Fenn Trust	1.000000%	15.600000
Warren, Inc.	1.000000%	15.600000
Warren Associates	1.000000%	15.600000
SCW Interiors, Inc.	0.500000%	7.800000
Wade Petroleum Corporation	0.500000%	7.800000
Ernest Angelo, Jr.	0.500000%	7.800000
Discovery Exploration	0.500000%	7.800000
Gannaway Oil, LLC	0.250000%	3.900000
John Thompson	0.250000%	3.900000
Bowtie Slash Energy, Inc.	0.250000%	3.900000
TOTAL	87.500%	1,365.00

Manzano Group B		
Owner/Entity	WI	NET ACRES
Manzano Energy Partners III, LLC	22.995109%	984.190665
Hanson Operating Company, Inc.	16.219000%	694.173200
Sharbro Energy, LLC	10.000000%	428.000000
Abo Petroleum, LLC	5.000000%	214.000000
Yates Energy Corporation	5.000000%	214.000000
David Petroleum Corporation	2.000000%	83.600000
Hanagan Petroleum Corporation	5.000000%	214.000000
Tamaroa Development, LLC	-	-
Hutchings Oil Company	-	-
Worrall Investment Corporation	2.666700%	114.134760
Scott Winn, LLC	2.000000%	85.600000
Richard J. Forrest, Jr. & Susan Forrest Revocable Trust	2.666700%	114.134760
JAY III, LLC	2.000000%	85.600000
Ruidoso Downs Racing, Inc.	2.666700%	114.134760
Babe Development, LLC	3.753300%	160.641240
McBride Minerals, LLC	1.333300%	57.065240
801, LLC	1.500000%	64.200000
Bane Bigbie, Inc	-	-
Hat Mesa, LLC	-	-
Centennial, LLC	1.000000%	42.800000
Scott Investment Corporation	1.333300%	57.065240
JTD Resources, LLC	1.333300%	57.065240
Axis Energy Corporation	-	-
Cathryn Isabella Fenn Trust	-	-
Warren, Inc.	1.000000%	42.800000
Warren Associates	1.000000%	42.800000
SCW Interiors, Inc.	-	-
Wade Petroleum Corporation	-	-
Ernest Angelo, Jr.	0.666700%	28.534760
Discovery Exploration	0.666700%	28.534760
Gannaway Oil, LLC	0.333300%	14.265240
John Thompson	0.333300%	14.265240
Bowtie Slash Energy, Inc.	0.333300%	14.265240
Joyco Investments, LLC	3.104600%	132.876880
CLM Production Company	0.094700%	4.053160
JOY Holdings, LLC	3.000000%	128.400000
SR Primo Holdings, LLC	0.333300%	14.265240
Scott Exploration	0.666700%	28.534760
TOTAL	100.00%	4,280.00

Owner/Entity	Unit Net Acres	Unit Ownership
Manzano Energy Partners III, LLC	1,249.390665	21.322663%
Hanson Operating Company, Inc.	865.773200	14.914266%
Sharbro Energy, LLC	584.000000	10.060292%
Abo Petroleum, LLC	292.000000	5.030146%
Yates Energy Corporation	292.000000	5.030146%
David Petroleum Corporation	148.000000	2.549526%
Hanagan Petroleum Corporation	272.500000	4.694229%
Tamaroa Development, LLC	46.800000	0.86201%
Hutchings Oil Company	39.000000	0.671835%
Worrall Investment Corporation	145.334760	2.503613%
Scott Winn, LLC	116.800000	2.012058%
Richard J. Forrest, Jr. & Susan Forrest Revocable Trust	145.334760	2.503613%
JAY III, LLC	116.800000	2.012058%
Ruidoso Downs Racing, Inc.	145.334760	2.503613%
Babe Development, LLC	191.841240	3.304758%
McBride Minerals, LLC	72.665240	1.251770%
801, LLC	87.600000	1.509044%
Bane Bigbie, Inc	15.600000	0.268734%
Hat Mesa, LLC	15.600000	0.268734%
Centennial, LLC	58.400000	1.006029%
Scott Investment Corporation	72.665240	1.251770%
JTD Resources, LLC	72.665240	1.251770%
Axis Energy Corporation	15.600000	0.268734%
Cathryn Isabella Fenn Trust	15.600000	0.268734%
Warren, Inc.	58.400000	1.006029%
Warren Associates	58.400000	1.006029%
SCW Interiors, Inc.	7.800000	0.134367%
Wade Petroleum Corporation	7.800000	0.134367%
Ernest Angelo, Jr.	36.334760	0.625922%
Discovery Exploration	36.334760	0.625922%
Gannaway Oil, LLC	18.165240	0.312924%
John Thompson	18.165240	0.312924%
Bowtie Slash Energy, Inc.	18.165240	0.312924%
Joyco Investments, LLC	132.876880	2.289007%
CLM Production Company	4.053160	0.069822%
JOY Holdings, LLC	128.400000	2.211886%
SR Primo Holdings, LLC	14.265240	0.245741%
Scott Exploration	28.534760	0.491555%
Slash Exploration LP	160.000000	2.756244%
TOTAL	5,805.00	100.000%

Exhibit C - Schedule of Tract Participation
Vindicator State Unit

TRACT NUMBER	DESCRIPTION OF LANDS	ACRES	Tract Participation	State Royalty	State Royalty % of Tract Participation
1	T17S-R36E, NMPM Section 15 E/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
2	T17S-R36E, NMPM Section 15 W/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
3	T17S-R36E, NMPM Section 14 SW/4 Lea County, NM	160.00	2.666667%	20.000000%	0.533333%
4	T17S-R36E, NMPM Section 23 S/2 Lea County, NM	320.00	5.333333%	18.750000%	1.000000%
5	T17S-R36E, NMPM Section 23 NW/4 Lea County, NM	160.00	2.666667%	18.750000%	0.500000%
6	T17S-R36E, NMPM Section 20 SE/4SW/4 Lea County, NM	40.00	0.666667%	20.000000%	0.133333%
7	T17S-R36E, NMPM Section 20 NW/4, N/2SW/4, SW/4SW/4 Lea County, NM	280.00	4.666667%	20.000000%	0.933333%
8	T17S-R36E, NMPM Section 26 W/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
9	T17S-R36E, NMPM Section 26 E/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%

Exhibit C - Schedule of Tract Participation
Vindicator State Unit

TRACT NUMBER	DESCRIPTION OF LANDS	ACRES	Tract Participation	State Royalty	State Royalty % of Tract Participation
10	T17S-R36E, NMPM Section 27 N/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
11	T17S-R36E, NMPM Section 27 S/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
12	T17S-R36E, NMPM Section 28 N/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
13	T17S-R36E, NMPM Section 28 S/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
14	T17S-R36E, NMPM Section 29 S/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
15	T17S-R36E, NMPM Section 29 N/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
16	T17S-R36E, NMPM Section 30 E/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
17	T17S-R36E, NMPM Section 35 S/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
18	T17S-R36E, NMPM Section 35 N/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
19	T17S-R36E, NMPM Section 34 E/2E/2 Lea County, NM	160.00	2.666667%	20.000000%	0.533333%

Exhibit C - Schedule of Tract Participation
Vindicator State Unit

TRACT NUMBER	DESCRIPTION OF LANDS	ACRES	Tract Participation	State Royalty	State Royalty % of Tract Participation
20	T17S-R36E, NMPM Section 32 N/2 Lea County, NM	320.00	5.333333%	20.000000%	1.066667%
21	T17S-R36E, NMPM Section 32 SW/4 Lea County, NM	160.00	2.666667%	20.000000%	0.533333%
22	T17S-R36E, NMPM Section 31 E/2NE/4 Lea County, NM	80.00	1.333333%	20.000000%	0.266667%
23	T17S-R36E, NMPM Section 33 NE/4 Lea County, NM	160.00	2.666667%	20.000000%	0.533333%
TOTAL		6000.000000	100.000000%		Unit State Royalty 19.900000%
					Unit NRI 80.100000%



Stephanie Garcia Richard
COMMISSIONER

State of New Mexico
Commissioner of Public Lands

310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE

Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

October 2, 2020

Manzano, LLC
PO Box 1737
Roswell, NM 88202-1737

Attention: Mr. Nick C. McClelland

Re: Revised Preliminary Approval Letter
Vindicator State Unit
Lea County, New Mexico

Dear Mr. McClelland:

I received your revised Unit Boundary Map for the Vindicator Unit on October 2, 2020. The revised map removed the E2 of Section 20, all of Section 21 and all of Section 22 of T-17S-R36E, Lea County from the your proposed Unit Boundary Map -Exhibit "A". Preliminary approval is now based upon the map we received today.

This office has received the unexecuted copy of the unit agreement, which you have submitted for the proposed Vindicator State Unit, Lea County, New Mexico. This agreement meets the general requirements of the Commissioner of Public Lands, who has this date granted you preliminary approval as to form and content.

Preliminary approval shall not be construed to mean final approval of this agreement in any way and will not extend any short-term leases, until final approval and an effective date have been given.

When submitting your agreement for final approval, please submit the following:

1. Application for final approval by the Commissioner setting forth the tracts that have been committed and the tracts that have not been committed.
2. Pursuant to Rule 19.2.100.51, applications for approval shall contain a statement of facts showing:
 - a. That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy.
 - b. That under the proposed unit operation, the State of New Mexico will receive its fair share of the recoverable oil and gas in place under its lands in the proposed unit area.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. A2
Submitted by: **Manzano LLC**
Hearing Date: October 22, 2020
Case No. 21463

- c. That each beneficiary institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the unit area.
 - d. That such unit agreement is in other respects for the best interest of the trust.
- 3. All ratifications from the Lessees of Record and Working Interest Owners. All signatures should be acknowledged by a notary and one set must contain original signatures.
- 4. Order of the New Mexico Oil Conservation Division. Our approval will be conditioned upon subsequent favorable approval by the New Mexico Oil Conservation Division.
- 5. A request from the operator to bring in the Vindicator Unit 15 No. 1 well into the unit as the initial obligation well and to make the Unit effective date February 21, 2020 which is the first date of production of the well.
- 6. A statement that the operator will spud the second well prior to or on January 2, 2021.
- 7. Operator must abide by NMOCD rules 19.15.29 NMAC 19.15.30 NMAC regarding Releases and Corrective Action and remain fully responsible for compliance with all laws, regulations of the state land office and other state agencies, and lease terms regarding operations on the leased premises, including with respect to environmental protection.
- 8. Operator must:
 - a. Require a water plan and siting on all unit improvements.
 - b. Avoid hydrologic features and keep all SLO BMP buffer zones.
 - c. Require additional protections consistent with SLO BMP's when improvements are placed in areas with DTW < 50'.
 - d. Proposed Surface Hole Location(s) (SHL) need to be submitted and approved by NMSLO prior to APD (Application for Permit to Drill) submittal to NMOCD for the wells.
- 9. Please submit one copy of the Unit Agreement.
- 10. Please submit a copy of the Unit Operating Agreement.
- 11. The filing fee of \$1,200.00, the filing fee is \$100 for each section or partial section included in the unit.

Manzano, LLC
August 26, 2020
Page 3

12. Siting guidance for all wells to be drilled in the unit will be sent to the unit operator by SLO, and must be adhered to for the operation of the unit.

If you have any questions, or if we may be of further help, please contact Scott Dawson at (505) 827-5791 or sdawson@slo.state.nm.us

Respectfully,

Stephanie Garcia Richard/SS

STEPHANIE GARCIA RICHARD
COMMISSIONER OF PUBLIC LANDS

SGR/sd

cc: Reader File,
NMOCD - Attention: Mr. Leonard Lowe
SLORMD - Attention: Ms. Billie Luther
BLM Courtesy copy – Mr. Mustafa Haque

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

**APPLICATION OF MANZANO LLC FOR APPROVAL OF THE VINDICATOR
CANYON STATE EXPLORATORY UNIT, LEA COUNTY, NEW MEXICO.**

CASE NO. 21463

AFFIDAVIT OF JOHN WORRALL, GEOLOGIST

John Worrall, of lawful age and being first duly sworn, declares as follows:

1. My name is John Worrall and I am employed by Manzano, LLC ("Manzano") as a geologist. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum geology and my credentials have been accepted by the Division and made a matter of record. I am familiar with the application filed by Manzano in this matter and have conducted a geologic study of the proposed unit area.

2. The objective of the Unit and the unitized interval is the Canyon Shale which is 524 feet thick and present from 11,678 to 12,202 feet in the Deep Sparkling Mudder 15 State #1 (API 30-025-22194) located in the SW/4 SE/4 of Section 15, Township 17 South, Range 36 East. **Manzano Exhibit B-1** is a type log of this well identifying in brackets the unitized interval and its proximity to the top of the Strawn formation.

3. **Manzano Exhibit B-2** is a subsea structure map that I prepared for the top of the Strawn formation which lies directly below the Canyon Shale. The proposed unit area is located over a Strawn-aged structural low, called the Shoe Bar sub basin, with 2,000 feet of relief where thick (350-525 feet) organic shales were preferentially deposited on top of the Strawn surface. The shales are part of the Canyon Shale formation of Pennsylvanian age. I do not observe any pinch outs or other geologic impediments to drilling horizontal wells or otherwise efficiently developing the unit area.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B
Submitted by: **Manzano LLC**
Hearing Date: October 22, 2020
Case No. 21463

4. In addition, identified on Exhibit B-2 is the location of the existing Vindicator 15 State #1H in the E/2 W/2 of Section 15. It was drilled at the structurally lowest point of the Shoe Bar sub basin. The well is currently producing approximately 75% oil and 25% water, demonstrating that at higher structural points in the Unit the Canyon Shale is expected to be oil productive with a similar or higher oil cut.

5. Exhibit B-2 also shows the location of the type log for the Deep Sparkling Mudder 15 State #1 in Section 15, and two cross-sections, A-A' and B-B'. Cross-section A-A' is a west to east cross-section comprised of four wells depicted with blue circles that were used to create a stratigraphic cross-section in a later exhibit. Cross-section B-B' is a NW to SE cross-section comprised of three wells depicted with red circles that were used to create a stratigraphic cross-section in a later exhibit. In my opinion, the well logs from these wells are representative of the geology underlying the unit area.

6. **Exhibit B-3** is the cross-section A-A' I prepared using the logs from the representative wells shown on Exhibit B-2. Each well log on the cross-section contains gamma ray and porosity logs. The cross-section shows that the prospective Canyon Shale is clearly present across the entire unit. The shale is thickest in the structural low and thins eastward above the higher structure. The unitized interval is marked on the cross-section as the shaded gray area and demonstrates that the unitized interval is continuous across the proposed spacing unit.

7. **Exhibit B-4** is the cross-section B-B' which that shows the neutron density logs for three wells in the lower portion of the basin. The organic shales are shaded darker brown and intervening siltstones are shaded light brown. The Vindicator 15#1H was drilled towards the middle well of the cross-section and was landed in the "Target Zone" approximately 75 feet above the top of the Strawn. A second potential bench in the proposed Unit, the "Upper Zone," is

shown approximately 200 feet above the lower landing point. The unitized interval is marked on the cross section as the shaded light brown area and demonstrates that the unitized interval is continuous across the proposed spacing unit.

8. Based on my geologic study, the proposed unitized area is prospective for recovery of oil and gas from the unitized interval and suitable for development under a unit plan.

9. In my opinion, the approval of this unit is in the best interests of conservation, the prevention of waste and the protection of correlative rights.

10. Manzano Exhibits B-1 through B-4 were either prepared by me or compiled under my direction and supervision.

FURTHER AFFIANT SAYETH NOT

John Worrall
JOHN WORRALL

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

SUBSCRIBED and SWORN to before me this 20th day of October 2020 by
John Worrall.

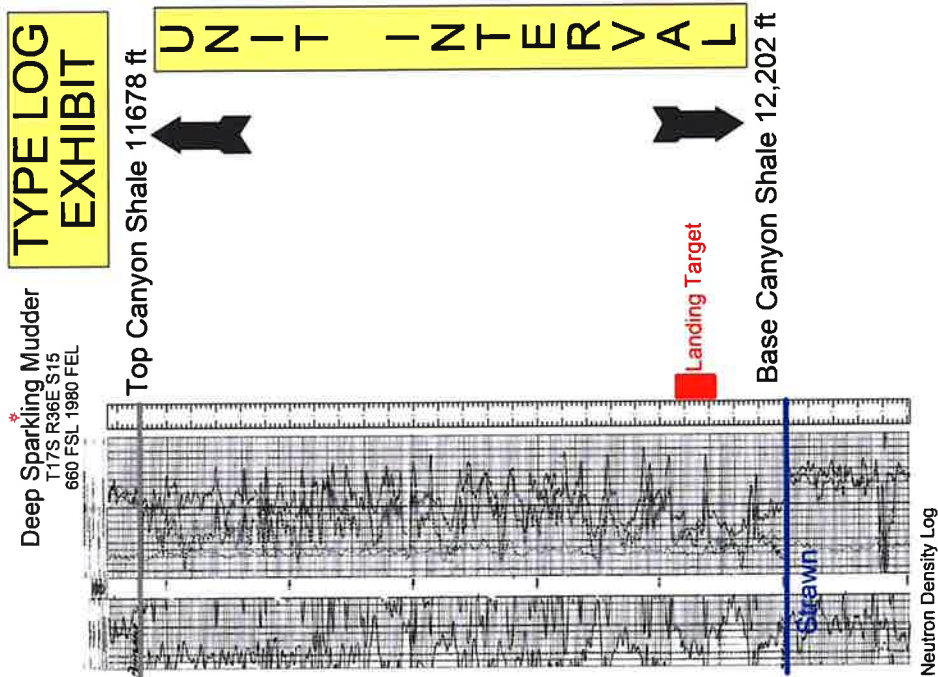
Melissa Randle
NOTARY PUBLIC

My Commission Expires:

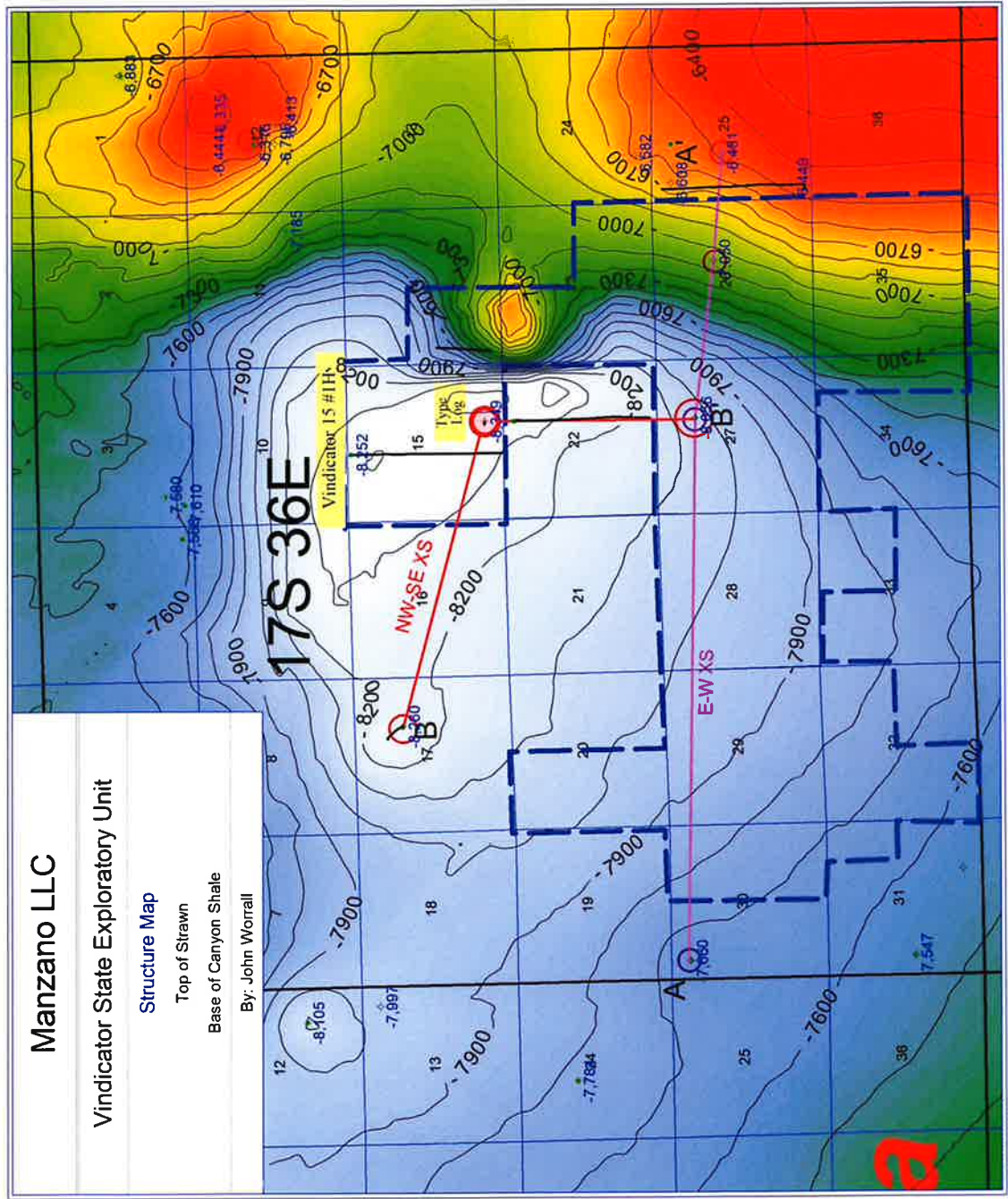
March 10, 2024



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A'

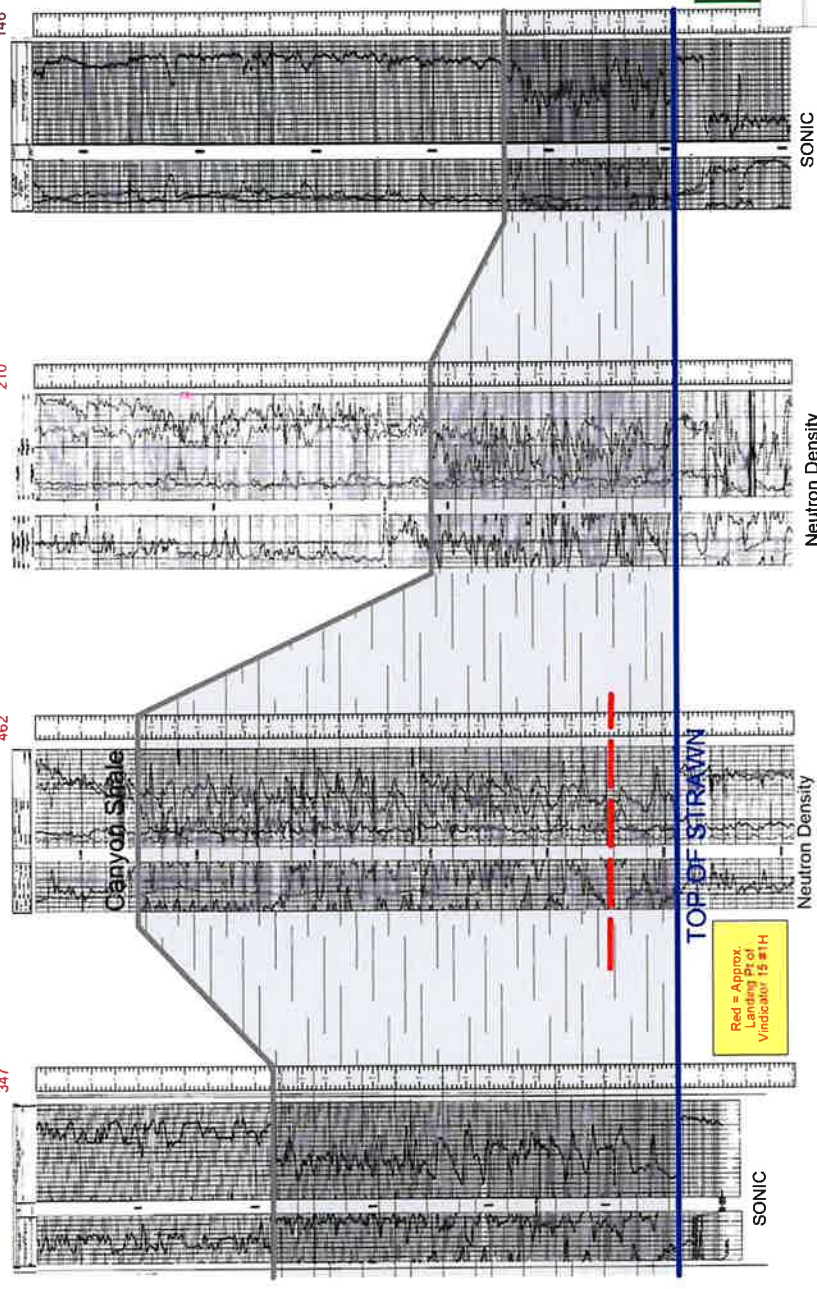
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TRAINER STATE
T17S R36E S25
EAST 2310 FNL 1650 FWL
146

PERSEUS 26' STATE
T17S R36E S26
1980 FNL 1960 FEL
210

MARATHON V1687 STAT
T17S R36E S27
1300 FNL 1960 FEL
462

KELLEY STATE 30
T17S R36E S30
WEST 660 FNL 625 FWL
347



Manzano LLC
VCSEU
Stratigraphic Cross Section
Datum: Strawn Formation
By John Worrell

NW

B

MARATHON OIL
PALMER OIL
1175 R/L 1950 FEL
1650 FSL 1950 FEL
3.078

The Vindicator 15 State #1H was drilled towards this well, which was renamed the Deep Sparkling Mudder 15 State #1 when it was reentered.

SEAFORD
1175 R/L 1950 FEL
1650 FSL 1950 FEL
3.053

B'

SE

MARATHON OIL
STATE
1175 R/L 1950 FEL
1300 FSL 1950 FEL
3.054

