

MF111989

<i>State Lease</i>	<i>Control</i>	<i>Base File</i>	<i>County</i>
MF111989	07-101450	114086	REEVES

<i>Survey</i>	H & G N R Y CO	
<i>Block</i>	2	
<i>Block Name</i>		
<i>Township</i>		
<i>Section/Tract</i>	24	
<i>Land Part</i>	ALL EXCEPT 20 AC. - SEE ITEM #5	
<i>Part Description</i>	FOR PLAT	
<i>Acres</i>	616.14	
<i>Depth Below</i>	<i>Depth Above</i>	<i>Depth Other</i>

Leasing: DL

Analyst: DL

Maps: ST

GIS: MC

DocuShare: _____

<i>Name</i>	CIMAREX ENERGY CO.
<i>Lease Date</i>	7/1/2010
<i>Primary Term</i>	5 yrs
<i>Bonus (\$)</i>	\$215,649.00
<i>Rental (\$)</i>	\$0.00
<i>Lease Royalty</i>	0.1250



CONTENTS OF FILE NO. MF- 111989

- ① RAL Sheet 8/1/10
- ② Lease 1/12/11
- ③ Cover Letter & Fees 1/12/11
- ④ Final Letter 12/6/11
5. PLAT OF SAE 12/12/2011

Scanned PJ 3-27-13

6. Rental Payment 04/03/2013

Scanned SM 7/19/13

Sec #s 6 & 7 in M-111928 For the
Beaverhead Unit & Rat. # 6663

Scanned PJ 6-8-15

7. Reconciliation Billing 9/23/15.

Scanned PJ 10-6-15

See MF-111928 #9 To
agree to Gas lift

Scanned PJ 8-31-16

8. RRC Data on Beaverhead 1H Well 10/2/17

Scanned PJ 10-4-2017

RAL REVIEW SHEET

Transaction #	6906	Geologist:	R. Widmayer
Lessor:	Harrison, Michael Anderson, William Henry Oliver Harrison	Lease Date:	7/1/2010 UL ☐
Lessee:	Cimarex Energy Co.	Gross Acres:	616.14
		Net Acres:	616.14

LEASE DESCRIPTION

County	PIN#	Base File No	Part	Sec.	Block	Twp	Survey	Abst#
REEVES	07-101450	114086	All except 20 AC (MF105985)	24	2	00	H & G N RY CO	3491

TERMS OFFERED

Primary Term:	5 years
Bonus/Acre:	\$700.00
Rental/Acre:	\$1.00
Royalty:	1/4

TERMS RECOMMENDED

Primary Term	5 years
Bonus/Acre	\$700.00
Rental/Acre	\$1.00
Royalty	1/4

COMPARISONS

MF #	Lessee	Date	Term	Bonus/Ac.	Rental/Ac.	Royalty	Distance
MF107473	Bracero Oil Company	5/31/2006	5 years	\$600.00	\$1.00	1/4	Last Lease

Comments: 2nd and 3rd year rentals are paid up. 4th year rental will be \$700.00 per acre and will pay up the 5th year.

Approved: TH 8/1/10

RELINQUISHMENT ACT LEASE APPLICATION

Texas General Land Office

Jerry Patterson, Commissioner

TO: Jerry Patterson, Commissioner
Larry Laine, Chief Clerk
Bill Warnick, General Counsel
Louis Renaud, Deputy Commissioner

DATE: 01-Sep-10

FROM: Robert Hatter, Director of Mineral Leasing
Tracey Throckmorton, Geoscience Manager

Applicant:	Cimarex Energy Co.	County:	REEVES
Prim. Term:	5 years	Bonus/Acre	\$700.00
Royalty:	1/4	Rental/Acre	\$1.00

Consideration

Recommended: [Signature] Date: 9/1/10

Not Recommended: _____

Comments: 2nd and 3rd year rentals are paid up. 4th year rental will be \$700.00 per acre and will pay up the 5th year.

Lease Form

Recommended: [Signature] Date: 9/3/10

Not Recommended: _____

Comments:

Louis Renaud, Deputy Commissioner Date: 9-10-10

Recommended: [Signature]

Not Recommended: _____

Bill Warnick, General Counsel Date: 9/13/10

Recommended: [Signature]

Not Recommended: _____

Larry Laine, Chief Clerk Date: 9/14/10

Approved: [Signature]

Not Approved: _____

Jerry Patterson, Commissioner Date: 9/14/10

Approved: [Signature]

Not Approved: _____

File No. 111989

RAC

Date Filed: 12/11/11 8/1/10

Jerry E. Patterson, Commissioner

By GH

FILE # 4819

General Land Office
Relinquishment Act Lease Form
Revised, September 1997

MF 111989

The State of Texas



Austin, Texas

OIL AND GAS LEASE

THIS AGREEMENT is made and entered into this 1st day of July, 2010, between the State of Texas, acting by and through its agent, Michael Anderson Harrison, a married man dealing in his sole and separate property; William Henry Oliver Harrison, Jr., a married man dealing in his sole and separate property; Kathryn Nell Harrison, a single woman dealing in her sole and separate property.

of P.O. Box 2399, Pecos, Texas 79772

(Give Permanent Address)

said agent herein referred to as the owner of the soil (whether one or more), and Cimarex Energy Co.

of 600 N. Marienfeld, Suite 600, Midland, Texas 79701

(Give Permanent Address)

hereinafter called Lessee.

1. **GRANTING CLAUSE.** For and in consideration of the amounts stated below and of the covenants and agreements to be paid, kept and performed by Lessee under this lease, the State of Texas acting by and through the owner of the soil, hereby grants, leases and lets unto Lessee, for the sole and only purpose of prospecting and drilling for and producing oil and gas, laying pipe lines, building tanks, storing oil and building power stations, telephone lines and other structures thereon, to produce, save, take care of, treat and transport said products of the lease, the following lands situated in Reeves County, State of Texas, to-wit:

Section 24, SAE the SE/4NE/4NE/4 and the NE/4NW/4NW/4, A-3491, Block 2, H&GN RR Co. Survey

containing 616.14 acres, more or less. The bonus consideration paid for this lease is as follows:

To the State of Texas: Two hundred fifteen thousand, six hundred forty nine dollars and 00/100

Dollars (\$215,649.00)

To the owner of the soil: Two hundred fifteen thousand, six hundred forty nine dollars and 00/100

Dollars (\$215,649.00)

Total bonus consideration: Four hundred thirty one thousand, two hundred ninety eight dollars and 00/100

Dollars (\$431,298.00)

The total bonus consideration paid represents a bonus of Seven Hundred and 00/100

Dollars (\$700.00) per acre, on 616.14 net acres.

2. **TERM.** Subject to the other provisions in this lease, this lease shall be for a term of 5 (Five) years from this date (herein called "primary term") and as long thereafter as oil and gas, or either of them, is produced in paying quantities from said land. As used in this lease, the term "produced in paying quantities" means that the receipts from the sale or other authorized commercial use of the substance(s) covered exceed out of pocket operational expenses for the six months last past.



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3. DELAY RENTALS. If no well is commenced on the leased premises on or before one (1) year from this date, this lease shall terminate, unless on or before said anniversary date Lessee shall pay or tender to the owner of the soil or to his credit in the _____

See Exhibit "A" for Rental Instructions _____ Bank, at _____ or its successors (which shall continue as the depository regardless of changes in the ownership of said land), the amount specified below; in addition, Lessee shall pay or tender to the COMMISSIONER OF THE GENERAL LAND OFFICE OF THE STATE OF TEXAS, AT AUSTIN, TEXAS, a like sum on or before said date. Payments under this paragraph shall operate as a rental and shall cover the privilege of deferring the commencement of a well for one (1) year from said date. Payments under this paragraph shall be in the following amounts:

To the owner of the soil: _____
Dollars (\$ _____)

To the State of Texas: _____
Dollars (\$ _____)

Total Delay Rental: _____
Dollars (\$ _____)

In a like manner and upon like payments or tenders annually, the commencement of a well may be further deferred for successive periods of one (1) year each during the primary term. All payments or tenders of rental to the owner of the soil may be made by check or sight draft of Lessee, or any assignee of this lease, and may be delivered on or before the rental paying date. If the bank designated in this paragraph (or its successor bank) should cease to exist, suspend business, liquidate, fail or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default for failure to make such payments or tenders of rental until thirty (30) days after the owner of the soil shall deliver to Lessee a proper recordable instrument naming another bank as agent to receive such payments or tenders.

4. PRODUCTION ROYALTIES. Upon production of oil and/or gas, Lessee agrees to pay or cause to be paid one-half (1/2) of the royalty provided for in this lease to the Commissioner of the General Land Office of the State of Texas, at Austin, Texas, and one-half (1/2) of such royalty to the owner of the soil:

(A) OIL. Royalty payable on oil, which is defined as including all hydrocarbons produced in a liquid form at the mouth of the well and also as all condensate, distillate, and other liquid hydrocarbons recovered from oil or gas run through a separator or other equipment, as hereinafter provided, shall be 1/4 part of the gross production or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such value to be determined by 1) the highest posted price, plus premium, if any, offered or paid for oil, condensate, distillate, or other liquid hydrocarbons, respectively, of a like type and gravity in the general area where produced and when run, or 2) the highest market price thereof offered or paid in the general area where produced and when run, or 3) the gross proceeds of the sale thereof, whichever is the greater. Lessee agrees that before any gas produced from the leased premises is sold, used or processed in a plant, it will be run free of cost to the royalty owners through an adequate oil and gas separator of conventional type, or other equipment at least as efficient, so that all liquid hydrocarbons recoverable from the gas by such means will be recovered. The requirement that such gas be run through a separator or other equipment may be waived, in writing, by the royalty owners upon such terms and conditions as they prescribe.

(B) NON PROCESSED GAS. Royalty on any gas (including flared gas), which is defined as all hydrocarbons and gaseous substances not defined as oil in subparagraph (A) above, produced from any well on said land (except as provided herein with respect to gas processed in a plant for the extraction of gasoline, liquid hydrocarbons or other products) shall be 1/4 part of the gross production or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such value to be based on the highest market price paid or offered for gas of comparable quality in the general area where produced and when run, or the gross price paid or offered to the producer, whichever is the greater; provided that the maximum pressure base in measuring the gas under this lease shall not at any time exceed 14.65 pounds per square inch absolute, and the standard base temperature shall be sixty (60) degrees Fahrenheit, correction to be made for pressure according to Boyle's Law, and for specific gravity according to tests made by the Balance Method or by the most approved method of testing being used by the industry at the time of testing.

(C) PROCESSED GAS. Royalty on any gas processed in a gasoline plant or other plant for the recovery of gasoline or other liquid hydrocarbons shall be 1/4 part of the residue gas and the liquid hydrocarbons extracted or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office. All royalties due herein shall be based on one hundred percent (100%) of the total plant production of residue gas attributable to gas produced from this lease, and on fifty percent (50%), or that percent accruing to Lessee, whichever is the greater, of the total plant production of liquid hydrocarbons attributable to the gas produced from this lease; provided that if liquid hydrocarbons are recovered from gas processed in a plant in which Lessee (or its parent, subsidiary or affiliate) owns an interest, then the percentage applicable to liquid hydrocarbons shall be fifty percent (50%) or the highest percent accruing to a third party processing gas through such plant under a processing agreement negotiated at arm's length (or if there is no such third party, the highest percent then being specified in processing agreements or contracts in the industry), whichever is the greater. The respective royalties on residue gas and on liquid hydrocarbons shall be determined by 1) the highest market price paid or offered for any gas (or liquid hydrocarbons) of comparable quality in the general area, or 2) the gross price paid or offered for such residue gas (or the weighted average gross selling price for the respective grades of liquid hydrocarbons), whichever is the greater. In no event, however, shall the royalties payable under this paragraph be less than the royalties which would have been due had the gas not been processed.

(D) OTHER PRODUCTS. Royalty on carbon black, sulphur or any other products produced or manufactured from gas (excepting liquid hydrocarbons) whether said gas be "casinghead," "dry," or any other gas, by fractionating, burning or any other processing shall be 1/4 part of the gross production of such products, or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such market value to be determined as follows: 1) on the basis of the highest market price of each product for the same month in which such product is produced, or 2) on the basis of the average gross sale price of each product for the same month in which such products are produced; whichever is the greater.

5. MINIMUM ROYALTY. During any year after the expiration of the primary term of this lease, if this lease is maintained by production, the royalties paid under this lease in no event shall be less than an amount equal to the total annual delay rental herein provided; otherwise, there shall be due and payable on or before the last day of the month succeeding the anniversary date of this lease a sum equal to the total annual rental less the amount of royalties paid during the preceding year. If Paragraph 3 of this lease does not specify a delay rental amount, then for the purposes of this paragraph, the delay rental amount shall be one dollar (\$1.00) per acre.



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6. **ROYALTY IN KIND.** Notwithstanding any other provision in this lease, at any time or from time to time, the owner of the soil or the Commissioner of the General Land Office may, at the option of either, upon not less than sixty (60) days notice to the holder of the lease, require that the payment of any royalties accruing to such royalty owner under this lease be made in kind. The owner of the soil's or the Commissioner of the General Land Office's right to take its royalty in kind shall not diminish or negate the owner of the soil's or the Commissioner of the General Land Office's rights or Lessee's obligations, whether express or implied, under this lease.

7. **NO DEDUCTIONS.** Lessee agrees that all royalties accruing under this lease (including those paid in kind) shall be without deduction for the cost of producing, gathering, storing, separating, treating, dehydrating, compressing, processing, transporting, and otherwise making the oil, gas and other products hereunder ready for sale or use. Lessee agrees to compute and pay royalties on the gross value received, including any reimbursements for severance taxes and production related costs.

8. **PLANT FUEL AND RECYCLED GAS.** No royalty shall be payable on any gas as may represent this lease's proportionate share of any fuel used to process gas produced hereunder in any processing plant. Notwithstanding any other provision of this lease, and subject to the written consent of the owner of the soil and the Commissioner of the General Land Office, Lessee may recycle gas for gas lift purposes on the leased premises or for injection into any oil or gas producing formation underlying the leased premises after the liquid hydrocarbons contained in the gas have been removed; no royalties shall be payable on the recycled gas until it is produced and sold or used by Lessee in a manner which entitles the royalty owners to a royalty under this lease.

9. **ROYALTY PAYMENTS AND REPORTS.** All royalties not taken in kind shall be paid to the Commissioner of the General Land Office at Austin, Texas, in the following manner:

Payment of royalty on production of oil and gas shall be as provided in the rules set forth in the Texas Register. Rules currently provide that royalty on oil is due and must be received in the General Land Office on or before the 5th day of the second month succeeding the month of production, and royalty on gas is due and must be received in the General Land Office on or before the 15th day of the second month succeeding the month of production, accompanied by the affidavit of the owner, manager or other authorized agent, completed in the form and manner prescribed by the General Land Office and showing the gross amount and disposition of all oil and gas produced and the market value of the oil and gas, together with a copy of all documents, records or reports confirming the gross production, disposition and market value including gas meter readings, pipeline receipts, gas line receipts and other checks or memoranda of amount produced and put into pipelines, tanks, or pools and gas lines or gas storage, and any other reports or records which the General Land Office may require to verify the gross production, disposition and market value. In all cases the authority of a manager or agent to act for the Lessee herein must be filed in the General Land Office. Each royalty payment shall be accompanied by a check stub, schedule, summary or other remittance advice showing by the assigned General Land Office lease number the amount of royalty being paid on each lease. If Lessee pays his royalty on or before thirty (30) days after the royalty payment was due, then Lessee owes a penalty of 5% on the royalty or \$25.00, whichever is greater. A royalty payment which is over thirty (30) days late shall accrue a penalty of 10% of the royalty due or \$25.00 whichever is greater. In addition to a penalty, royalties shall accrue interest at a rate of 12% per year; such interest will begin to accrue when the royalty is sixty (60) days overdue. Affidavits and supporting documents which are not filed when due shall incur a penalty in an amount set by the General Land Office administrative rule which is effective on the date when the affidavits or supporting documents were due. The Lessee shall bear all responsibility for paying or causing royalties to be paid as prescribed by the due date provided herein. Payment of the delinquency penalty shall in no way operate to prohibit the State's right of forfeiture as provided by law nor act to postpone the date on which royalties were originally due. The above penalty provisions shall not apply in cases of title dispute as to the State's portion of the royalty or to that portion of the royalty in dispute as to fair market value.

10. **(A) RESERVES, CONTRACTS AND OTHER RECORDS.** Lessee shall annually furnish the Commissioner of the General Land Office with its best possible estimate of oil and gas reserves underlying this lease or allocable to this lease and shall furnish said Commissioner with copies of all contracts under which gas is sold or processed and all subsequent agreements and amendments to such contracts within thirty (30) days after entering into or making such contracts, agreements or amendments. Such contracts and agreements when received by the General Land Office shall be held in confidence by the General Land Office unless otherwise authorized by Lessee. All other contracts and records pertaining to the production, transportation, sale and marketing of the oil and gas produced on said premises, including the books and accounts, receipts and discharges of all wells, tanks, pools, meters, and pipelines shall at all times be subject to inspection and examination by the Commissioner of the General Land Office, the Attorney General, the Governor, or the representative of any of them.

(B) PERMITS, DRILLING RECORDS. Written notice of all operations on this lease shall be submitted to the Commissioner of the General Land Office by Lessee or operator five (5) days before spud date, workover, re-entry, temporary abandonment or plug and abandonment of any well or wells. Such written notice to the General Land Office shall include copies of Railroad Commission forms for application to drill. Copies of well tests, completion reports and plugging reports shall be supplied to the General Land Office at the time they are filed with the Texas Railroad Commission. All applications, permits, reports or other filings that reference this lease or any specific well on the leased premises and that are submitted to the Texas Railroad Commission or any other governmental agency shall include the word "State" in the title. Additionally, in accordance with Railroad Commission rules, any signage on the leased premises for the purpose of identifying wells, tank batteries or other associated improvements to the land must also include the word "State." Lessee shall supply the General Land Office with any records, memoranda, accounts, reports, cuttings and cores, or other information relative to the operation of the above-described premises, which may be requested by the General Land Office, in addition to those herein expressly provided for. Lessee shall have an electrical and/or radioactivity survey made on the bore-hole section, from the base of the surface casing to the total depth of well, of all wells drilled on the above described premises and shall transmit a true copy of the log of each survey on each well to the General Land Office within fifteen (15) days after the making of said survey.

(C) PENALTIES. Lessee shall incur a penalty whenever reports, documents or other materials are not filed in the General Land Office when due. The penalty for late filing shall be set by the General Land Office administrative rule which is effective on the date when the materials were due in the General Land Office.

11. **DRY HOLE/CESSATION OF PRODUCTION DURING PRIMARY TERM.** If, during the primary term hereof and prior to discovery and production of oil or gas on said land, Lessee should drill a dry hole or holes thereon, or if during the primary term hereof and after the discovery and actual production of oil or gas from the leased premises such production thereof should cease from any cause, this lease shall not terminate if on or before the expiration of sixty (60) days from date of completion of said dry hole or cessation of production Lessee commences additional drilling or reworking operations thereon, or pays or tenders the next annual delay rental in the same manner as provided in this lease. If, during the last year of the primary term or within sixty (60) days prior thereto, a dry hole be completed and abandoned, or the production of oil or gas should cease for any cause, Lessee's rights shall remain in full force and effect without further operations until the expiration of the primary term; and if Lessee has not resumed production in paying quantities at the expiration of the primary term, Lessee may maintain this lease by conducting additional drilling or reworking



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operations pursuant to Paragraph 13, using the expiration of the primary term as the date of cessation of production under Paragraph 13. Should the first well or any subsequent well drilled on the above described land be completed as a shut-in oil or gas well within the primary term hereof, Lessee may resume payment of the annual rental in the same manner as provided herein on or before the rental paying date following the expiration of sixty (60) days from the date of completion of such shut-in oil or gas well and upon the failure to make such payment, this lease shall ipso facto terminate. If at the expiration of the primary term or any time thereafter a shut-in oil or gas well is located on the leased premises, payments may be made in accordance with the shut-in provisions hereof.

12. DRILLING AND REWORKING AT EXPIRATION OF PRIMARY TERM. If, at the expiration of the primary term, neither oil nor gas is being produced on said land, but Lessee is then engaged in drilling or reworking operations thereon, this lease shall remain in force so long as operations on said well or for drilling or reworking of any additional wells are prosecuted in good faith and in workmanlike manner without interruptions totaling more than sixty (60) days during any one such operation, and if they result in the production of oil and/or gas, so long thereafter as oil and/or gas is produced in paying quantities from said land, or payment of shut-in oil or gas well royalties or compensatory royalties is made as provided in this lease.

13. CESSATION, DRILLING, AND REWORKING. If, after the expiration of the primary term, production of oil or gas from the leased premises, after once obtained, should cease from any cause, this lease shall not terminate if Lessee commences additional drilling or reworking operations within sixty (60) days after such cessation, and this lease shall remain in full force and effect for so long as such operations continue in good faith and in workmanlike manner without interruptions totaling more than sixty (60) days. If such drilling or reworking operations result in the production of oil or gas, the lease shall remain in full force and effect for so long as oil or gas is produced from the leased premises in paying quantities or payment of shut-in oil or gas well royalties or payment of compensatory royalties is made as provided herein or as provided by law. If the drilling or reworking operations result in the completion of a well as a dry hole, the lease will not terminate if the Lessee commences additional drilling or reworking operations within sixty (60) days after the completion of the well as a dry hole, and this lease shall remain in effect so long as Lessee continues drilling or reworking operations in good faith and in a workmanlike manner without interruptions totaling more than sixty (60) days. Lessee shall give written notice to the General Land Office within thirty (30) days of any cessation of production.

14. SHUT-IN ROYALTIES. For purposes of this paragraph, "well" means any well that has been assigned a well number by the state agency having jurisdiction over the production of oil and gas. If, at any time after the expiration of the primary term of a lease that, until being shut in, was being maintained in force and effect, a well capable of producing oil or gas in paying quantities is located on the leased premises, but oil or gas is not being produced for lack of suitable production facilities or lack of a suitable market, then Lessee may pay as a shut-in oil or gas royalty an amount equal to double the annual rental provided in the lease, but not less than \$1,200 a year for each well capable of producing oil or gas in paying quantities. If Paragraph 3 of this lease does not specify a delay rental amount, then for the purposes of this paragraph, the delay rental amount shall be one dollar (\$1.00) per acre. To be effective, each initial shut-in oil or gas royalty must be paid on or before: (1) the expiration of the primary term, (2) 60 days after the Lessee ceases to produce oil or gas from the leased premises, or (3) 60 days after Lessee completes a drilling or reworking operation in accordance with the lease provisions; whichever date is latest. Such payment shall be made one-half (1/2) to the Commissioner of the General Land Office and one-half (1/2) to the owner of the soil. If the shut-in oil or gas royalty is paid, the lease shall be considered to be a producing lease and the payment shall extend the term of the lease for a period of one year from the end of the primary term, or from the first day of the month following the month in which production ceased, and, after that, if no suitable production facilities or suitable market for the oil or gas exists, Lessee may extend the lease for four more successive periods of one (1) year by paying the same amount each year on or before the expiration of each shut-in year.

15. COMPENSATORY ROYALTIES. If, during the period the lease is kept in effect by payment of the shut-in oil or gas royalty, oil or gas is sold and delivered in paying quantities from a well located within one thousand (1,000) feet of the leased premises and completed in the same producing reservoir, or in any case in which drainage is occurring, the right to continue to maintain the lease by paying the shut-in oil or gas royalty shall cease, but the lease shall remain effective for the remainder of the year for which the royalty has been paid. The Lessee may maintain the lease for four more successive years by Lessee paying compensatory royalty at the royalty rate provided in the lease of the market value of production from the well causing the drainage or which is completed in the same producing reservoir and within one thousand (1,000) feet of the leased premises. The compensatory royalty is to be paid monthly, one-half (1/2) to the Commissioner of the General Land Office and one-half (1/2) to the owner of the soil, beginning on or before the last day of the month following the month in which the oil or gas is produced from the well causing the drainage or that is completed in the same producing reservoir and located within one thousand (1,000) feet of the leased premises. If the compensatory royalty paid in any 12-month period is an amount less than the annual shut-in oil or gas royalty, Lessee shall pay an amount equal to the difference within thirty (30) days from the end of the 12-month period. Compensatory royalty payments which are not timely paid will accrue penalty and interest in accordance with Paragraph 9 of this lease. None of these provisions will relieve Lessee of the obligation of reasonable development nor the obligation to drill offset wells as provided in Texas Natural Resources Code 52.173; however, at the determination of the Commissioner, and with the Commissioner's written approval, the payment of compensatory royalties can satisfy the obligation to drill offset wells.

16. RETAINED ACREAGE. Notwithstanding any provision of this lease to the contrary, after a well producing or capable of producing oil or gas has been completed on the leased premises, Lessee shall exercise the diligence of a reasonably prudent operator in drilling such additional well or wells as may be reasonably necessary for the proper development of the leased premises and in marketing the production thereon.

(A) VERTICAL. In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall then terminate as to all of the leased premises, EXCEPT (1) 40 acres surrounding each oil well capable of producing in paying quantities and 320 acres surrounding each gas well capable of producing in paying quantities (including a shut-in oil or gas well as provided in Paragraph 14 hereof), or a well upon which Lessee is then engaged in continuous drilling or reworking operations, or (2) the number of acres included in a producing pooled unit pursuant to Texas Natural Resources Code 52.151-52.154, or (3) such greater or lesser number of acres as may then be allocated for production purposes to a proration unit for each such producing well under the rules and regulations of the Railroad Commission of Texas, or any successor agency, or other governmental authority having jurisdiction. If at any time after the effective date of the partial termination provisions hereof, the applicable field rules are changed or the well or wells located thereon are reclassified so that less acreage is thereafter allocated to said well or wells for production purposes, this lease shall thereupon terminate as to all acreage not thereafter allocated to said well or wells for production purposes. Notwithstanding the termination of this lease as to a portion of the lands covered hereby, Lessee shall nevertheless continue to have the right of ingress to and egress from the lands still subject to this lease for all purposes described in Paragraph 1 hereof, together with easements and rights-of-way for existing roads, existing pipelines and other existing facilities on, over and across all the lands described in Paragraph 1 hereof ("the retained lands"), for access to and from the retained lands and for the gathering or transportation of oil, gas and other minerals produced from the retained lands.



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(B) **HORIZONTAL.** In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall further terminate as to all depths below 100 feet below the total depth drilled (hereinafter "deeper depths") in each well located on acreage retained in Paragraph 16 (A) above, unless on or before two (2) years after the primary or extended term Lessee pays an amount equal to one-half (1/2) of the bonus originally paid as consideration for this lease (as specified on page 1 hereof). If such amount is paid, this lease shall be in force and effect as to such deeper depths, and said termination shall be delayed for an additional period of two (2) years and so long thereafter as oil or gas is produced in paying quantities from such deeper depths covered by this lease.

(C) **IDENTIFICATION AND FILING.** The surface acreage retained hereunder as to each well shall, as nearly as practical, be in the form of a square with the well located in the center thereof, or such other shape as may be approved by the Commissioner of the General Land Office. Within thirty (30) days after partial termination of this lease as provided herein, Lessee shall execute and record a release or releases containing a satisfactory legal description of the acreage and/or depths not retained hereunder. The recorded release, or a certified copy of same, shall be filed in the General Land Office, accompanied by the filing fee prescribed by the General Land Office rules in effect on the date the release is filed. If Lessee fails or refuses to execute and record such release or releases within ninety (90) days after being requested to do so by the General Land Office, then the Commissioner at his sole discretion may designate by written instrument the acreage and/or depths to be released hereunder and record such instrument at Lessee's expense in the county or counties where the lease is located and in the official records of the General Land Office and such designation shall be binding upon Lessee for all purposes.

17. **OFFSET WELLS.** Neither the bonus, delay rentals, nor royalties paid, or to be paid, under this lease shall relieve Lessee of his obligation to protect the oil and gas under the above-described land from being drained. Lessee, sublessee, receiver or other agent in control of the leased premises shall drill as many wells as the facts may justify and shall use appropriate means and drill to a depth necessary to prevent undue drainage of oil and gas from the leased premises. In addition, if oil and/or gas should be produced in commercial quantities within 1,000 feet of the leased premises, or in any case where the leased premises is being drained by production of oil or gas, the Lessee, sublessee, receiver or other agent in control of the leased premises shall in good faith begin the drilling of a well or wells upon the leased premises within 100 days after the draining well or wells or the well or wells completed within 1,000 feet of the leased premises start producing in commercial quantities and shall prosecute such drilling with diligence. Failure to satisfy the statutory offset obligation may subject this lease and the owner of the soil's agency rights to forfeiture. Only upon the determination of the Commissioner of the General Land Office and with his written approval may the payment of compensatory royalty under applicable statutory parameters satisfy the obligation to drill an offset well or wells required under this paragraph.

18. **FORCE MAJEURE.** If, after a good faith effort, Lessee is prevented from complying with any express or implied covenant of this lease, from conducting drilling operations on the leased premises, or from producing oil or gas from the leased premises by reason of war, rebellion, riots, strikes, acts of God, or any valid order, rule or regulation of government authority, then while so prevented, Lessee's obligation to comply with such covenant shall be suspended and Lessee shall not be liable for damages for failure to comply with such covenants; additionally, this lease shall be extended while Lessee is prevented, by any such cause, from conducting drilling and reworking operations or from producing oil or gas from the leased premises. However, nothing in this paragraph shall suspend the payment of delay rentals in order to maintain this lease in effect during the primary term in the absence of such drilling or reworking operations or production of oil or gas.

19. **WARRANTY CLAUSE.** The owner of the soil warrants and agrees to defend title to the leased premises. If the owner of the soil defaults in payments owed on the leased premises, then Lessee may redeem the rights of the owner of the soil in the leased premises by paying any mortgage, taxes or other liens on the leased premises. If Lessee makes payments on behalf of the owner of the soil under this paragraph, Lessee may recover the cost of these payments from the rental and royalties due the owner of the soil.

20. (A) **PROPORTIONATE REDUCTION CLAUSE.** If the owner of the soil owns less than the entire undivided surface estate in the above described land, whether or not Lessee's interest is specified herein, then the royalties and rental herein provided to be paid to the owner of the soil shall be paid to him in the proportion which his interest bears to the entire undivided surface estate and the royalties and rental herein provided to be paid to the Commissioner of the General Land Office of the State of Texas shall be likewise proportionately reduced. However, before Lessee adjusts the royalty or rental due to the Commissioner of the General Land Office, Lessee or his authorized representative must submit to the Commissioner of the General Land Office a written statement which explains the discrepancy between the interest purportedly leased under this lease and the actual interest owned by the owner of the soil. The Commissioner of the General Land Office shall be paid the value of the whole production allocable to any undivided interest not covered by a lease, less the proportionate development and production cost allocable to such undivided interest. However, in no event shall the Commissioner of the General Land Office receive as a royalty on the gross production allocable to the undivided interest not leased an amount less than the value of one-sixteenth (1/16) of such gross production.

(B) **REDUCTION OF PAYMENTS.** If, during the primary term, a portion of the land covered by this lease is included within the boundaries of a pooled unit that has been approved by the School Land Board and the owner of the soil in accordance with Natural Resources Code Sections 52.151-52.154, or if, at any time after the expiration of the primary term or the extended term, this lease covers a lesser number of acres than the total amount described herein, payments that are made on a per acre basis hereunder shall be reduced according to the number of acres pooled, released, surrendered, or otherwise severed, so that payments determined on a per acre basis under the terms of this lease during the primary term shall be calculated based upon the number of acres outside the boundaries of a pooled unit, or, if after the expiration of the primary term, the number of acres actually retained and covered by this lease.

21. **USE OF WATER.** Lessee shall have the right to use water produced on said land necessary for operations under this lease except water from wells or tanks of the owner of the soil; provided, however, Lessee shall not use potable water or water suitable for livestock or irrigation purposes for waterflood operations without the prior consent of the owner of the soil.

22. **AUTHORIZED DAMAGES.** Lessee shall pay the owner of the soil for damages caused by its operations to all personal property, improvements, livestock and crops on said land.

23. **PIPELINE DEPTH.** When requested by the owner of the soil, Lessee shall bury its pipelines below plow depth.

24. **WELL LOCATION LIMIT.** No well shall be drilled nearer than two hundred (200) feet to any house or barn now on said premises without the written consent of the owner of the soil.



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25. POLLUTION. In developing this area, Lessee shall use the highest degree of care and all proper safeguards to prevent pollution. Without limiting the foregoing, pollution of coastal wetlands, natural waterways, rivers and impounded water shall be prevented by the use of containment facilities sufficient to prevent spillage, seepage or ground water contamination. In the event of pollution, Lessee shall use all means at its disposal to recapture all escaped hydrocarbons or other pollutant and shall be responsible for all damage to public and private properties. Lessee shall build and maintain fences around its slush, sump, and drainage pits and tank batteries so as to protect livestock against loss, damage or injury; and upon completion or abandonment of any well or wells, Lessee shall fill and level all slush pits and cellars and completely clean up the drilling site of all rubbish thereon. Lessee shall, while conducting operations on the leased premises, keep said premises free of all rubbish, cans, bottles, paper cups or garbage, and upon completion of operations shall restore the surface of the land to as near its original condition and contours as is practicable. Tanks and equipment will be kept painted and presentable.

26. REMOVAL OF EQUIPMENT. Subject to limitations in this paragraph, Lessee shall have the right to remove machinery and fixtures placed by Lessee on the leased premises, including the right to draw and remove casing, within one hundred twenty (120) days after the expiration or the termination of this lease unless the owner of the soil grants Lessee an extension of this 120-day period. However, Lessee may not remove casing from any well capable of producing oil and gas in paying quantities. Additionally, Lessee may not draw and remove casing until after thirty (30) days written notice to the Commissioner of the General Land Office and to the owner of the soil. The owner of the soil shall become the owner of any machinery, fixtures, or casing which are not timely removed by Lessee under the terms of this paragraph.

27. (A) ASSIGNMENTS. Under the conditions contained in this paragraph and Paragraph 29 of this lease, the rights and estates of either party to this lease may be assigned, in whole or in part, and the provisions of this lease shall extend to and be binding upon their heirs, devisees, legal representatives, successors and assigns. However, a change or division in ownership of the land, rentals, or royalties will not enlarge the obligations of Lessee, diminish the rights, privileges and estates of Lessee, impair the effectiveness of any payment made by Lessee or impair the effectiveness of any act performed by Lessee. And no change or division in ownership of the land, rentals, or royalties shall bind Lessee for any purpose until thirty (30) days after the owner of the soil (or his heirs, devisees, legal representatives or assigns) furnishes the Lessee with satisfactory written evidence of the change in ownership, including the original recorded muniments of title (or a certified copy of such original) when the ownership changed because of a conveyance. A total or partial assignment of this lease shall, to the extent of the interest assigned, relieve and discharge Lessee of all subsequent obligations under this lease. If this lease is assigned in its entirety as to only part of the acreage, the right and option to pay rentals shall be apportioned as between the several owners ratably, according to the area of each, and failure by one or more of them to pay his share of the rental shall not affect this lease on the part of the land upon which pro rata rentals are timely paid or tendered; however, if the assignor or assignee does not file a certified copy of such assignment in the General Land Office before the next rental paying date, the entire lease shall terminate for failure to pay the entire rental due under Paragraph 3. Every assignee shall succeed to all rights and be subject to all obligations, liabilities, and penalties owed to the State by the original lessee or any prior assignee of the lease, including any liabilities to the State for unpaid royalties.

(B) ASSIGNMENT LIMITATION. Notwithstanding any provision in Paragraph 27(a), if the owner of the soil acquires this lease in whole or in part by assignment without the prior written approval of the Commissioner of the General Land Office, this lease is void as of the time of assignment and the agency power of the owner may be forfeited by the Commissioner. An assignment will be treated as if it were made to the owner of the soil if the assignee is:

- (1) a nominee of the owner of the soil;
- (2) a corporation or subsidiary in which the owner of the soil is a principal stockholder or is an employee of such a corporation or subsidiary;
- (3) a partnership in which the owner of the soil is a partner or is an employee of such a partnership;
- (4) a principal stockholder or employee of the corporation which is the owner of the soil;
- (5) a partner or employee in a partnership which is the owner of the soil;
- (6) a fiduciary for the owner of the soil; including but not limited to a guardian, trustee, executor, administrator, receiver, or conservator for the owner of the soil; or
- (7) a family member of the owner of the soil or related to the owner of the soil by marriage, blood, or adoption.

28. RELEASES. Under the conditions contained in this paragraph and Paragraph 29, Lessee may at any time execute and deliver to the owner of the soil and place of record a release or releases covering any portion or portions of the leased premises, and thereby surrender this lease as to such portion or portions, and be relieved of all subsequent obligations as to acreage surrendered. If any part of this lease is properly surrendered, the delay rental due under this lease shall be reduced by the proportion that the surrendered acreage bears to the acreage which was covered by this lease immediately prior to such surrender; however, such release will not relieve Lessee of any liabilities which may have accrued under this lease prior to the surrender of such acreage.

29. FILING OF ASSIGNMENTS AND RELEASES. If all or any part of this lease is assigned or released, such assignment or release must be recorded in the county where the land is situated, and the recorded instrument, or a copy of the recorded instrument certified by the County Clerk of the county in which the instrument is recorded, must be filed in the General Land Office within 90 days of the last execution date accompanied by the prescribed filing fee. If any such assignment is not so filed, the rights acquired under this lease shall be subject to forfeiture at the option of the Commissioner of the General Land Office.

30. DISCLOSURE CLAUSE. All provisions pertaining to the lease of the above-described land have been included in this instrument, including the statement of the true consideration to be paid for the execution of this lease and the rights and duties of the parties. Any collateral agreements concerning the development of oil and gas from the leased premises which are not contained in this lease render this lease invalid.

31. FIDUCIARY DUTY. The owner of the soil owes the State a fiduciary duty and must fully disclose any facts affecting the State's interest in the leased premises. When the interests of the owner of the soil conflict with those of the State, the owner of the soil is obligated to put the State's interests before his personal interests.

32. FORFEITURE. If Lessee shall fail or refuse to make the payment of any sum within thirty days after it becomes due, or if Lessee or an authorized agent should knowingly make any false return or false report concerning production or drilling, or if Lessee shall fail or refuse to drill any offset well or wells in good faith as required by law and the rules and regulations adopted by the Commissioner of the General Land Office, or if Lessee should fail to file reports in the manner required by law or fail to comply with rules and regulations promulgated by the General Land Office, the School Land Board, or the Railroad Commission, or if Lessee should refuse the proper authority access to the records pertaining to operations, or if Lessee or an authorized agent should knowingly fail or refuse to give correct information to the proper authority, or knowingly fail or refuse to furnish the General Land Office a correct log of any well, or if Lessee shall knowingly violate any of the material provisions of this lease, or if this lease is assigned and the assignment is not filed in the General Land Office as required by law, the rights acquired under this lease shall be subject to forfeiture by the



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Commissioner, and he shall forfeit same when sufficiently informed of the facts which authorize a forfeiture, and when forfeited the area shall again be subject to lease under the terms of the Relinquishment Act. However, nothing herein shall be construed as waiving the automatic termination of this lease by operation of law or by reason of any special limitation arising hereunder. Forfeitures may be set aside and this lease and all rights thereunder reinstated before the rights of another intervene upon satisfactory evidence to the Commissioner of the General Land Office of future compliance with the provisions of the law and of this lease and the rules and regulations that may be adopted relative hereto.

33. LIEN. In accordance with Texas Natural Resources Code 52.136, the State shall have a first lien upon all oil and gas produced from the area covered by this lease to secure payment of all unpaid royalty and other sums of money that may become due under this lease. By acceptance of this lease, Lessee grants the State, in addition to the lien provided by Texas Natural Resources Code 52.136 and any other applicable statutory lien, an express contractual lien on and security interest in all leased minerals in and extracted from the leased premises, all proceeds which may accrue to Lessee from the sale of such leased minerals, whether such proceeds are held by Lessee or by a third party, and all fixtures on and improvements to the leased premises used in connection with the production or processing of such leased minerals in order to secure the payment of all royalties or other amounts due or to become due under this lease and to secure payment of any damages or loss that Lessor may suffer by reason of Lessee's breach of any covenant or condition of this lease, whether express or implied. This lien and security interest may be foreclosed with or without court proceedings in the manner provided in the Title 1, Chap. 9 of the Texas Business and Commerce Code. Lessee agrees that the Commissioner may require Lessee to execute and record such instruments as may be reasonably necessary to acknowledge, attach or perfect this lien. Lessee hereby represents that there are no prior or superior liens arising from and relating to Lessee's activities upon the above-described property or from Lessee's acquisition of this lease. Should the Commissioner at any time determine that this representation is not true, then the Commissioner may declare this lease forfeited as provided herein.

34. POOLING. Lessee is hereby granted the right to pool or unitize the royalty interest of the owner of the soil under this lease with any other leasehold or mineral interest for the exploration, development and production of oil or gas or either of them upon the same terms as shall be approved by the School Land Board and the Commissioner of the General Land Office for the pooling or unitizing of the interest of the State under this lease pursuant to Texas Natural Resources Code 52.151-52.154. The owner of the soil agrees that the inclusion of this provision in this lease satisfies the execution requirements stated in Texas Natural Resources Code 52.152.

35. INDEMNITY. Lessee hereby releases and discharges the State of Texas and the owner of the soil, their officers, employees, partners, agents, contractors, subcontractors, guests, invitees, and their respective successors and assigns, of and from all and any actions and causes of action of every nature, or other harm, including environmental harm, for which recovery of damages is sought, including, but not limited to, all losses and expenses which are caused by the activities of Lessee, its officers, employees, and agents arising out of, incidental to, or resulting from, the operations of or for Lessee on the leased premises hereunder, or that may arise out of or be occasioned by Lessee's breach of any of the terms or provisions of this Agreement, or by any other negligent or strictly liable act or omission of Lessee. Further, Lessee hereby agrees to be liable for, exonerate, indemnify, defend and hold harmless the State of Texas and the owner of the soil, their officers, employees and agents, their successors or assigns, against any and all claims, liabilities, losses, damages, actions, personal injury (including death), costs and expenses, or other harm for which recovery of damages is sought, under any theory including tort, contract, or strict liability, including attorneys' fees and other legal expenses, including those related to environmental hazards, on the leased premises or in any way related to Lessee's failure to comply with any and all environmental laws; those arising from or in any way related to Lessee's operations or any other of Lessee's activities on the leased premises; those arising from Lessee's use of the surface of the leased premises; and those that may arise out of or be occasioned by Lessee's breach of any of the terms or provisions of this Agreement or any other act or omission of Lessee, its directors, officers, employees, partners, agents, contractors, subcontractors, guests, invitees, and their respective successors and assigns. Each assignee of this Agreement, or an interest therein, agrees to be liable for, exonerate, indemnify, defend and hold harmless the State of Texas and the owner of the soil, their officers, employees, and agents in the same manner provided above in connection with the activities of Lessee, its officers, employees, and agents as described above. **EXCEPT AS OTHERWISE EXPRESSLY LIMITED HEREIN, ALL OF THE INDEMNITY OBLIGATIONS AND/OR LIABILITIES ASSUMED UNDER THE TERMS OF THIS AGREEMENT SHALL BE WITHOUT LIMITS AND WITHOUT REGARD TO THE CAUSE OR CAUSES THEREOF (EXCLUDING PRE-EXISTING CONDITIONS), STRICT LIABILITY, OR THE NEGLIGENCE OF ANY PARTY OR PARTIES (INCLUDING THE NEGLIGENCE OF THE INDEMNIFIED PARTY), WHETHER SUCH NEGLIGENCE BE SOLE, JOINT, CONCURRENT, ACTIVE, OR PASSIVE.**

36. ENVIRONMENTAL HAZARDS. Lessee shall use the highest degree of care and all reasonable safeguards to prevent contamination or pollution of any environmental medium, including soil, surface waters, groundwater, sediments, and surface or subsurface strata, ambient air or any other environmental medium in, on, or under, the leased premises, by any waste, pollutant, or contaminant. Lessee shall not bring or permit to remain on the leased premises any asbestos containing materials, explosives, toxic materials, or substances regulated as hazardous wastes, hazardous materials, hazardous substances (as the term "Hazardous Substance" is defined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Sections 9601, et seq.), or toxic substances under any federal, state, or local law or regulation ("Hazardous Materials"), except ordinary products commonly used in connection with oil and gas exploration and development operations and stored in the usual manner and quantities. **LESSEE'S VIOLATION OF THE FOREGOING PROHIBITION SHALL CONSTITUTE A MATERIAL BREACH AND DEFAULT HEREUNDER AND LESSEE SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE STATE OF TEXAS AND THE OWNER OF THE SOIL FROM AND AGAINST ANY CLAIMS, DAMAGES, JUDGMENTS, PENALTIES, LIABILITIES, AND COSTS (INCLUDING REASONABLE ATTORNEYS' FEES AND COURT COSTS) CAUSED BY OR ARISING OUT OF (1) A VIOLATION OF THE FOREGOING PROHIBITION OR (2) THE PRESENCE, RELEASE, OR DISPOSAL OF ANY HAZARDOUS MATERIALS ON, UNDER, OR ABOUT THE LEASED PREMISES DURING LESSEE'S OCCUPANCY OR CONTROL OF THE LEASED PREMISES. LESSEE SHALL CLEAN UP, REMOVE, REMEDY AND REPAIR ANY SOIL OR GROUND WATER CONTAMINATION AND DAMAGE CAUSED BY THE PRESENCE OR RELEASE OF ANY HAZARDOUS MATERIALS IN, ON, UNDER, OR ABOUT THE LEASED PREMISES DURING LESSEE'S OCCUPANCY OF THE LEASED PREMISES IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE LAW. THIS INDEMNIFICATION AND ASSUMPTION SHALL APPLY, BUT IS NOT LIMITED TO, LIABILITY FOR RESPONSE ACTIONS UNDERTAKEN PURSUANT TO CERCLA OR ANY OTHER ENVIRONMENTAL LAW OR REGULATION. LESSEE SHALL IMMEDIATELY GIVE THE STATE OF TEXAS AND THE OWNER OF THE SOIL WRITTEN NOTICE OF ANY BREACH OR SUSPECTED BREACH OF THIS PARAGRAPH, UPON LEARNING OF THE PRESENCE OF ANY HAZARDOUS MATERIALS, OR UPON RECEIVING A NOTICE FROM ANY GOVERNMENTAL AGENCY PERTAINING TO HAZARDOUS MATERIALS WHICH MAY AFFECT THE LEASED PREMISES. THE OBLIGATIONS OF LESSEE HEREUNDER SHALL SURVIVE THE EXPIRATION OR EARLIER TERMINATION, FOR ANY REASON, OF THIS AGREEMENT.**

37. APPLICABLE LAW. This lease is issued under the provisions of Texas Natural Resources Code 52.171 through 52.190, commonly known as the Relinquishment Act, and other applicable statutes and amendments thereto, and if any provision in this lease does not conform to these statutes, the statutes will prevail over any nonconforming lease provisions.



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38. EXECUTION. This oil and gas lease must be signed and acknowledged by the Lessee before it is filed of record in the county records and in the General Land Office of the State of Texas. Once the filing requirements found in Paragraph 39 of this lease have been satisfied, the effective date of this lease shall be the date found on Page 1.

39. LEASE FILING. Pursuant to Chapter 9 of the Texas Business and Commerce Code, this lease must be filed of record in the office of the County Clerk in any county in which all or any part of the leased premises is located, and certified copies thereof must be filed in the General Land Office. This lease is not effective until a certified copy of this lease (which is made and certified by the County Clerk from his records) is filed in the General Land Office in accordance with Texas Natural Resources Code 52.183. Additionally, this lease shall not be binding upon the State unless it recites the actual and true consideration paid or promised for execution of this lease. The bonus due the State and the prescribed filing fee shall accompany such certified copy to the General Land Office.

LESSEE

Cimarex Energy Co.

R. Alexander
By: Roger Alexander
Title: Attorney-in-Fact for Cimarex Energy Co.

Date: _____

STATE OF TEXAS

BY: *Michael Anderson Harrison*
Michael Anderson Harrison, a married man
dealing in his sole and separate property

Individually and as agent for the State of Texas

Date: _____

STATE OF TEXAS

BY: *William Henry Oliver Harrison, Jr.*
William Henry Oliver Harrison, Jr., a married
man dealing in his sole and separate property

Date: _____

STATE OF TEXAS

BY: *Kathryn Nell Harrison*
Kathryn Nell Harrison, a single woman dealing
in her sole and separate property

Date: *Kathryn Nell Harrison*

STATE OF TEXAS

BY: _____
Individually and as agent for the State of Texas

Date: _____



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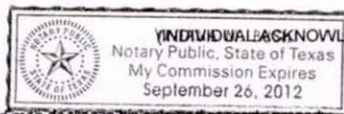
STATE OF Texas
COUNTY OF Midland

(CORPORATION ACKNOWLEDGMENT)

BEFORE ME, the undersigned authority, on this day personally appeared Roger Alexander
known to me to be the person whose name is subscribed to the foregoing instruments as Attorney-in-Fact
of Cimarex Energy Co. and acknowledged to me that he
executed the same for the purposes and consideration therein expressed, in the capacity stated, and as the act and deed of said corporation.
Given under my hand and seal of office this the 1st day of September, 20 11.

Notary Public in and for Viviana M. Bush

STATE OF Texas
COUNTY OF Beaver



This instrument was acknowledged by Michael Anderson Harrison, a married man dealing in his sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.
Given under my hand and seal of office this the 25th day of August, 20 10.

Notary Public in and for Jessie H. Long

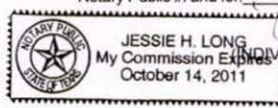
STATE OF Texas
COUNTY OF Beaver



This instrument was acknowledged by William Henry Oliver Harrison, Jr., a married man dealing in his sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.
Given under my hand and seal of office this the 25th day of August, 20 10.

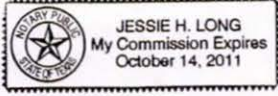
Notary Public in and for Jessie H. Long

STATE OF Texas
COUNTY OF Beaver



This instrument was acknowledged by Kathryn Nell Harrison, a single woman dealing in her sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.
Given under my hand and seal of office this the 25th day of August, 20 10.

Notary Public in and for Jessie H. Long



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EXHIBIT "A"

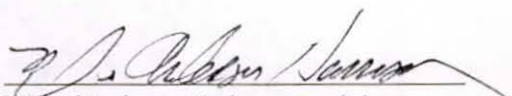
Paragraph 3 and 16(B) in the printed Form Lease are deleted in their entirety and replaced with the following:

PAID UP RENTALS

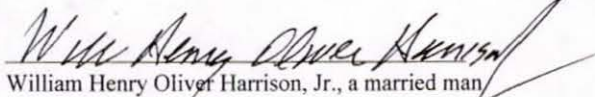
3. Rentals for years two and three of this lease have been prepaid as part of the total lease bonus consideration for the first three years of this lease. One half (1/2) of this amount has been paid to the Lessor and one half (1/2) has been paid to the State of Texas. Rental for the fourth year in the amount of \$431,298.00 has not been paid and if the fourth year rental is not paid then this lease will expire. One half (1/2) of the fourth year rental will be paid to the Lessor and one half (1/2) will be paid to the State of Texas. Rental for the fifth year is included in the fourth year rental and if the fourth year rental is paid then no additional rentals are due under this lease.

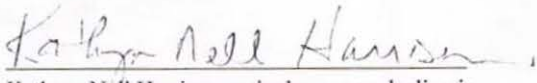
HORIZONTAL

16. (B) HORIZONTAL. In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall further terminate as to all depths in each well located on acreage retained in Paragraph 16 (A) above, EXCEPT depths from 100' above and 100' below each zone and/or formation producing in paying quantities. Notwithstanding the foregoing, if there is more than one separate and identifiable zone and/or formation that is producing in paying quantities and Lessee desires to produce each of these zones and/or formations, Lessee shall provide Lessors with a written communication identifying in detail each separate and identifiable zone and/or formation that is producing in paying quantities and this lease shall then remain in force and effect as to depths from 100' above and 100' below each separate producing zone and/or formation identified by Lessee so long as oil or gas is produced in paying quantities.


Michael Anderson Harrison, a married man
dealing in his sole and separate property


Roger Alexander
Attorney-In-Fact
Cimarex Energy Co. fm


William Henry Oliver Harrison, Jr., a married man
dealing in his sole and separate property

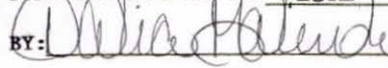

Kathryn Nell Harrison, a single woman dealing in
her sole and separate property

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL,
OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR
OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL
LAW

FILE # 4819

FILED FOR RECORD ON THE 17TH DAY OF DECEMBER A.D. 2010 4:20 P.M.

DULY RECORDED ON THE 23RD DAY OF DECEMBER A.D. 2010 9:00 A.M.

BY: , DEPUTY

DIANNE O. FLOREZ, COUNTY CLERK
REEVES COUNTY, TEXAS



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Original filed in
Reeves County
Clerks Office

2

11111

File No. 111989

Lease

Date Filed: 12/29/11 1/12/11

Jerry E. Patterson, Commissioner

By: JH

CERTIFIED TRUE AND CORRECT COPY CERTIFICATE
STATE OF TEXAS
COUNTY OF REEVES

The above and foregoing is a full, true and correct photographic copy of the original record now in my lawful custody and possession, as the same is filed/recorded in the public records of my office, found in VDL 860
PAGE 766 THRU 775

OFFICIAL PUBLIC
RECORDS

I hereby certified on 12/30/2010



DIANNE O. FLOREZ, COUNTY CLERK
REEVES COUNTY, TEXAS

BY: Dalia Galindo DEPUTY

FILE # 4819

General Land Office
Relinquishment Act Lease Form
Revised, September 1997

MF 111909

The State of Texas



Austin, Texas

OIL AND GAS LEASE

THIS AGREEMENT is made and entered into this 1st day of July, 2010, between the State of Texas, acting by and through its agent, Michael Anderson Harrison, a married man dealing in his sole and separate property; William Henry Oliver Harrison, Jr., a married man dealing in his sole and separate property; Kathryn Nell Harrison, a single woman dealing in her sole and separate property of P.O. Box 2399, Pecos, Texas 79772 (Give Permanent Address) said agent herein referred to as the owner of the soil (whether one or more), and Cimarex Energy Co. of 600 N. Marienfeld, Suite 600, Midland, Texas 79701 hereinafter called Lessee. (Give Permanent Address)

1. **GRANTING CLAUSE.** For and in consideration of the amounts stated below and of the covenants and agreements to be paid, kept and performed by Lessee under this lease, the State of Texas acting by and through the owner of the soil, hereby grants, leases and lets unto Lessee, for the sole and only purpose of prospecting and drilling for and producing oil and gas, laying pipe lines, building tanks, storing oil and building power stations, telephone lines and other structures thereon, to produce, save, take care of, treat and transport said products of the lease, the following lands situated in Reeves County, State of Texas, to-wit:

Section 24, SAE the SE/4NE/4NE/4 and the NE/4NW/4NW/4, A-3491, Block 2, H&GN RR Co. Survey

containing 616.14 acres, more or less. The bonus consideration paid for this lease is as follows:

To the State of Texas: Two hundred fifteen thousand, six hundred forty nine dollars and 00/100
Dollars (\$215,649.00)

To the owner of the soil: Two hundred fifteen thousand, six hundred forty nine dollars and 00/100
Dollars (\$215,649.00)

Total bonus consideration: Four hundred thirty one thousand, two hundred ninety eight dollars and 00/100
Dollars (\$431,298.00)

The total bonus consideration paid represents a bonus of Seven Hundred and 00/100

Dollars (\$700.00) per acre, on 616.14 net acres.

2. **TERM.** Subject to the other provisions in this lease, this lease shall be for a term of 5 (Five) years from this date (herein called "primary term") and as long thereafter as oil and gas, or either of them, is produced in paying quantities from said land. As used in this lease, the term "produced in paying quantities" means that the receipts from the sale or other authorized commercial use of the substance(s) covered exceed out of pocket operational expenses for the six months last past.



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3. DELAY RENTALS. If no well is commenced on the leased premises on or before one (1) year from this date, this lease shall terminate, unless on or before such anniversary date Lessee shall pay or tender to the owner of the soil or to his credit in the _____

See Exhibit "A" for Rental Instructions _____ Bank, at _____, or its successors (which shall continue as the depository regardless of changes in the ownership of said land), the amount specified below; in addition, Lessee shall pay or tender to the COMMISSIONER OF THE GENERAL LAND OFFICE OF THE STATE OF TEXAS, AT AUSTIN, TEXAS, a like sum on or before said date. Payments under this paragraph shall operate as a rental and shall cover the privilege of deferring the commencement of a well for one (1) year from said date. Payments under this paragraph shall be in the following amounts:

To the owner of the soil: _____
Dollars (\$ _____)

To the State of Texas: _____
Dollars (\$ _____)

Total Delay Rental: _____
Dollars (\$ _____)

In a like manner and upon like payments or tenders annually, the commencement of a well may be further deferred for successive periods of one (1) year each during the primary term. All payments or tenders of rental to the owner of the soil may be made by check or sight draft of Lessee, or any assignee of this lease, and may be delivered on or before the rental paying date. If the bank designated in this paragraph (or its successor bank) should cease to exist, suspend business, liquidate, fail or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default for failure to make such payments or tenders of rental until thirty (30) days after the owner of the soil shall deliver to Lessee a proper recordable instrument naming another bank as agent to receive such payments or tenders.

4. PRODUCTION ROYALTIES. Upon production of oil and/or gas, Lessee agrees to pay or cause to be paid one-half (1/2) of the royalty provided for in this lease to the Commissioner of the General Land Office of the State of Texas, at Austin, Texas, and one-half (1/2) of such royalty to the owner of the soil:

(A) OIL. Royalty payable on oil, which is defined as including all hydrocarbons produced in a liquid form at the mouth of the well and also as all condensate, distillate, and other liquid hydrocarbons recovered from oil or gas run through a separator or other equipment, as hereinafter provided, shall be 1/4 part of the gross production or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such value to be determined by 1) the highest posted price, plus premium, if any, offered or paid for oil, condensate, distillate, or other liquid hydrocarbons, respectively, of a like type and gravity in the general area where produced and when run, or 2) the highest market price thereof offered or paid in the general area where produced and when run, or 3) the gross proceeds of the sale thereof, whichever is the greater. Lessee agrees that before any gas produced from the leased premises is sold, used or processed in a plant, it will be run free of cost to the royalty owners through an adequate oil and gas separator of conventional type, or other equipment at least as efficient, so that all liquid hydrocarbons recoverable from the gas by such means will be recovered. The requirement that such gas be run through a separator or other equipment may be waived, in writing, by the royalty owners upon such terms and conditions as they prescribe.

(B) NON PROCESSED GAS. Royalty on any gas (including flared gas), which is defined as all hydrocarbons and gaseous substances not defined as oil in subparagraph (A) above, produced from any well on said land (except as provided herein with respect to gas processed in a plant for the extraction of gasoline, liquid hydrocarbons or other products) shall be 1/4 part of the gross production or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such value to be based on the highest market price paid or offered for gas of comparable quality in the general area where produced and when run, or the gross price paid or offered to the producer, whichever is the greater; provided that the maximum pressure base in measuring the gas under this lease shall not at any time exceed 14.65 pounds per square inch absolute, and the standard base temperature shall be sixty (60) degrees Fahrenheit, correction to be made for pressure according to Boyle's Law, and for specific gravity according to tests made by the Balance Method or by the most approved method of testing being used by the industry at the time of testing.

(C) PROCESSED GAS. Royalty on any gas processed in a gasoline plant or other plant for the recovery of gasoline or other liquid hydrocarbons shall be 1/4 part of the residue gas and the liquid hydrocarbons extracted or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office. All royalties due herein shall be based on one hundred percent (100%) of the total plant production of residue gas attributable to gas produced from this lease, and on fifty percent (50%), or that percent accruing to Lessee, whichever is the greater, of the total plant production of liquid hydrocarbons attributable to the gas produced from this lease; provided that if liquid hydrocarbons are recovered from gas processed in a plant in which Lessee (or its parent, subsidiary or affiliate) owns an interest, then the percentage applicable to liquid hydrocarbons shall be fifty percent (50%) or the highest percent accruing to a third party processing gas through such plant under a processing agreement negotiated at arm's length (or if there is no such third party, the highest percent then being specified in processing agreements or contracts in the industry), whichever is the greater. The respective royalties on residue gas and on liquid hydrocarbons shall be determined by 1) the highest market price paid or offered for any gas (or liquid hydrocarbons) of comparable quality in the general area, or 2) the gross price paid or offered for such residue gas (or the weighted average gross selling price for the respective grades of liquid hydrocarbons), whichever is the greater. In no event, however, shall the royalties payable under this paragraph be less than the royalties which would have been due had the gas not been processed.

(D) OTHER PRODUCTS. Royalty on carbon black, sulphur or any other products produced or manufactured from gas (excepting liquid hydrocarbons) whether said gas be "casinghead," "dry," or any other gas, by fractionating, burning or any other processing shall be 1/4 part of the gross production of such products, or the market value thereof, at the option of the owner of the soil or the Commissioner of the General Land Office, such market value to be determined as follows: 1) on the basis of the highest market price of each product for the same month in which such product is produced, or 2) on the basis of the average gross sale price of each product for the same month in which such products are produced; whichever is the greater.

5. MINIMUM ROYALTY. During any year after the expiration of the primary term of this lease, if this lease is maintained by production, the royalties paid under this lease in no event shall be less than an amount equal to the total annual delay rental herein provided; otherwise, there shall be due and payable on or before the last day of the month succeeding the anniversary date of this lease a sum equal to the total annual rental less the amount of royalties paid during the preceding year. If Paragraph 3 of this lease does not specify a delay rental amount, then for the purposes of this paragraph, the delay rental amount shall be one dollar (\$1.00) per acre.



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6. **ROYALTY IN KIND.** Notwithstanding any other provision in this lease, at any time or from time to time, the owner of the soil or the Commissioner of the General Land Office may, at the option of either, upon not less than sixty (60) days notice to the holder of the lease, require that the payment of any royalties accruing to such royalty owner under this lease be made in kind. The owner of the soil's or the Commissioner of the General Land Office's right to take its royalty in kind shall not diminish or negate the owner of the soil's or the Commissioner of the General Land Office's rights or Lessee's obligations, whether express or implied, under this lease.

7. **NO DEDUCTIONS.** Lessee agrees that all royalties accruing under this lease (including those paid in kind) shall be without deduction for the cost of producing, gathering, storing, separating, treating, dehydrating, compressing, processing, transporting, and otherwise making the oil, gas and other products hereunder ready for sale or use. Lessee agrees to compute and pay royalties on the gross value received, including any reimbursements for severance taxes and production related costs.

8. **PLANT FUEL AND RECYCLED GAS.** No royalty shall be payable on any gas as may represent this lease's proportionate share of any fuel used to process gas produced hereunder in any processing plant. Notwithstanding any other provision of this lease, and subject to the written consent of the owner of the soil and the Commissioner of the General Land Office, Lessee may recycle gas for gas lift purposes on the leased premises or for injection into any oil or gas producing formation underlying the leased premises after the liquid hydrocarbons contained in the gas have been removed; no royalties shall be payable on the recycled gas until it is produced and sold or used by Lessee in a manner which entitles the royalty owners to a royalty under this lease.

9. **ROYALTY PAYMENTS AND REPORTS.** All royalties not taken in kind shall be paid to the Commissioner of the General Land Office at Austin, Texas, in the following manner:

Payment of royalty on production of oil and gas shall be as provided in the rules set forth in the Texas Register. Rules currently provide that royalty on oil is due and must be received in the General Land Office on or before the 5th day of the second month succeeding the month of production, and royalty on gas is due and must be received in the General Land Office on or before the 15th day of the second month succeeding the month of production, accompanied by the affidavit of the owner, manager or other authorized agent, completed in the form and manner prescribed by the General Land Office and showing the gross amount and disposition of all oil and gas produced and the market value of the oil and gas, together with a copy of all documents, records or reports confirming the gross production, disposition and market value including gas meter readings, pipeline receipts, gas line receipts and other checks or memoranda of amount produced and put into pipelines, tanks, or pools and gas lines or gas storage, and any other reports or records which the General Land Office may require to verify the gross production, disposition and market value. In all cases the authority of a manager or agent to act for the Lessee herein must be filed in the General Land Office. Each royalty payment shall be accompanied by a check stub, schedule, summary or other remittance advice showing by the assigned General Land Office lease number the amount of royalty being paid on each lease. If Lessee pays his royalty on or before thirty (30) days after the royalty payment was due, then Lessee owes a penalty of 5% on the royalty or \$25.00, whichever is greater. A royalty payment which is over thirty (30) days late shall accrue a penalty of 10% of the royalty due or \$25.00 whichever is greater. In addition to a penalty, royalties shall accrue interest at a rate of 12% per year; such interest will begin to accrue when the royalty is sixty (60) days overdue. Affidavits and supporting documents which are not filed when due shall incur a penalty in an amount set by the General Land Office administrative rule which is effective on the date when the affidavits or supporting documents were due. The Lessee shall bear all responsibility for paying or causing royalties to be paid as prescribed by the due date provided herein. Payment of the delinquency penalty shall in no way operate to prohibit the State's right of forfeiture as provided by law nor act to postpone the date on which royalties were originally due. The above penalty provisions shall not apply in cases of title dispute as to the State's portion of the royalty or to that portion of the royalty in dispute as to fair market value.

10. (A) **RESERVES, CONTRACTS AND OTHER RECORDS.** Lessee shall annually furnish the Commissioner of the General Land Office with its best possible estimate of oil and gas reserves underlying this lease or allocable to this lease and shall furnish said Commissioner with copies of all contracts under which gas is sold or processed and all subsequent agreements and amendments to such contracts within thirty (30) days after entering into or making such contracts, agreements or amendments. Such contracts and agreements when received by the General Land Office shall be held in confidence by the General Land Office unless otherwise authorized by Lessee. All other contracts and records pertaining to the production, transportation, sale and marketing of the oil and gas produced on said premises, including the books and accounts, receipts and discharges of all wells, tanks, pools, meters, and pipelines shall at all times be subject to inspection and examination by the Commissioner of the General Land Office, the Attorney General, the Governor, or the representative of any of them.

(B) **PERMITS, DRILLING RECORDS.** Written notice of all operations on this lease shall be submitted to the Commissioner of the General Land Office by Lessee or operator five (5) days before spud date, workover, re-entry, temporary abandonment or plug and abandonment of any well or wells. Such written notice to the General Land Office shall include copies of Railroad Commission forms for application to drill. Copies of well tests, completion reports and plugging reports shall be supplied to the General Land Office at the time they are filed with the Texas Railroad Commission. All applications, permits, reports or other filings that reference this lease or any specific well on the leased premises and that are submitted to the Texas Railroad Commission or any other governmental agency shall include the word "State" in the title. Additionally, in accordance with Railroad Commission rules, any signage on the leased premises for the purpose of identifying wells, tank batteries or other associated improvements to the land must also include the word "State." Lessee shall supply the General Land Office with any records, memoranda, accounts, reports, cuttings and cores, or other information relative to the operation of the above-described premises, which may be requested by the General Land Office, in addition to those herein expressly provided for. Lessee shall have an electrical and/or radioactivity survey made on the bore-hole section, from the base of the surface casing to the total depth of well, of all wells drilled on the above described premises and shall transmit a true copy of the log of each survey on each well to the General Land Office within fifteen (15) days after the making of said survey.

(C) **PENALTIES.** Lessee shall incur a penalty whenever reports, documents or other materials are not filed in the General Land Office when due. The penalty for late filing shall be set by the General Land Office administrative rule which is effective on the date when the materials were due in the General Land Office.

11. **DRY HOLE/CESSATION OF PRODUCTION DURING PRIMARY TERM.** If, during the primary term hereof and prior to discovery and production of oil or gas on said land, Lessee should drill a dry hole or holes thereon, or if during the primary term hereof and after the discovery and actual production of oil or gas from the leased premises such production thereof should cease from any cause, this lease shall not terminate if on or before the expiration of sixty (60) days from date of completion of said dry hole or cessation of production Lessee commences additional drilling or reworking operations thereon, or pays or tenders the next annual delay rental in the same manner as provided in this lease. If, during the last year of the primary term or within sixty (60) days prior thereto, a dry hole be completed and abandoned, or the production of oil or gas should cease for any cause, Lessee's rights shall remain in full force and effect without further operations until the expiration of the primary term; and if Lessee has not resumed production in paying quantities at the expiration of the primary term, Lessee may maintain this lease by conducting additional drilling or reworking



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operations pursuant to Paragraph 13, using the expiration of the primary term as the date of cessation of production under Paragraph 13. Should the first well or any subsequent well drilled on the above described land be completed as a shut-in oil or gas well within the primary term hereof, Lessee may resume payment of the annual rental in the same manner as provided herein on or before the rental paying date following the expiration of sixty (60) days from the date of completion of such shut-in oil or gas well and upon the failure to make such payment, this lease shall ipso facto terminate. If at the expiration of the primary term or any time thereafter a shut-in oil or gas well is located on the leased premises, payments may be made in accordance with the shut-in provisions hereof.

12. DRILLING AND REWORKING AT EXPIRATION OF PRIMARY TERM. If, at the expiration of the primary term, neither oil nor gas is being produced on said land, but Lessee is then engaged in drilling or reworking operations thereon, this lease shall remain in force so long as operations on said well or for drilling or reworking of any additional wells are prosecuted in good faith and in workmanlike manner without interruptions totaling more than sixty (60) days during any one such operation, and if they result in the production of oil and/or gas, so long thereafter as oil and/or gas is produced in paying quantities from said land, or payment of shut-in oil or gas well royalties or compensatory royalties is made as provided in this lease.

13. CESSATION, DRILLING, AND REWORKING. If, after the expiration of the primary term, production of oil or gas from the leased premises, after once obtained, should cease from any cause, this lease shall not terminate if Lessee commences additional drilling or reworking operations within sixty (60) days after such cessation, and this lease shall remain in full force and effect for so long as such operations continue in good faith and in workmanlike manner without interruptions totaling more than sixty (60) days. If such drilling or reworking operations result in the production of oil or gas, the lease shall remain in full force and effect for so long as oil or gas is produced from the leased premises in paying quantities or payment of shut-in oil or gas well royalties or payment of compensatory royalties is made as provided herein or as provided by law. If the drilling or reworking operations result in the completion of a well as a dry hole, the lease will not terminate if the Lessee commences additional drilling or reworking operations within sixty (60) days after the completion of the well as a dry hole, and this lease shall remain in effect so long as Lessee continues drilling or reworking operations in good faith and in a workmanlike manner without interruptions totaling more than sixty (60) days. Lessee shall give written notice to the General Land Office within thirty (30) days of any cessation of production.

14. SHUT-IN ROYALTIES. For purposes of this paragraph, "well" means any well that has been assigned a well number by the state agency having jurisdiction over the production of oil and gas. If, at any time after the expiration of the primary term of a lease that, until being shut in, was being maintained in force and effect, a well capable of producing oil or gas in paying quantities is located on the leased premises, but oil or gas is not being produced for lack of suitable production facilities or lack of a suitable market, then Lessee may pay as a shut-in oil or gas royalty an amount equal to double the annual rental provided in the lease, but not less than \$1,200 a year for each well capable of producing oil or gas in paying quantities. If Paragraph 3 of this lease does not specify a delay rental amount, then for the purposes of this paragraph, the delay rental amount shall be one dollar (\$1.00) per acre. To be effective, each initial shut-in oil or gas royalty must be paid on or before: (1) the expiration of the primary term, (2) 60 days after the Lessee ceases to produce oil or gas from the leased premises, or (3) 60 days after Lessee completes a drilling or reworking operation in accordance with the lease provisions; whichever date is latest. Such payment shall be made one-half (1/2) to the Commissioner of the General Land Office and one-half (1/2) to the owner of the soil. If the shut-in oil or gas royalty is paid, the lease shall be considered to be a producing lease and the payment shall extend the term of the lease for a period of one year from the end of the primary term, or from the first day of the month following the month in which production ceased, and, after that, if no suitable production facilities or suitable market for the oil or gas exists, Lessee may extend the lease for four more successive periods of one (1) year by paying the same amount each year on or before the expiration of each shut-in year.

15. COMPENSATORY ROYALTIES. If, during the period the lease is kept in effect by payment of the shut-in oil or gas royalty, oil or gas is sold and delivered in paying quantities from a well located within one thousand (1,000) feet of the leased premises and completed in the same producing reservoir, or in any case in which drainage is occurring, the right to continue to maintain the lease by paying the shut-in oil or gas royalty shall cease, but the lease shall remain effective for the remainder of the year for which the royalty has been paid. The Lessee may maintain the lease for four more successive years by Lessee paying compensatory royalty at the royalty rate provided in the lease of the market value of production from the well causing the drainage or which is completed in the same producing reservoir and within one thousand (1,000) feet of the leased premises. The compensatory royalty is to be paid monthly, one-half (1/2) to the Commissioner of the General Land Office and one-half (1/2) to the owner of the soil, beginning on or before the last day of the month following the month in which the oil or gas is produced from the well causing the drainage or that is completed in the same producing reservoir and located within one thousand (1,000) feet of the leased premises. If the compensatory royalty paid in any 12-month period is an amount less than the annual shut-in oil or gas royalty, Lessee shall pay an amount equal to the difference within thirty (30) days from the end of the 12-month period. Compensatory royalty payments which are not timely paid will accrue penalty and interest in accordance with Paragraph 9 of this lease. None of these provisions will relieve Lessee of the obligation of reasonable development nor the obligation to drill offset wells as provided in Texas Natural Resources Code 52.173; however, at the determination of the Commissioner, and with the Commissioner's written approval, the payment of compensatory royalties can satisfy the obligation to drill offset wells.

16. RETAINED ACREAGE. Notwithstanding any provision of this lease to the contrary, after a well producing or capable of producing oil or gas has been completed on the leased premises, Lessee shall exercise the diligence of a reasonably prudent operator in drilling such additional well or wells as may be reasonably necessary for the proper development of the leased premises and in marketing the production thereon.

(A) VERTICAL. In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall then terminate as to all of the leased premises, EXCEPT (1) 40 acres surrounding each oil well capable of producing in paying quantities and 320 acres surrounding each gas well capable of producing in paying quantities (including a shut-in oil or gas well as provided in Paragraph 14 hereof), or a well upon which Lessee is then engaged in continuous drilling or reworking operations, or (2) the number of acres included in a producing pooled unit pursuant to Texas Natural Resources Code 52.151-52.154, or (3) such greater or lesser number of acres as may then be allocated for production purposes to a proration unit for each such producing well under the rules and regulations of the Railroad Commission of Texas, or any successor agency, or other governmental authority having jurisdiction. If at any time after the effective date of the partial termination provisions hereof, the applicable field rules are changed or the well or wells located thereon are reclassified so that less acreage is thereafter allocated to said well or wells for production purposes, this lease shall thereupon terminate as to all acreage not thereafter allocated to said well or wells for production purposes. Notwithstanding the termination of this lease as to a portion of the lands covered hereby, Lessee shall nevertheless continue to have the right of ingress to and egress from the lands still subject to this lease for all purposes described in Paragraph 1 hereof, together with easements and rights-of-way for existing roads, existing pipelines and other existing facilities on, over and across all the lands described in Paragraph 1 hereof ("the retained lands"), for access to and from the retained lands and for the gathering or transportation of oil, gas and other minerals produced from the retained lands.



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(B) **HORIZONTAL.** In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall further terminate as to all depths below 100 feet below the total depth drilled (hereinafter "deeper depths") in each well located on acreage retained in Paragraph 16 (A) above, unless on or before two (2) years after the primary or extended term Lessee pays an amount equal to one-half (1/2) of the bonus originally paid as consideration for this lease (as specified on page 1 hereof). If such amount is paid, this lease shall be in force and effect as to such deeper depths, and said termination shall be delayed for an additional period of two (2) years and so long thereafter as oil or gas is produced in paying quantities from such deeper depths covered by this lease.

(C) **IDENTIFICATION AND FILING.** The surface acreage retained hereunder as to each well shall, as nearly as practical, be in the form of a square with the well located in the center thereof, or such other shape as may be approved by the Commissioner of the General Land Office. Within thirty (30) days after partial termination of this lease as provided herein, Lessee shall execute and record a release or releases containing a satisfactory legal description of the acreage and/or depths not retained hereunder. The recorded release, or a certified copy of same, shall be filed in the General Land Office, accompanied by the filing fee prescribed by the General Land Office rules in effect on the date the release is filed. If Lessee fails or refuses to execute and record such release or releases within ninety (90) days after being requested to do so by the General Land Office, then the Commissioner at his sole discretion may designate by written instrument the acreage and/or depths to be released hereunder and record such instrument at Lessee's expense in the county or counties where the lease is located and in the official records of the General Land Office and such designation shall be binding upon Lessee for all purposes.

17. **OFFSET WELLS.** Neither the bonus, delay rentals, nor royalties paid, or to be paid, under this lease shall relieve Lessee of his obligation to protect the oil and gas under the above-described land from being drained. Lessee, sublessee, receiver or other agent in control of the leased premises shall drill as many wells as the facts may justify and shall use appropriate means and drill to a depth necessary to prevent undue drainage of oil and gas from the leased premises. In addition, if oil and/or gas should be produced in commercial quantities within 1,000 feet of the leased premises, or in any case where the leased premises is being drained by production of oil or gas, the Lessee, sublessee, receiver or other agent in control of the leased premises shall in good faith begin the drilling of a well or wells upon the leased premises within 100 days after the draining well or wells or the well or wells completed within 1,000 feet of the leased premises start producing in commercial quantities and shall prosecute such drilling with diligence. Failure to satisfy the statutory offset obligation may subject this lease and the owner of the soil's agency rights to forfeiture. Only upon the determination of the Commissioner of the General Land Office and with his written approval may the payment of compensatory royalty under applicable statutory parameters satisfy the obligation to drill an offset well or wells required under this paragraph.

18. **FORCE MAJEURE.** If, after a good faith effort, Lessee is prevented from complying with any express or implied covenant of this lease, from conducting drilling operations on the leased premises, or from producing oil or gas from the leased premises by reason of war, rebellion, riots, strikes, acts of God, or any valid order, rule or regulation of government authority, then while so prevented, Lessee's obligation to comply with such covenant shall be suspended and Lessee shall not be liable for damages for failure to comply with such covenants; additionally, this lease shall be extended while Lessee is prevented, by any such cause, from conducting drilling and reworking operations or from producing oil or gas from the leased premises. However, nothing in this paragraph shall suspend the payment of delay rentals in order to maintain this lease in effect during the primary term in the absence of such drilling or reworking operations or production of oil or gas.

19. **WARRANTY CLAUSE.** The owner of the soil warrants and agrees to defend title to the leased premises. If the owner of the soil defaults in payments owed on the leased premises, then Lessee may redeem the rights of the owner of the soil in the leased premises by paying any mortgage, taxes or other liens on the leased premises. If Lessee makes payments on behalf of the owner of the soil under this paragraph, Lessee may recover the cost of these payments from the rental and royalties due the owner of the soil.

20. (A) **PROPORTIONATE REDUCTION CLAUSE.** If the owner of the soil owns less than the entire undivided surface estate in the above described land, whether or not Lessee's interest is specified herein, then the royalties and rental herein provided to be paid to the owner of the soil shall be paid to him in the proportion which his interest bears to the entire undivided surface estate and the royalties and rental herein provided to be paid to the Commissioner of the General Land Office of the State of Texas shall be likewise proportionately reduced. However, before Lessee adjusts the royalty or rental due to the Commissioner of the General Land Office, Lessee or his authorized representative must submit to the Commissioner of the General Land Office a written statement which explains the discrepancy between the interest purportedly leased under this lease and the actual interest owned by the owner of the soil. The Commissioner of the General Land Office shall be paid the value of the whole production allocable to any undivided interest not covered by a lease, less the proportionate development and production cost allocable to such undivided interest. However, in no event shall the Commissioner of the General Land Office receive as a royalty on the gross production allocable to the undivided interest not leased an amount less than the value of one-sixteenth (1/16) of such gross production.

(B) **REDUCTION OF PAYMENTS.** If, during the primary term, a portion of the land covered by this lease is included within the boundaries of a pooled unit that has been approved by the School Land Board and the owner of the soil in accordance with Natural Resources Code Sections 52.151-52.154, or if, at any time after the expiration of the primary term or the extended term, this lease covers a lesser number of acres than the total amount described herein, payments that are made on a per acre basis hereunder shall be reduced according to the number of acres pooled, released, surrendered, or otherwise severed, so that payments determined on a per acre basis under the terms of this lease during the primary term shall be calculated based upon the number of acres outside the boundaries of a pooled unit, or, if after the expiration of the primary term, the number of acres actually retained and covered by this lease.

21. **USE OF WATER.** Lessee shall have the right to use water produced on said land necessary for operations under this lease except water from wells or tanks of the owner of the soil; provided, however, Lessee shall not use potable water or water suitable for livestock or irrigation purposes for waterflood operations without the prior consent of the owner of the soil.

22. **AUTHORIZED DAMAGES.** Lessee shall pay the owner of the soil for damages caused by its operations to all personal property, improvements, livestock and crops on said land.

23. **PIPELINE DEPTH.** When requested by the owner of the soil, Lessee shall bury its pipelines below plow depth.

24. **WELL LOCATION LIMIT.** No well shall be drilled nearer than two hundred (200) feet to any house or barn now on said premises without the written consent of the owner of the soil.



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25. POLLUTION. In developing this area, Lessee shall use the highest degree of care and all proper safeguards to prevent pollution. Without limiting the foregoing, pollution of coastal wetlands, natural waterways, rivers and impounded water shall be prevented by the use of containment facilities sufficient to prevent spillage, seepage or ground water contamination. In the event of pollution, Lessee shall use all means at its disposal to recapture all escaped hydrocarbons or other pollutant and shall be responsible for all damage to public and private properties. Lessee shall build and maintain fences around its slush, sump, and drainage pits and tank batteries so as to protect livestock against loss, damage or injury; and upon completion or abandonment of any well or wells, Lessee shall fill and level all slush pits and cellars and completely clean up the drilling site of all rubbish thereon. Lessee shall, while conducting operations on the leased premises, keep said premises free of all rubbish, cans, bottles, paper cups or garbage, and upon completion of operations shall restore the surface of the land to as near its original condition and contours as is practicable. Tanks and equipment will be kept painted and presentable.

26. REMOVAL OF EQUIPMENT. Subject to limitations in this paragraph, Lessee shall have the right to remove machinery and fixtures placed by Lessee on the leased premises, including the right to draw and remove casing, within one hundred twenty (120) days after the expiration or the termination of this lease unless the owner of the soil grants Lessee an extension of this 120-day period. However, Lessee may not remove casing from any well capable of producing oil and gas in paying quantities. Additionally, Lessee may not draw and remove casing until after thirty (30) days written notice to the Commissioner of the General Land Office and to the owner of the soil. The owner of the soil shall become the owner of any machinery, fixtures, or casing which are not timely removed by Lessee under the terms of this paragraph.

27. (A) ASSIGNMENTS. Under the conditions contained in this paragraph and Paragraph 29 of this lease, the rights and estates of either party to this lease may be assigned, in whole or in part, and the provisions of this lease shall extend to and be binding upon their heirs, devisees, legal representatives, successors and assigns. However, a change or division in ownership of the land, rentals, or royalties will not enlarge the obligations of Lessee, diminish the rights, privileges and estates of Lessee, impair the effectiveness of any payment made by Lessee or impair the effectiveness of any act performed by Lessee. And no change or division in ownership of the land, rentals, or royalties shall bind Lessee for any purpose until thirty (30) days after the owner of the soil (or his heirs, devisees, legal representatives or assigns) furnishes the Lessee with satisfactory written evidence of the change in ownership, including the original recorded muniments of title (or a certified copy of such original) when the ownership changed because of a conveyance. A total or partial assignment of this lease shall, to the extent of the interest assigned, relieve and discharge Lessee of all subsequent obligations under this lease. If this lease is assigned in its entirety as to only part of the acreage, the right and option to pay rentals shall be apportioned as between the several owners ratably, according to the area of each, and failure by one or more of them to pay his share of the rental shall not affect this lease on the part of the land upon which pro rata rentals are timely paid or tendered; however, if the assignor or assignee does not file a certified copy of such assignment in the General Land Office before the next rental paying date, the entire lease shall terminate for failure to pay the entire rental due under Paragraph 3. Every assignee shall succeed to all rights and be subject to all obligations, liabilities, and penalties owed to the State by the original lessee or any prior assignee of the lease, including any liabilities to the State for unpaid royalties.

(B) ASSIGNMENT LIMITATION. Notwithstanding any provision in Paragraph 27(a), if the owner of the soil acquires this lease in whole or in part by assignment without the prior written approval of the Commissioner of the General Land Office, this lease is void as of the time of assignment and the agency power of the owner may be forfeited by the Commissioner. An assignment will be treated as if it were made to the owner of the soil if the assignee is:

- (1) a nominee of the owner of the soil;
- (2) a corporation or subsidiary in which the owner of the soil is a principal stockholder or is an employee of such a corporation or subsidiary;
- (3) a partnership in which the owner of the soil is a partner or is an employee of such a partnership;
- (4) a principal stockholder or employee of the corporation which is the owner of the soil;
- (5) a partner or employee in a partnership which is the owner of the soil;
- (6) a fiduciary for the owner of the soil; including but not limited to a guardian, trustee, executor, administrator, receiver, or conservator for the owner of the soil; or
- (7) a family member of the owner of the soil or related to the owner of the soil by marriage, blood, or adoption.

28. RELEASES. Under the conditions contained in this paragraph and Paragraph 29, Lessee may at any time execute and deliver to the owner of the soil and place of record a release or releases covering any portion or portions of the leased premises, and thereby surrender this lease as to such portion or portions, and be relieved of all subsequent obligations as to acreage surrendered. If any part of this lease is properly surrendered, the delay rental due under this lease shall be reduced by the proportion that the surrendered acreage bears to the acreage which was covered by this lease immediately prior to such surrender; however, such release will not relieve Lessee of any liabilities which may have accrued under this lease prior to the surrender of such acreage.

29. FILING OF ASSIGNMENTS AND RELEASES. If all or any part of this lease is assigned or released, such assignment or release must be recorded in the county where the land is situated, and the recorded instrument, or a copy of the recorded instrument certified by the County Clerk of the county in which the instrument is recorded, must be filed in the General Land Office within 90 days of the last execution date accompanied by the prescribed filing fee. If any such assignment is not so filed, the rights acquired under this lease shall be subject to forfeiture at the option of the Commissioner of the General Land Office.

30. DISCLOSURE CLAUSE. All provisions pertaining to the lease of the above-described land have been included in this instrument, including the statement of the true consideration to be paid for the execution of this lease and the rights and duties of the parties. Any collateral agreements concerning the development of oil and gas from the leased premises which are not contained in this lease render this lease invalid.

31. FIDUCIARY DUTY. The owner of the soil owes the State a fiduciary duty and must fully disclose any facts affecting the State's interest in the leased premises. When the interests of the owner of the soil conflict with those of the State, the owner of the soil is obligated to put the State's interests before his personal interests.

32. FORFEITURE. If Lessee shall fail or refuse to make the payment of any sum within thirty days after it becomes due, or if Lessee or an authorized agent should knowingly make any false return or false report concerning production or drilling, or if Lessee shall fail or refuse to drill any offset well or wells in good faith as required by law and the rules and regulations adopted by the Commissioner of the General Land Office, or if Lessee should fail to file reports in the manner required by law or fail to comply with rules and regulations promulgated by the General Land Office, the School Land Board, or the Railroad Commission, or if Lessee should refuse the proper authority access to the records pertaining to operations, or if Lessee or an authorized agent should knowingly fail or refuse to give correct information to the proper authority, or knowingly fail or refuse to furnish the General Land Office a correct log of any well, or if Lessee shall knowingly violate any of the material provisions of this lease, or if this lease is assigned and the assignment is not filed in the General Land Office as required by law, the rights acquired under this lease shall be subject to forfeiture by the



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Commissioner, and he shall forfeit same when sufficiently informed of the facts which authorize a forfeiture, and when forfeited the area shall again be subject to lease under the terms of the Relinquishment Act. However, nothing herein shall be construed as waiving the automatic termination of this lease by operation of law or by reason of any special limitation arising hereunder. Forfeitures may be set aside and this lease and all rights thereunder reinstated before the rights of another intervene upon satisfactory evidence to the Commissioner of the General Land Office of future compliance with the provisions of the law and of this lease and the rules and regulations that may be adopted relative hereto.

33. LIEN. In accordance with Texas Natural Resources Code 52.136, the State shall have a first lien upon all oil and gas produced from the area covered by this lease to secure payment of all unpaid royalty and other sums of money that may become due under this lease. By acceptance of this lease, Lessee grants the State, in addition to the lien provided by Texas Natural Resources Code 52.136 and any other applicable statutory lien, an express contractual lien on and security interest in all leased minerals in and extracted from the leased premises, all proceeds which may accrue to Lessee from the sale of such leased minerals, whether such proceeds are held by Lessee or by a third party, and all fixtures on and improvements to the leased premises used in connection with the production or processing of such leased minerals in order to secure the payment of all royalties or other amounts due or to become due under this lease and to secure payment of any damages or loss that Lessor may suffer by reason of Lessee's breach of any covenant or condition of this lease, whether express or implied. This lien and security interest may be foreclosed with or without court proceedings in the manner provided in the Title 1, Chap. 9 of the Texas Business and Commerce Code. Lessee agrees that the Commissioner may require Lessee to execute and record such instruments as may be reasonably necessary to acknowledge, attach or perfect this lien. Lessee hereby represents that there are no prior or superior liens arising from and relating to Lessee's activities upon the above-described property or from Lessee's acquisition of this lease. Should the Commissioner at any time determine that this representation is not true, then the Commissioner may declare this lease forfeited as provided herein.

34. POOLING. Lessee is hereby granted the right to pool or unitize the royalty interest of the owner of the soil under this lease with any other leasehold or mineral interest for the exploration, development and production of oil or gas or either of them upon the same terms as shall be approved by the School Land Board and the Commissioner of the General Land Office for the pooling or unitizing of the interest of the State under this lease pursuant to Texas Natural Resources Code 52.151-52.154. The owner of the soil agrees that the inclusion of this provision in this lease satisfies the execution requirements stated in Texas Natural Resources Code 52.152.

35. INDEMNITY. Lessee hereby releases and discharges the State of Texas and the owner of the soil, their officers, employees, partners, agents, contractors, subcontractors, guests, invitees, and their respective successors and assigns, of and from all and any actions and causes of action of every nature, or other harm, including environmental harm, for which recovery of damages is sought, including, but not limited to, all losses and expenses which are caused by the activities of Lessee, its officers, employees, and agents arising out of, incidental to, or resulting from, the operations of or for Lessee on the leased premises hereunder, or that may arise out of or be occasioned by Lessee's breach of any of the terms or provisions of this Agreement, or by any other negligent or strictly liable act or omission of Lessee. Further, Lessee hereby agrees to be liable for, exonerate, indemnify, defend and hold harmless the State of Texas and the owner of the soil, their officers, employees and agents, their successors or assigns, against any and all claims, liabilities, losses, damages, actions, personal injury (including death), costs and expenses, or other harm for which recovery of damages is sought, under any theory including tort, contract, or strict liability, including attorneys' fees and other legal expenses, including those related to environmental hazards, on the leased premises or in any way related to Lessee's failure to comply with any and all environmental laws; those arising from or in any way related to Lessee's operations or any other of Lessee's activities on the leased premises; those arising from Lessee's use of the surface of the leased premises; and those that may arise out of or be occasioned by Lessee's breach of any of the terms or provisions of this Agreement or any other act or omission of Lessee, its directors, officers, employees, partners, agents, contractors, subcontractors, guests, invitees, and their respective successors and assigns. Each assignee of this Agreement, or an interest therein, agrees to be liable for, exonerate, indemnify, defend and hold harmless the State of Texas and the owner of the soil, their officers, employees, and agents in the same manner provided above in connection with the activities of Lessee, its officers, employees, and agents as described above. **EXCEPT AS OTHERWISE EXPRESSLY LIMITED HEREIN, ALL OF THE INDEMNITY OBLIGATIONS AND/OR LIABILITIES ASSUMED UNDER THE TERMS OF THIS AGREEMENT SHALL BE WITHOUT LIMITS AND WITHOUT REGARD TO THE CAUSE OR CAUSES THEREOF (EXCLUDING PRE-EXISTING CONDITIONS), STRICT LIABILITY, OR THE NEGLIGENCE OF ANY PARTY OR PARTIES (INCLUDING THE NEGLIGENCE OF THE INDEMNIFIED PARTY), WHETHER SUCH NEGLIGENCE BE SOLE, JOINT, CONCURRENT, ACTIVE, OR PASSIVE.**

36. ENVIRONMENTAL HAZARDS. Lessee shall use the highest degree of care and all reasonable safeguards to prevent contamination or pollution of any environmental medium, including soil, surface waters, groundwater, sediments, and surface or subsurface strata, ambient air or any other environmental medium in, on, or under, the leased premises, by any waste, pollutant, or contaminant. Lessee shall not bring or permit to remain on the leased premises any asbestos containing materials, explosives, toxic materials, or substances regulated as hazardous wastes, hazardous materials, hazardous substances (as the term "Hazardous Substance" is defined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Sections 9601, et seq.), or toxic substances under any federal, state, or local law or regulation ("Hazardous Materials"), except ordinary products commonly used in connection with oil and gas exploration and development operations and stored in the usual manner and quantities. **LESSEE'S VIOLATION OF THE FOREGOING PROHIBITION SHALL CONSTITUTE A MATERIAL BREACH AND DEFAULT HEREUNDER AND LESSEE SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE STATE OF TEXAS AND THE OWNER OF THE SOIL FROM AND AGAINST ANY CLAIMS, DAMAGES, JUDGMENTS, PENALTIES, LIABILITIES, AND COSTS (INCLUDING REASONABLE ATTORNEYS' FEES AND COURT COSTS) CAUSED BY OR ARISING OUT OF (1) A VIOLATION OF THE FOREGOING PROHIBITION OR (2) THE PRESENCE, RELEASE, OR DISPOSAL OF ANY HAZARDOUS MATERIALS ON, UNDER, OR ABOUT THE LEASED PREMISES DURING LESSEE'S OCCUPANCY OR CONTROL OF THE LEASED PREMISES. LESSEE SHALL CLEAN UP, REMOVE, REMEDY AND REPAIR ANY SOIL OR GROUND WATER CONTAMINATION AND DAMAGE CAUSED BY THE PRESENCE OR RELEASE OF ANY HAZARDOUS MATERIALS IN, ON, UNDER, OR ABOUT THE LEASED PREMISES DURING LESSEE'S OCCUPANCY OF THE LEASED PREMISES IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE LAW. THIS INDEMNIFICATION AND ASSUMPTION SHALL APPLY, BUT IS NOT LIMITED TO, LIABILITY FOR RESPONSE ACTIONS UNDERTAKEN PURSUANT TO CERCLA OR ANY OTHER ENVIRONMENTAL LAW OR REGULATION. LESSEE SHALL IMMEDIATELY GIVE THE STATE OF TEXAS AND THE OWNER OF THE SOIL WRITTEN NOTICE OF ANY BREACH OR SUSPECTED BREACH OF THIS PARAGRAPH, UPON LEARNING OF THE PRESENCE OF ANY HAZARDOUS MATERIALS, OR UPON RECEIVING A NOTICE FROM ANY GOVERNMENTAL AGENCY PERTAINING TO HAZARDOUS MATERIALS WHICH MAY AFFECT THE LEASED PREMISES. THE OBLIGATIONS OF LESSEE HEREUNDER SHALL SURVIVE THE EXPIRATION OR EARLIER TERMINATION, FOR ANY REASON, OF THIS AGREEMENT.**

37. APPLICABLE LAW. This lease is issued under the provisions of Texas Natural Resources Code 52.171 through 52.190, commonly known as the Relinquishment Act, and other applicable statutes and amendments thereto, and if any provision in this lease does not conform to these statutes, the statutes will prevail over any nonconforming lease provisions.



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38. EXECUTION. This oil and gas lease must be signed and acknowledged by the Lessee before it is filed of record in the county records and in the General Land Office of the State of Texas. Once the filing requirements found in Paragraph 39 of this lease have been satisfied, the effective date of this lease shall be the date found on Page 1.

39. LEASE FILING. Pursuant to Chapter 9 of the Texas Business and Commerce Code, this lease must be filed of record in the office of the County Clerk in any county in which all or any part of the leased premises is located, and certified copies thereof must be filed in the General Land Office. This lease is not effective until a certified copy of this lease (which is made and certified by the County Clerk from his records) is filed in the General Land Office in accordance with Texas Natural Resources Code 52.183. Additionally, this lease shall not be binding upon the State unless it recites the actual and true consideration paid or promised for execution of this lease. The bonus due the State and the prescribed filing fee shall accompany such certified copy to the General Land Office.

LESSEE

Cimarex Energy Co.

[Signature]
By: Roger Alexander
Title: Attorney-in-Fact for Cimarex Energy Co.

Date: _____

STATE OF TEXAS

BY: *[Signature]*
Michael Anderson Harrison, a married man
dealing in his sole and separate property

Individually and as agent for the State of Texas

Date: _____

STATE OF TEXAS

BY: *[Signature]*
William Henry Oliver Harrison, Jr., a married
man dealing in his sole and separate property

Date: _____

STATE OF TEXAS

BY: *[Signature]*
Kathryn Nell Harrison, a single woman dealing
in her sole and separate property

Date: *[Signature]*

STATE OF TEXAS

BY: _____
Individually and as agent for the State of Texas

Date: _____



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Clerks Office

11211

STATE OF Texas
COUNTY OF Midland

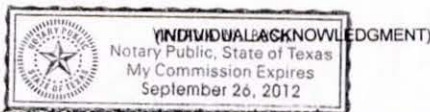
(CORPORATION ACKNOWLEDGMENT)

BEFORE ME, the undersigned authority, on this day personally appeared Roger Alexander
known to me to be the person whose name is subscribed to the foregoing instruments as Attorney-in-Fact
of Cimarex Energy Co. and acknowledged to me that he
executed the same for the purposes and consideration therein expressed, in the capacity stated, and as the act and deed of said corporation.

Given under my hand and seal of office this the 1st day of September, 20 11.

Notary Public in and for Viviana M. Bush

STATE OF Texas
COUNTY OF Brewer



This instrument was acknowledged by Michael Anderson Harrison, a married man dealing in his sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.

Given under my hand and seal of office this the 25th day of August, 20 10.

Notary Public in and for Jessie H. Long

STATE OF Texas
COUNTY OF Brewer

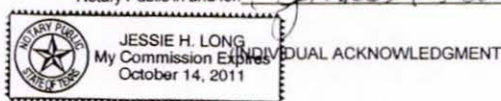


This instrument was acknowledged by William Henry Oliver Harrison, Jr., a married man dealing in his sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.

Given under my hand and seal of office this the 25th day of August, 20 10.

Notary Public in and for Jessie H. Long

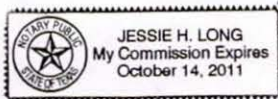
STATE OF Texas
COUNTY OF Brewer



This instrument was acknowledged by Kathryn Nell Harrison, a single woman dealing in her sole and separate property
known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes
and consideration therein expressed.

Given under my hand and seal of office this the 25th day of August, 20 10.

Notary Public in and for Jessie H. Long



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Clerks Office

EXHIBIT "A"

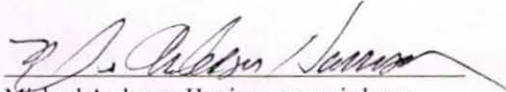
Paragraph 3 and 16(B) in the printed Form Lease are deleted in their entirety and replaced with the following:

PAID UP RENTALS

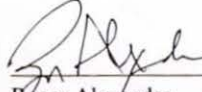
3. Rentals for years two and three of this lease have been prepaid as part of the total lease bonus consideration for the first three years of this lease. One half (1/2) of this amount has been paid to the Lessor and one half (1/2) has been paid to the State of Texas. Rental for the fourth year in the amount of \$431,298.00 has not been paid and if the fourth year rental is not paid then this lease will expire. One half (1/2) of the fourth year rental will be paid to the Lessor and one half (1/2) will be paid to the State of Texas. Rental for the fifth year is included in the fourth year rental and if the fourth year rental is paid then no additional rentals are due under this lease.

HORIZONTAL

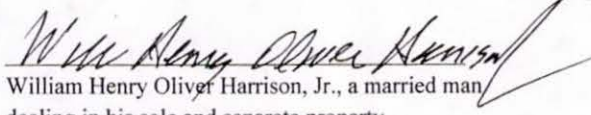
16. (B) HORIZONTAL. In the event this lease is in force and effect two (2) years after the expiration date of the primary or extended term it shall further terminate as to all depths in each well located on acreage retained in Paragraph 16 (A) above, EXCEPT depths from 100' above and 100' below each zone and/or formation producing in paying quantities. Notwithstanding the foregoing, if there is more than one separate and identifiable zone and/or formation that is producing in paying quantities and Lessee desires to produce each of these zones and/or formations, Lessee shall provide Lessors with a written communication identifying in detail each separate and identifiable zone and/or formation that is producing in paying quantities and this lease shall then remain in force and effect as to depths from 100' above and 100' below each separate producing zone and/or formation identified by Lessee so long as oil or gas is produced in paying quantities.



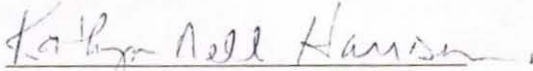
Michael Anderson Harrison, a married man
dealing in his sole and separate property



Roger Alexander
Attorney-In-Fact
Cimarex Energy Co.



William Henry Oliver Harrison, Jr., a married man
dealing in his sole and separate property

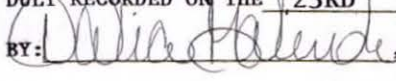


Kathryn Nell Harrison, a single woman dealing in
her sole and separate property

FILE # 4819

FILED FOR RECORD ON THE 17TH DAY OF DECEMBER A.D. 2010 4:20 P.M.

DULY RECORDED ON THE 23RD DAY OF DECEMBER A.D. 2010 9:00 A.M.

BY:  DEPUTY

DIANNE O. FLOREZ, COUNTY CLERK
REEVES COUNTY, TEXAS

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL,
OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR
OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL
LAW



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copy of
Original filed in
Reeves County
Clerks Office

2

11311

File No. 111989

Lease

Date Filed: 12/29/11 4/12/11

Jerry E. Patterson, Commissioner

By GH

**CERTIFIED TRUE AND CORRECT COPY CERTIFICATE
STATE OF TEXAS
COUNTY OF REEVES**

The above and foregoing is a full, true and correct photographic copy of the original record now in my lawful custody and possession, as the same is filed/recorded in the public records of my office, found in VOL 860
PAGE 766 THRU 775

**OFFICIAL PUBLIC
RECORDS**

I hereby certified on 12/30/2010



DIANNE O. FLOREZ, COUNTY CLERK
REEVES COUNTY, TEXAS

BY Dalia Galindo DEPUTY

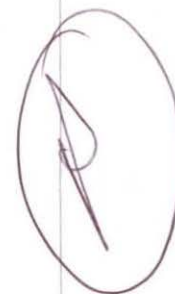


CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

Check Number 0001333306

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
REQ08242010	08/24/2010		416,549.00	0.00	416,549.00
MF111989 215,649.00 MF111990 200,900.00 <u>416,549.00</u>					

11704489



023492

← Vendor

Check Date: 09/02/2010

Check Amount →

416,549.00

CIMAREX ENERGY CO
 1700 LINCOLN STREET
 SUITE 1800
 DENVER CO 80203-4518
 (303) 295-3995



Check Number **0001331215**

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
REQ21708042010	08/04/2010		50.00	0.00	50.00
11704488 121					



CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

Check Number 0001338364

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
REQ217091510H	09/15/2010		100.00	0.00	100.00
11701276					
					

023492

← Vendor

Check Date: 09/30/2010

Check Amount →

101
X 100.00

Cimarex Energy Co.

600 N. Marienfeld St.

Suite 600

Midland, Texas 79701

PHONE 432.571.7800



January 10, 2011

Mineral Leasing Division
Texas General Land Office
Attn: Drew Reid
P.O. Box 12873
Austin, TX 78701-1495

Certified mail #91 7108 2133 3938 4681 5598

**RE: Mineral Classified Leases
Section 12, A-3597, Block C-20, PSL Survey
& Section 24, SAE SE/4NE/4NE/4 & the NE/4NW/4NW/4, A-3491,
Block 2, H&GN RR Co Survey
Reeves County, TX**

Dear Mr. Reid,

Please find enclosed two (2) certified copies of the Oil and Gas Leases filed of record in Reeves County, Texas covering the above captioned lands, along with a check representing the bonus consideration for said leases. Specifically, please find the following certified copies of the leases and corresponding check as follows:

Lessor: Michael Anderson Harrison, a married man dealing in his sole and separate property;
William Henry Oliver Harrison, Jr., a married man dealing in his sole and separate property;
Kathryn Nell Harrison, a single woman dealing in her sole and separate property
Recorded: Section 12 - Volume 860, Page 766
Section 24 - Volume 860, Page 776
Check Number 0001333306 - \$416,549.00 (bonus consideration)

Additionally, please find enclosed a \$50.00 check to cover the filing fee for both of the above lease.

Please respond with written verification of receipt of the above check, along with written verification of receipt and acceptance of the above recorded lease. If I can be of further assistance, please contact me at the number below.

Sincerely,

A handwritten signature in dark ink that reads "Tish Maney". The signature is written in a cursive, flowing style.

Tish Maney
(432) 571-7892

New (2)

Cimarex Energy Co.
600 N. Mariefeld St.
Suite 600
Midland, Texas 79701
PHONE 432.571.7800



August 16, 2010

Mineral Leasing Division
Texas General Land Office
Attn: Drew Reid
P.O. Box 12873
Austin, TX 78701-1495

RE: Mineral Classified Leases
Lease 1: All of Section 12, Blk C-20, PSLs
Lease 2: All of Section 24, Blk 2, H&GN (SAE the SE/4NE/4NE/4 and
NE/4NW/4NW/4)
Reeves County, TX

Dear Mr. Reid,

Michael Anderson Harrison, et. al., acting as agent for the State of Texas, as Lessor, and Cimarex Energy Co., as Lessee, ("The Parties") have reached an agreement to lease the above-captioned lands in Reeves County, TX. Each section will be included on a separate lease form. The agreed upon terms for each lease are as follows:

Primary Term:	five (5) years
Royalty:	one-fourth (1/4)
Bonus Consideration:	\$700.00 / net acre
Rentals:	Years 1-3 are paid up. A one-time payment of \$700/net acre is required for years 4 and 5

Michael Anderson Harrison, et. al. is the "Owner of the Soil" for an undivided 100% interest in each of the above-captioned lands.

An addendum to the lease form has been attached to the lease and is enclosed for your review. Additionally, a check in the amount of \$200.00 has been included to cover the processing fee for both leases.

If the lease meets with the approval of the State of Texas, please notify me at the letterhead address or via email at tmeador@cimarex.com, and I will send the originals to be recorded in Reeves County. A certified copy of the recorded leases will be provided to the State when available, along with the bonus consideration.

If I can be of further assistance, please contact me at the number below.

Sincerely,

Todd Meador
Landman
(432) 571-7858

File No. 111989

Date Filed: 12/9/11

Jerry E. Patterson, Commissioner

By Glf

TEXAS



GENERAL LAND OFFICE

JERRY PATTERSON, COMMISSIONER

December 6, 2011

Todd Meador
Cimarex Energy Co
600 N Marienfeld St, Suite 600
Midland, TX 79701

Re: **State Lease MF 111989**

RAL lease dated July 1, 2010 recorded in Bk 860, Pg 776
Covering SAE SE/4NE/4NE/4 & NE/4NW/4NW/4 Sec. 24, Blk
2, A-3491, H&GN RR Co. Survey, Reeves, 616.14 ac., Michael
Anderson Harrison, et al, agents for State of TX, Lessors

Dear Mr. Meador:

The certified copies of the Relinquishment Act leases covering the referenced tract have been approved and filed in our records under Mineral File Number 111989. **Please refer to these numbers when making payments to the State and in all future correspondence concerning the leases. Failure to include the mineral file numbers may delay processing of any payments towards the leases.**

There are several contractual and statutory responsibilities for the Lessee which are material provisions of the lease as outlined in the agreement such as Section 10(B) which requires submission of written notice for all drilling, production and related activities. When forms are filed with the Texas Railroad Commission, they are required to be submitted to the General Land Office as well. Examples are W-1, Application to Drill; W-2, Oil Well Completion Report and Log; G-1, Gas Well Completion Report and Log; W-3, Plugging Report; G-5, Gas Well Classification Report; G-10, Gas Well Status Report; W-10, Oil Well Status Report; W-12, Inclination Report; electric logs; directional surveys.

Chapter 52 of the Texas Natural Resources Codes specifies that the surface owner's right to receive a portion of the revenues generated by the lease shall be in lieu of all damages to the soil. Therefore, any payments made for surface use or damages other than the authorized damages set out in the lease form must be shared equally with the state.

The State's portion of the cash bonus of **\$215,649.00** has been paid out of your remittance of **\$416,549.00**. Your remittances of **\$100.00** and **\$25.00** have been applied to the processing fee and filing fee.

Sincerely yours,

Drew Reid
Mineral Leasing
Energy Resources
(512) 475-1534
drew.reid@glo.texas.gov

Stephen F. Austin Building • 1700 North Congress Avenue • Austin, Texas 78701-1495

Post Office Box 12873 • Austin, Texas 78711-2873

512-463-5001 • 800-998-4GLO

www.glo.state.tx.us

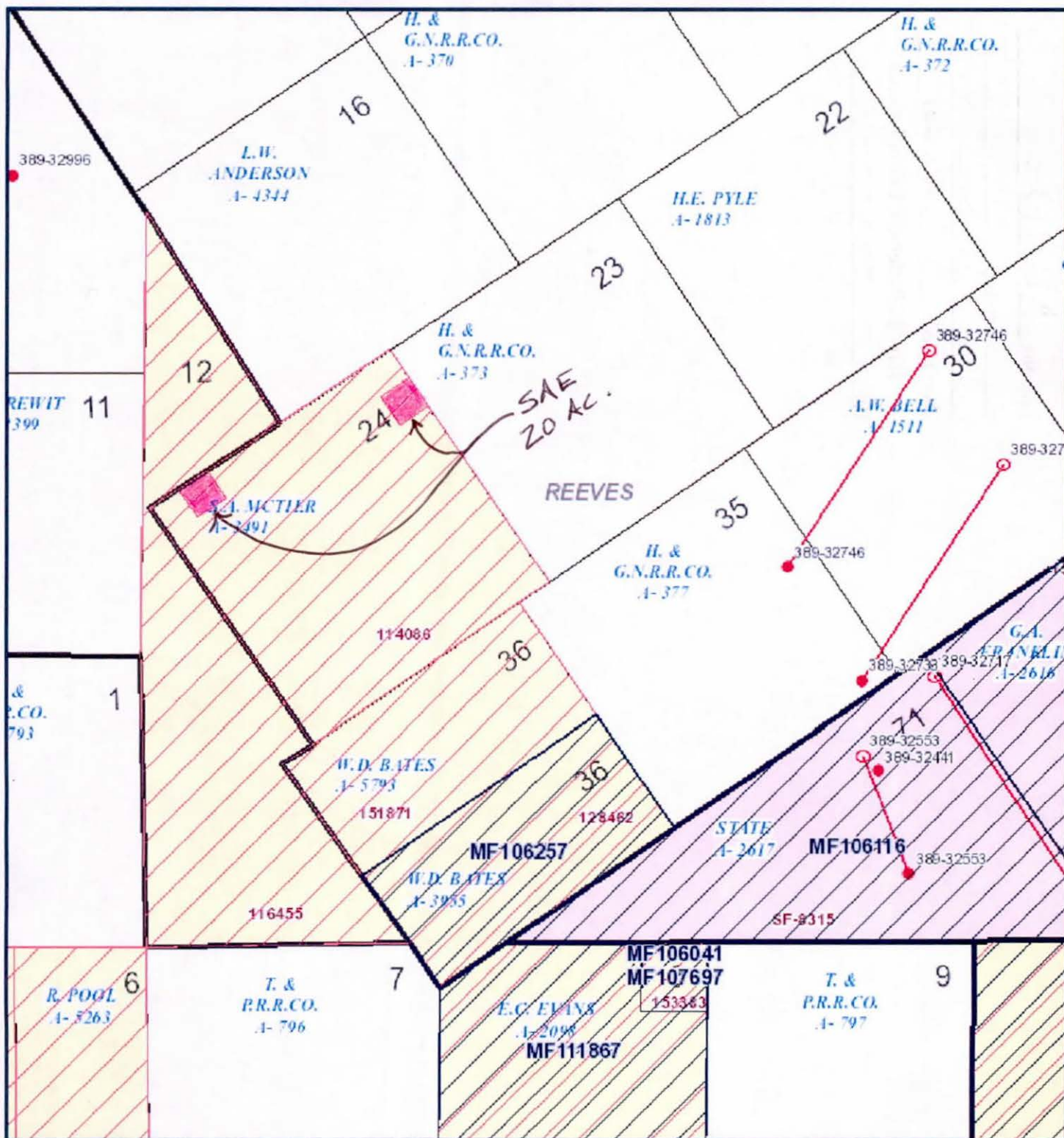
File No. 11989

Final Letter

Date Filed: ~~12/4/11~~ 12/6/11

Jerry E. Patterson, Commissioner

By GM



Texas General Land Office

My Map



The Texas General Land Office makes no representations or warranties regarding the accuracy or completeness of the information depicted on this map or the data from which it was produced. This map IS NOT suitable for navigational purposes and does not purport to depict or establish boundaries between private and public land.



Printed: Dec 12, 2011

(5)

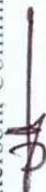
File No. M-111989

PLAT OF SAE

Date Filed: 12/12/2011

Jerry E. Patterson, Commissioner

By



CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

^PLEASE DETACH AT PERFORATION ABOVE^

CIMAREX

Check Number 0001497947

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
REQ21703042013T	03/04/2013	MF111989 (P)	215,649.00	0.00	215,649.00
				13708880	121

023492

Vendor

Check Date: 03/21/2013

Check Amount ➡ 215,649.00



CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

WELLS FARGO BANK NA

13708880

Present for payment within 180 days.

Vendor No.	Check No.	Check Date	Check Amount
023492	0001497947	03/21/2013	*****\$215,649.00

PAY Two Hundred Fifteen Thousand Six Hundred Forty Nine Dollars and Zero Cents

TO THE
ORDER
OF

STATE OF TEXAS
1700 N CONGRESS AVE STE 840
AUSTIN TX 78701-1495

Paul Korns
Sherril M. Nitta

SIGNATURE HAS A COLORED BACKGROUND • BORDER CONTAINS MICROPRINTING

PLEASE DETACH AT PERFORATION ABOVE

CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

PLEASE DETACH AT PERFORATION ABOVE



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13708880					
121					

023492 Vendor Check Date: 03/21/2013 Check Amount 215,649.00

Cimarex Energy Co.
600 N. Marienfeld St.
Suite 600
Midland, Texas 79701
PHONE 432.571.7800



State of Texas
Attn: Drew Reid
1700 N. Congress Ave, Suite 840
Austin, TX 78701-1495

Dear Mr. Reid,

Please find attached a check for \$215,649.00 exercising the rental payment for the 4th and 5th years on the current Mineral Classified Oil & Gas Lease. Your check represents 1/2 of the total rental paid (616.14 nma X \$700 = 431,298.00).

State Lease MF 111989

RAL lease dated July 1, 2010 recorded in Book 860, Page 776
Covering S&E SE/4NE/4NE/4 & NE/4NW/4NW/4 of Section 24, Block 2, A-3491,
H&GN RR Co. Survey, Reeves County, Texas, 616.14 acres
Michael Anderson Harrison, et al, agents for State of Texas, Lessors

Should you have any questions my e-mail address is, dfharris@cimarex.com.

Sincerely,

A handwritten signature in blue ink that reads "Debra". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Debra Harris
Petroleum Landman

Direct Line: 432-571-7871

File No. MF111989

⑥

Rental Payment

Date Filed: 04/03/2013

Jerry E. Patterson, Commissioner

By JP

CIMAREX ENERGY CO
1700 LINCOLN STREET
SUITE 1800
DENVER CO 80203-4518
(303) 295-3995

^PLEASE DETACH AT PERFORATION ABOVE^



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13708880

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Sherril M. Nitta

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Suite 600
Midland, Texas 79701
PHONE 432.571.7800



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H&GN RR Co. Survey, Reeves County, Texas, 616.14 acres
Michael Anderson Harrison, et al, agents for State of Texas, Lessors

Should you have any questions my e-mail address is, dfharris@cimarex.com.

Sincerely,

A handwritten signature in blue ink that reads "Debra".

Debra Harris
Petroleum Landman

Direct Line: 432-571-7871

File No. MF111989

⑥

Rental Payment

Date Filed: 04/03/2013

Jerry E. Patterson, Commissioner

By JP

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Cimarex Energy Co.
Attn: Rebecca Johnson
202 S. Cheyenne Ave Ste 1000
TULSA OK 74103-3001

2. Article Number

(Transfer from service label)

7011 1150 0001 2415 5590

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Justin Wallace
☐ Agent
☒ Addressee

B. Received by (Printed name)
JUSTIN WALLACE

C. Date of Delivery

- D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

MF 111985
Shirley

3. Service Type

- ☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

- Sender: Please print your name, address, and ZIP+4 in this box •



Texas General Land Office
George P. Bush, Commissioner
P.O. Box 12873
Austin, Texas 78711-2873

21510



Texas General Land Office

Reconciliation Billing

George P. Bush, Commissioner

PO Box 12873
Austin, TX 78711-2873
(800) 998-4456
8:00 - 5:00 M-F

COPY

Cimarex Energy Co.
Attn: Rebecca Johnson
202 S Cheyenne Ave Ste 1000
Tulsa, OK 74103-3001

Billing Date: 9/8/2015
Billing Due Date: 10/8/2015
Customer Number: C000044010

Invoice	Mineral File	Gas Royalty	Oil Royalty	Penalty	Interest	Total Due
16I00015	MF111989	\$0.00	\$857.52	\$158.83	\$27.28	\$1,043.63
Total Due		\$0.00	\$857.52	\$158.83	\$27.28	\$1,043.63

Penalty and interest have been calculated thru 9/30/2015. Payment remitted after 9/30/2015 will result in additional penalty and interest charges.

Contact Info: Shirley Chou (512) 463-5408 or shirley.chou@glo.texas.gov

NOTICE

- Please update GLO1 and GLO2 production reports to correct volumes.
- Please do not update GLO3 report to include billed royalty, penalty or interest. This receivable has already been recorded.
- For other royalty reporting questions, visit <http://www.glo.texas.gov>, call (512) 463-6850 or email us at glo123@glo.texas.gov.

This notice does not constitute an Audit Billing Notice as defined in Section 52.135 of the Texas Natural Resources Code and, consequently, does not preclude the TGLO from conducting further examinations of these leases, time periods or issues.

Detach and return with payment

Reconciliation Billing

Cimarex Energy Co.

Billing Date: 9/8/2015

Billing Due Date: 10/8/2015

Customer Number: C000044010

Remit Payment To:

Texas General Land Office

PO Box 12873

Austin, TX 78711-2873

Invoice	Mineral File	Gas Royalty	Oil Royalty	Penalty	Interest	Total Due
16I00015	MF111989	\$0.00	\$857.52	\$158.83	\$27.28	\$1,043.63
Total Due		\$0.00	\$857.52	\$158.83	\$27.28	\$1,043.63
Amt. Paid						

Customer ID: C000044010
 Invoice Number:
 GLO Lease: MF111989
 GLO Review: CIMAREX ENERGY CO
 Review Period: MAY 2014 THROUGH DEC 2014

Auditor/AE: schou
 Billing Date: 9/9/2015
 P&I Calculation Date: 9/30/2015
 Royalty Rate: 12.50%

Month / Year	RRC Number	(1) Oil Volume	(2) Tract Participation Rate	(3) Price	(4) Gross Value (1)X(2)x(3)	(5) Royalty Due (4) * Royalty Rate	(6) Royalty Paid	(7) Additional Royalty Due	(8) Number of Days Late	(9) Interest Rate For Additional Royalty	(10) Penalty From Additional Royalty	(11) Interest From Additional Royalty	Revenue Due (7)+(10)+(11)
Jun-14	08-45549	8.00	1	\$ 97.910000	\$783.28	\$97.91	\$0.00	\$97.91	421	4.250000%	\$25.00	\$4.13	\$127.04
Jul-14	08-45549	21.00	1	\$ 93.993430	\$1,973.86	\$246.73	\$0.00	\$246.73	390	4.250000%	\$25.00	\$9.51	\$281.24
Sep-14	08-45549	5.00	1	\$ 76.468070	\$382.34	\$47.79	\$0.00	\$47.79	329	4.250000%	\$25.00	\$1.50	\$74.29
Oct-14	08-45549	38.00	1	\$ 71.213620	\$2,706.12	\$338.26	\$0.00	\$338.26	299	4.250000%	\$33.83	\$9.45	\$381.54
Nov-14	08-45549	2.00	1	\$ 65.196210	\$130.39	\$16.30	\$0.00	\$16.30	268	4.250000%	\$25.00	\$0.40	\$41.70
Dec-14	08-45549	17.00	1	\$ 52.014950	\$884.25	\$110.53	\$0.00	\$110.53	237	4.250000%	\$25.00	\$2.29	\$137.82
TOTALS		91.00			\$6,860.25	\$857.53	\$0.00	\$857.53			\$158.83	\$27.28	\$1,043.64

COMMENTS: COLUMN (1) VOLUME : REPRESENTS THE UNDER REPORTED SKIM OIL VOLUME FROM RRC # 08-45549 (BEAVERHEAD STATE 2-24 UNIT).

COLUMN (3) PRICE: PER PRICE ON GLO-1 REPORT FOR 7/2014,9/2014 THROUGH 12/2014,AND PER NYMEX PRICE LIST FOR 6/2014 DUE TO NO GLO-1 PRODUCTION REPORT RECEIVED.

COLUMN (9), (10), (11) : SEE ATTACHMENT III, SUMMARY OF PENALTY/INTEREST ASSESSMENT RULES", FOR EXPLANATION OF PENALTY AND INTEREST CALCULATION.

SALES VOLUME REPORTED TO THE GLO WAS COMPARED TO VOLUMES REPORTED TO THE RRC, VOLUMES WERE UNDER REPORTED TO THE GLO RESULTING IN UNDER PAID ROYALTY.

NOTE 1 : PLEASE REMIT PAYMENT OF THIS INVOICE SEPARATELY FROM MONTHLY ROYALTY PAYMENTS. THE PREFERRED METHOD OF PAYMENT IS BY CHECK ACCOMPANIED WITH THE BOTTOM HALF OF THE ATTACHED INVOICE. IF PAYMENT IS MADE THROUGH ACH DEBIT, NOTIFY THE AUDITOR AS TO THE REMITTANCE DATE SO THE INVOICE CAN BE PROPERLY CREDITED.

NOTE 2: NEED TO SUBMIT THE GLO-1 REPORT TO REFLECT THE ADDITIONAL ROYALTY DUE AMOUNT.

ATTENTION: MARY JANE RUSSELL

CERTIFIED MAIL : 7011150000124155590

7

File No. MF 11989
Reeves County
Reconciliation Billing
Date Filed: 9/23/15
By George P. Bush, Commissioner
Rayden Ramirez

**RAILROAD COMMISSION OF TEXAS****Form G-1**

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Submitted
Date: 09/12/2017
Tracking No.: 168353

GAS WELL BACK PRESSURE TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG**OPERATOR INFORMATION**

Operator Name: CIMAREX ENERGY CO. Operator No.: 153438
Operator Address: ATTN GENE HOLLOWAY 202 S CHEYENNE AVE STE 1000 TULSA, OK 74103-0000

WELL INFORMATION

API No.: 42-389-34094 County: REEVES
Well No.: 1H RRC District No.: 08
Lease Name: BEAVERHEAD STATE 2-24 UNIT Field Name: PHANTOM (WOLFCAMP)
RRC Gas ID No.: Field No.: 71052900
Location: Section: 24, Block: 2, Survey: H&GN RR CO/MC TIER, S A, Abstract: 3491
Latitude: Longitude:
This well is located 8.8 miles in a SW
direction from MENTONE,
which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Reclass Oil to Gas
Type of completion: Other/Recompletion
Well Type: Producing Completion or Recompletion Date: 06/24/2014
Type of Permit Date Permit No.
Permit to Drill, Plug Back, or Deepen 01/18/2014 776756
Rule 37 Exception
Fluid Injection Permit
O&G Waste Disposal Permit
Other:

COMPLETION INFORMATION

Spud date: 02/28/2014 Date of first production after rig released: 06/24/2014
Date plug back, deepening, recompletion, or drilling operation commenced: 02/28/2014 Date plug back, deepening, recompletion, or drilling operation ended: 04/28/2014
Number of producing wells on this lease in this field (reservoir) including this well: 1 Distance to nearest well in lease & reservoir (ft.): 0.0
Total number of acres in lease: 637.08 Elevation (ft.): 2828 GL
Total depth TVD (ft.): 10951 Total depth MD (ft.): 15684
Plug back depth TVD (ft.): 10951 Plug back depth MD (ft.): 15633
Was directional survey made other than inclination (Form W-12)? Yes Rotation time within surface casing (hours): 186.0
Is Cementing Affidavit (Form W-15) attached? Yes
Recompletion or reclass? Yes Multiple completion? No
Type(s) of electric or other log(s) run: Neutron/Density logs (combo of tools)
Electric Log Other Description:
Location of well, relative to nearest lease boundaries Off Lease: No
of lease on which this well is located: 500.0 Feet from the SE Line and
200.0 Feet from the NE Line of the
BEAVERHEAD STATE 2-24 UNIT Lease.

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type
-------------------	-------------------------	----------	--------------------

G1: N/A

PACKET

PHANTOM (WOLFCAMP)

45549

1H

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination

Depth (ft.): 1800.0

Date: 01/16/2014

SWR 13 Exception

Depth (ft.): 3995.0

GAS MEASUREMENT DATA

Date of test: 01/23/2017

Gas measurement method(s):

Gas production during test (MCF): 3513

Orifice Meter, Flange Taps

Was the well preflowed for 48 hours? Yes

Run No.	Line size	Orif. or Choke Size (in.)	24 hr. Coeff. Orif. Or Choke (in.)	Static Pm or Choke (in.)	Diff (hw)	Flow Temp (°F)	Temp. (Ftf)	Gravity (Fg)	Compress (Fpv)	Volume (MCF/day)
1	3.068	1.750	20667.45	77.0	52.0	63.0	0.9971	0.8941	1.007	1171.0

FIELD DATA AND PRESSURE CALCULATIONS

Gravity (dry gas): 0.750

Gravity (liquid hydrocarbons) (Deg. API): 48.7

Gas-Liquid Hydro Ratio (CF/Bbl): 11710

Gravity (mixture): Gmix= 0.965

Avg. shut in temp. (°F): 129.0

Bottom hole temp. and depth: 185.0 °F@ 10996.0 FT

Run No.	Time of Run (Min.)	Choke Size (in.)	Wellhead Pressure (PSIA)	Wellhead Flow Temp (°F)
SHUT-IN	1440	SI	5795	74.0
1	4320	48/64	185	85.0

CASING RECORD

Row	Type of Casing	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi - Stage Depth (ft.)	Multi - Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	Surface	9 5/8	12 1/4	3900			C	1780	2857.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	11144			H	1005	2235.0	0	Calculation

LINER RECORD

Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	4 1/2	6	10457	15684	H	360	432.0	1124	Calculation

TUBING RECORD

Row	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	2 7/8	10552	10560 / PLT V2

PRODUCING/INJECTION/DISPOSAL INTERVAL

Row	Open hole?	From (ft.)	To (ft.)
1	No	L1 11240	15560

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment performed?

Yes

Is well equipped with a downhole actuation sleeve? No

If yes, actuation pressure (PSIG):

Production casing test pressure (PSIG) prior to hydraulic fracturing treatment: 7500

Actual maximum pressure (PSIG) during hydraulic fracturing: 7530

Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)?

No

Row Type of Operation

1 Fracture

Amount and Kind of Material Used

PLEASE SEE FRAC FOCUS REPORT

Depth Interval (ft.)

11240.0 15560.0

FORMATION RECORD

<u>Formations</u>	<u>Encountered</u>	<u>Depth TVD (ft.)</u>	<u>Depth MD (ft.)</u>	<u>Is formation isolated?</u>	<u>Remarks</u>
PERMIAN	Yes	100.0	100.0	Yes	CEMENT
CASTILLE	Yes	2024.0	2024.0	Yes	CEMENT
FORD-DELAWARE	Yes	3889.0	3889.0	Yes	CEMENT
DELAWARE	Yes	3889.0	3889.0	Yes	CEMENT
BELL CANYON	Yes	3919.0	3919.0	Yes	CEMENT
CHERRY CANYON	Yes	4893.0	4893.0	Yes	CEMENT
BONE SPRINGS	Yes	7445.0	7445.0	Yes	CEMENT
WOLFCAMP	Yes	10523.0	10523.0	Yes	CEMENT
FORD-DELAWARE	No			No	DUPLICATE
CASTILLE	No			No	DUPLICATE
BELL CANYON	No			No	DUPLICATE
DELAWARE	No			No	DUPLICATE
DELAWARE CONSOLIDATED GAS	No			No	DUPLICATE
CHERRY CANYON	No			No	DUPLICATE
BONE SPRINGS	No			No	DUPLICATE
PERMIAN	No			No	DUPLICATE
WOLFCAMP	No			No	DUPLICATE
PENNSYLVANIAN	No			No	DUPLICATE
MISSISSIPPIAN	No			No	DUPLICATE
DEVONIAN	No			No	DUPLICATE
FUSSELMAN	No			No	DUPLICATE
ELLENBURGER	No			No	DUPLICATE
DELAWARE CONSOLIDATED GAS	No			No	TOP NAME NOT USED IN THIS PART OF FIELD
PENNSYLVANIAN	No			No	TOP NAME NOT USED IN THIS PART OF FIELD
MISSISSIPPIAN	No			No	TOP NAME NOT USED IN THIS PART OF FIELD
DEVONIAN	No			No	TOP NAME NOT USED IN THIS PART OF FIELD
FUSSELMAN	No			No	TOP NAME NOT USED IN THIS PART OF FIELD
ELLENBURGER	No			No	TOP NAME NOT USED IN THIS PART OF FIELD

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)?
Is the completion being downhole commingled (SWR 10)?

No

REMARKS

THE G1 IS BEING SUBMITTED TO RE-CLASS WELL TO GAS UPON THE APPROVAL OF DOCKET # 08-029559
AMENDING THE GOR TO 3000:1

KOP: CASING DEPTHS REFLECT KB, KB=30'

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2017-09-12 12:15:51.779] EDL=4320 feet, max acres=640, PHANTOM (WOLFCAMP) oil or gas well

CASING RECORD :

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

GAS MEASUREMENT DATE REMARK:

OPERATOR'S CERTIFICATION

Printed Name: Hope Knauls
Telephone No.: (918) 295-1799

Title:
Date Certified: 09/11/2017



Reservoir Development

PathFinder, a Schlumberger Company
9200 West Reno Avenue
Oklahoma City, Oklahoma 73127 USA
Phone: (405) 789-1515
Fax: (405) 789-1519

September 24, 2014

Railroad Commission of Texas
Oil and Gas Division
PO Box 12967
Capital Station
Austin, Texas 78711

Attention: Pam Johns

Re:

CLIENT: Cimarex Energy Co.
WELL: Beaverhead State 2-24 Unit 1H ST01
FIELD: Phantom (Wolfcamp)
RIG: Cactus 157
COUNTY: Reeves
API NO: 42-389-34094-01
JOB NO: 14MLD0132

Enclosed, please find the original copy of the survey performed on the referenced well by PathFinder, a division of Schlumberger Technology Corporation (P-5 No. 754900).

Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Addam Accettella DXT-2	Beaverhead State 2-24 Unit 1H ST01 Side Track	10518.00 Ft to 15645.00 Ft	March 29, 2014 to April 24, 2014	SlimPulse

A plat of the bottom hole location is oriented both to the surface location and to the lease lines (or until line in case of pooling), is attached to the survey report.

If any other information is required, please contact the undersigned at the above letterhead and phone number.

Sincerely,

Joe Hogan
Field Service Manager

CC: Cimarex Energy Co.
Enclosures: [2]
County of Reeves
State of Texas

SCHLUMBERGER
Survey Report

23-Sep-2014

Client..... Cimarex Energy Co.
Field..... PHANTOM (WOLF CAMP)

Well..... BEAVERHEAD STATE 2-24 Unit 1H ST01
API number..... 42-389-34094-01
Engineer..... Adam Accetella

Spud date..... 27-Feb-14
Last survey date..... 24-Apr-14
Total accepted surveys..... 76
MD of first survey..... 10518.00 ft
MD of last survey..... 15645.00 ft
Latitude..... 31° 39' 13.208" N
Longitude..... 103° 44' 1.254" W

County..... Reeves
State..... Texas
Rig..... Cactus 157

Survey calculation methods.....
Method for positions..... Minimum curvature
Method for DLS..... Lubinski

Depth reference.....
Permanent datum..... MSL
Depth reference..... Driller's Depth
GI above permanent..... 2828.00
KB above permanent..... 2858.00
DF above permanent..... 2858.00

Vertical section origin.....
Latitude (+N/S)..... 0.00 ft
Departure (+E/W)..... 0.00 ft

Grid Coordinates.....
NAD27 Texas State Plane, Central Zone, US Feet
X..... 718830.99 ft
Y..... 942990.17 ft

Azimuth from Vectr Origin to target..... 238.02 degrees

MWD Survey Reference Criteria

Run1..... Calculation Date: 24-Mar-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47956.12 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53856 degrees Tolerance Dip: 0.45 degrees

Run2..... Calculation Date: 3-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47952.95 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53776 degrees Tolerance Dip: 0.45 degrees

Run3..... Calculation Date: 6-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47952.01 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53752 degrees Tolerance Dip: 0.45 degrees

Run4..... Calculation Date: 7-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47951.69 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53744 degrees Tolerance Dip: 0.45 degrees

Run5..... Calculation Date: 15-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47949.16 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53679 degrees Tolerance Dip: 0.45 degrees

Run6..... Calculation Date: 18-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47948.21 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53655 degrees Tolerance Dip: 0.45 degrees

Run7..... Calculation Date: 22-Apr-2014
Location G..... 998.77976 mgn Tolerance G..... 2.50 mgn
Location B..... 47946.95 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.53623 degrees Tolerance Dip: 0.45 degrees

SGGM Model: 2013

Run1.....
Magnetic dec (+E/W)..... 7.38592 degrees
Grid Conv (+E/W)..... -1.75139 degrees
Total Azim Corr (+E/W)..... 9.13731 degrees

Run2.....
Magnetic dec (+E/W)..... 7.38287 degrees
Grid Conv (+E/W)..... -1.75138 degrees
Total Azim Corr (+E/W)..... 9.13425 degrees

Run3.....
Magnetic dec (+E/W)..... 7.38196 degrees
Grid Conv (+E/W)..... -1.75138 degrees
Total Azim Corr (+E/W)..... 9.13354 degrees

Run4.....
Magnetic dec (+E/W)..... 7.38165 degrees
Grid Conv (+E/W)..... -1.75139 degrees
Total Azim Corr (+E/W)..... 9.13304 degrees

Run5.....
Magnetic dec (+E/W)..... 7.37921 degrees

Grid Conv (+E/W) : -1.75138 degrees
Total Azim Corr (+E/W) : 9.13059 degrees

---Run6---
Magnetic dec (+E/W) : 7.3783 degrees
Grid Conv (+E/W) : -1.75138 degrees
Total Azim Corr (+E/W) : 9.12968 degrees

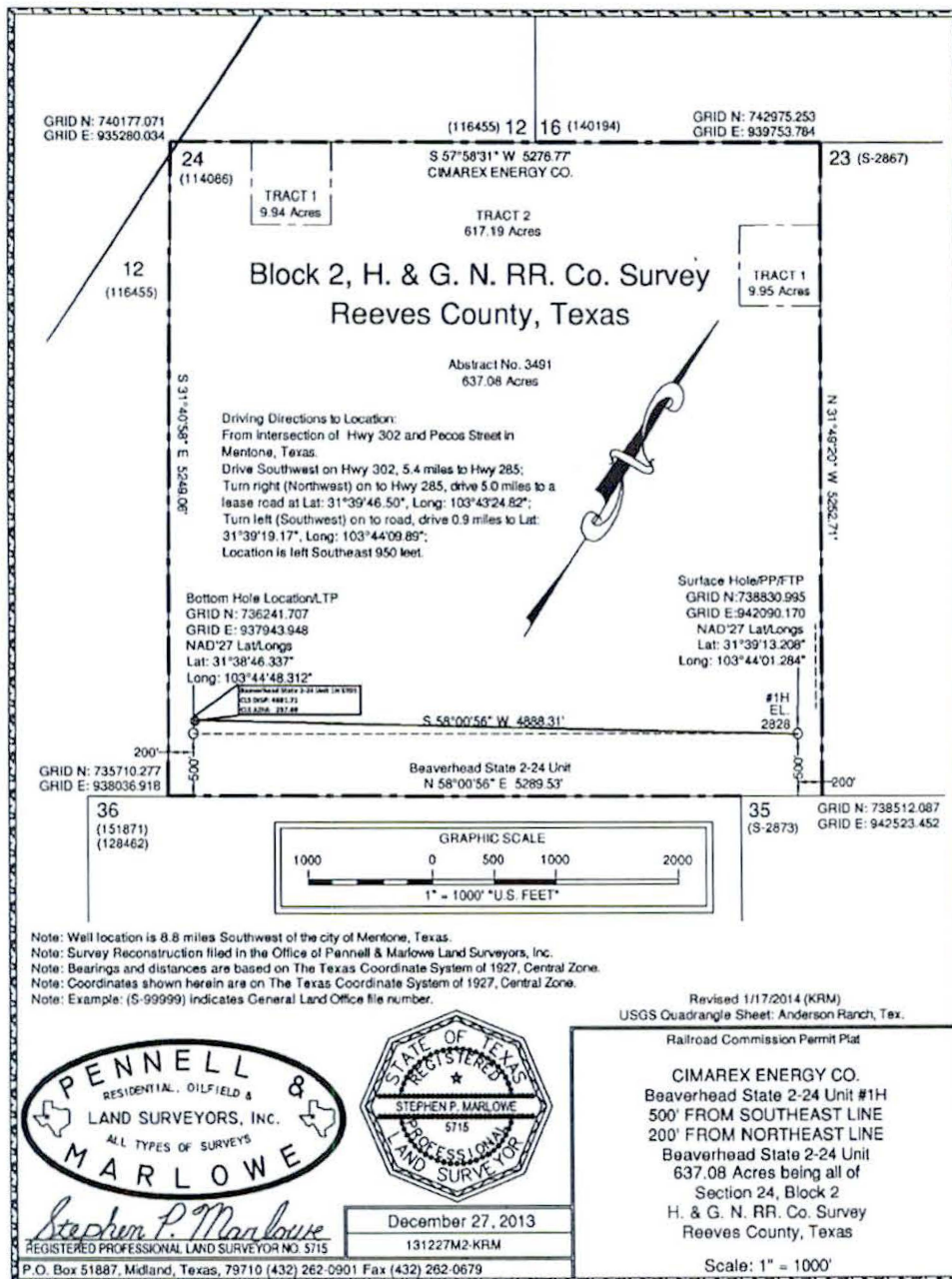
---Run7---
Magnetic dec (+E/W) : 7.37708 degrees
Grid Conv (+E/W) : -1.75138 degrees
Total Azim Corr (+E/W) : 9.12846 degrees

Survey Correction Index Description

0 = Uncorrected 1 = Sag Corrected
2 = DMAG Corrected 3 = Sag + DMAG Corrected

Survey List													
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/S (ft)	E/W (ft)	Closure (ft)	M AN (deg)	DLS (deg/100ft)	Tool	Correction
1	0.00	0.00	0.00	-999.25	0.00	0.00	0.00	0.00	0	90.00	0.00	TIP	0
2	117.00	1.01	180.04	117.00	116.99	0.55	-1.03	0.00	1.0312	180.04	0.86	SingleShot	0
3	201.00	0.31	238.05	84.00	200.99	1.17	-1.89	-0.19	1.90173	185.86	1.05	SingleShot	0
4	286.00	0.22	323.92	85.00	285.99	1.41	-1.88	-0.49	1.94316	194.46	0.43	SingleShot	0
5	387.00	0.09	226.85	101.00	386.99	1.50	1.78	0.66	1.89608	200.28	0.25	SingleShot	0
6	484.00	0.22	299.84	97.00	483.99	1.66	-1.74	-0.87	1.9461	206.70	0.32	SingleShot	0
7	580.00	0.09	301.16	96.00	579.99	1.78	-1.61	-1.10	1.94747	214.35	0.14	SingleShot	0
8	671.00	0.22	229.83	91.00	670.99	1.99	-1.68	-1.29	2.1231	217.54	0.23	SingleShot	0
9	783.00	0.22	248.55	92.00	782.99	2.34	-1.86	-1.59	2.45043	220.54	0.08	SingleShot	0
10	856.00	0.22	267.14	93.00	855.99	2.67	-1.94	-1.94	2.73909	225.02	0.08	SingleShot	0
11	948.00	0.09	173.12	92.00	947.98	2.86	-2.02	-2.11	2.91733	226.26	0.26	SingleShot	0
12	1041.00	0.09	157.15	93.00	1040.98	2.90	-2.16	-2.07	2.99182	223.86	0.09	SingleShot	0
13	1134.00	0.22	194.06	93.00	1133.98	3.04	-2.40	-2.09	3.17946	221.05	0.17	SingleShot	0
14	1224.00	0.22	354.24	90.00	1223.98	3.09	-2.39	-2.15	3.21552	221.90	0.48	SingleShot	0
15	1318.00	0.09	70.62	94.00	1317.98	2.94	-2.19	-2.10	3.23081	223.75	0.23	SingleShot	0
16	1416.00	0.22	50.54	98.00	1415.98	2.68	-2.04	-1.85	2.77591	222.57	0.14	SingleShot	0
17	1510.00	0.22	4.92	94.00	1509.98	2.39	-1.75	-1.72	2.45578	224.56	0.18	SingleShot	0
18	1605.00	0.09	258.66	93.00	1604.98	2.35	-1.58	-1.78	2.38238	228.37	0.27	SingleShot	0
19	1698.00	0.00	218.32	93.00	1697.98	2.42	-1.50	-1.85	2.44573	229.23	0.10	SingleShot	0
20	1792.00	0.22	148.43	94.00	1791.98	2.41	-1.75	-1.75	2.47482	225.08	0.23	SingleShot	0
21	1887.00	0.22	85.65	95.00	1886.98	2.25	-1.89	-1.47	2.39073	217.94	0.23	SingleShot	0
22	1982.00	0.09	275.93	95.00	1981.98	2.14	-1.86	-1.36	2.30867	216.16	0.33	SingleShot	0
23	2078.00	0.09	148.43	96.00	2077.98	2.20	-1.92	-1.40	2.37276	216.02	0.17	SingleShot	0
24	2167.00	0.09	111.75	89.00	2166.98	2.15	-2.00	-1.29	2.38363	212.82	0.06	SingleShot	0
25	2262.00	0.22	307.84	95.00	2261.98	2.18	1.92	1.37	2.35584	215.46	0.32	SingleShot	0
26	2357.00	0.31	353.76	95.00	2356.98	2.13	-1.55	-1.54	2.18509	224.76	0.23	SingleShot	0
27	2452.00	0.40	42.93	95.00	2451.98	1.70	1.05	-1.34	1.70493	231.84	0.32	SingleShot	0
28	2544.00	0.22	130.34	92.00	2543.98	1.53	-0.91	-0.99	1.35806	226.63	0.49	SingleShot	0
29	2639.00	0.22	10.24	149.00	2638.98	1.05	-0.84	-0.72	1.1024	220.67	0.26	SingleShot	0
30	2737.00	0.22	204.96	44.00	2736.98	1.07	-0.83	-0.74	1.11106	221.69	0.99	SingleShot	0
31	2832.00	0.22	271.54	95.00	2831.98	1.37	-0.99	-1.00	1.40602	225.24	0.25	SingleShot	0
32	2930.00	0.09	299.05	98.00	2929.98	1.57	-0.95	-1.25	1.57155	232.91	0.15	SingleShot	0
33	3020.00	0.09	0.22	90.00	3019.98	1.56	-0.84	-1.32	1.56199	237.35	0.10	SingleShot	0
34	3118.00	0.00	27.55	96.00	3117.98	1.52	-0.77	-1.31	1.52239	239.74	0.09	SingleShot	0
35	3211.00	0.00	80.42	95.00	3210.98	1.52	-0.77	-1.31	1.52239	239.74	0.00	SingleShot	0
36	3304.00	0.00	9.10	91.00	3303.98	1.52	-0.77	-1.31	1.52239	239.74	0.00	SingleShot	0
37	3399.00	0.00	83.54	95.00	3398.98	1.52	-0.77	-1.31	1.52239	239.74	0.00	SingleShot	0
38	3494.00	0.00	172.44	95.00	3493.98	1.52	-0.77	-1.31	1.52239	239.74	0.00	SingleShot	0
39	3589.00	0.09	331.55	95.00	3588.98	1.52	-0.70	-1.35	1.52186	242.55	0.09	SingleShot	0
40	3683.00	0.70	96.85	94.00	3682.97	1.07	-0.71	-0.82	1.07815	229.15	0.80	SingleShot	0
41	3773.00	0.79	96.46	90.00	3772.97	0.15	-0.84	0.35	0.90933	157.58	0.10	SingleShot	0
42	3816.00	0.70	91.34	43.00	3815.96	-0.30	-0.88	0.90	1.261	134.20	0.26	SingleShot	0
43	3912.00	0.40	31.23	56.00	3911.96	-1.07	-0.90	1.81	2.03426	116.20	0.31	SingleShot	0
44	3964.00	0.48	75.54	52.00	3963.96	-1.43	-0.85	2.22	2.37413	110.92	0.28	SingleShot	0
45	4059.00	0.48	98.74	95.00	4058.95	-2.11	-0.81	3.00	1.0353	105.10	0.20	SingleShot	0
46	4153.00	0.79	74.05	54.00	4152.95	-3.03	-0.69	4.01	4.0676	99.77	0.43	SingleShot	0
47	4248.00	1.01	75.76	95.00	4247.94	-4.46	-0.30	5.45	5.45833	93.20	0.23	SingleShot	0
48	4340.00	0.88	92.15	92.00	4339.92	-5.82	0.13	6.94	6.94299	91.09	0.32	SingleShot	0
49	4434.00	1.10	99.23	54.00	4433.91	-7.09	-0.30	8.55	8.55906	92.03	0.27	SingleShot	0
50	4530.00	1.10	94.04	96.00	4529.89	-8.53	-0.52	10.38	10.39523	92.85	0.10	SingleShot	0
51	4624.00	0.88	86.84	94.00	4623.88	-9.90	-0.54	12.00	12.01933	92.58	0.27	SingleShot	0
52	4717.00	0.88	78.35	83.00	4716.87	-11.19	-0.36	13.42	13.42045	91.52	0.14	SingleShot	0
53	4812.00	0.70	81.03	95.00	4811.86	-12.41	-0.12	14.70	14.7039	90.46	0.19	SingleShot	0
54	4905.00	0.62	101.56	93.00	4904.85	-13.30	-0.13	15.76	15.75807	90.48	0.27	SingleShot	0
55	5000.00	0.48	91.63	95.00	4999.85	-14.00	-0.25	16.86	16.66066	90.84	0.18	SingleShot	0
56	5094.00	0.22	111.22	94.00	5093.85	-14.44	-0.32	17.22	17.22568	91.07	0.30	SingleShot	0
57	5187.00	0.31	68.55	93.00	5186.84	-14.79	-0.29	17.62	17.62374	90.96	0.23	SingleShot	0
58	5283.00	0.09	336.05	96.00	5282.84	-15.06	-0.13	17.83	17.83287	90.42	0.34	SingleShot	0
59	5375.00	0.22	263.63	92.00	5374.84	-14.91	-0.08	17.63	17.62772	90.27	0.23	SingleShot	0
60	5473.00	0.31	518.85	96.00	5472.84	-14.69	0.09	17.27	17.26695	89.72	0.26	SingleShot	0
61	5565.00	0.22	11.03	94.00	5564.84	-14.76	0.45	17.13	17.1312	88.50	0.27	SingleShot	0
62	5658.00	0.31	336.56	91.00	5657.84	-14.92	0.85	17.06	17.08377	87.16	0.20	SingleShot	0
63	5753.00	0.31	349.85	97.00	5752.84	-15.06	1.34	16.91	16.90555	85.46	0.07	SingleShot	0
64	5847.00	0.09	210.26	94.00	5846.84	-15.09	1.53	16.83	16.89989	84.80	0.41	SingleShot	0
65	5940.00	0.00	137.13	93.00	5939.84	-15.22	1.47	16.79	16.85783	85.01	0.10	SingleShot	0
66	6034.00	0.22	206.32	94.00	6033.84	-14.87	1.31	16.71	16.76475	85.53	0.23	SingleShot	0
67	6130.00	0.31	143.52	96.00	6129.84	-14.73	0.93	16.79	16.81235	86.82	0.30	SingleShot	0
68	6235.00	0.31	204.26	105.00	6234.84	-14.52	0.44	16.84	16.84454	88.49	0.30	SingleShot	0
69	6316.00	0.70	239.85	81.00	6315.83	-13.84	0.00	16.32	16.3208	90.01	0.60	SingleShot	0
70	6411.00	0.79	221.75	97.00	6410.83	-12.61	-0.80	15.36	15.38999	92.98	0.26	SingleShot	0
71	6506.00	0.70	228.03	93.00	6505.82	-11.43	-1.66	14.51	14.60834	96.52	0.13	SingleShot	0
72	6602.00	0.70	219.85	96.00	6601.81	-10.30	2.50	13.70	13.9285	100.34	0.10	SingleShot	0
73	6697.00	0.79	224.34	95.00	6696.80	-9.11	-3.42	12.87	13.11781	104.86	0.11	SingleShot	0
74	6793.00	0.88	215.86	96.00	6792.79	-7.78	-4.49	11.98	12.70054	110.53	0.16	SingleShot	0
75	6887.00	1.01	220.96	94.00	6886.78	-6.32	5.70	11.01	12.39829	117.35	0.16	SingleShot	0
76	6982.00	0.88	227.86	95.00	6981.77	-4.80	-6.82	9.92	12.03915	124.50	0.18	SingleShot	0
77	7077.00	1.01	230.93	95.00	7076.75	-3.26	-7.84	8.73	11.73159	131.00	0.15	SingleShot	0
78	7172.00	0.79	232.73	95.00	7171.74	-1.77	-8.76	7.56	11.571	139.20	0.23	SingleShot	0
79	7267.00	0.78	228.12	95.00	7266.73	-0.48	-9.59	6.55	11.61703	145.67	0.07	SingleShot	0
80	7360.00	0.79	233.13	93.00	7359.72	0.80	-10.41	5.58	11.78891	151.88	0.07	SingleShot	0
81	7455.00	0.70	225.73	95.00	7454.72	2.01	-11.20	4.62	12.11996	157.58	0.14	SingleShot	0
82	7550.00	0.62	214.85	95.00	7549.71	3.05	-12.03	3.91	12.85123	161.99	0.16	SingleShot	0
83	7645.00	0.62	202.54	95.00	7644.70	3.95	-12.93	3.42	13.37276	165.17	0.14	SingleShot	0
84	7739.00	0.48	185.23	94.00	7738.70	4.60	-13.79	3.19	14.1538	166.97	0.23	SingleShot	0
85	7832.00	0.62	174.15	93.00	7831.70	5.06	-14.68	3.21	15.0241	167.68	0.19	SingleShot	0

86	7931.00	0.62	172.35	99.00	7930.89	5.51	-15.74	3.33	16.0905	168.05	0.02	SingleShot	0
87	8024.00	0.62	163.96	93.00	8073.08	5.86	-16.72	3.54	17.09414	168.05	0.10	SingleShot	0
88	8119.00	0.40	159.74	95.00	8118.68	6.07	-17.53	3.80	17.53515	167.78	0.29	SingleShot	0
89	8213.00	0.88	105.25	94.00	8212.68	5.64	-18.03	4.61	18.60565	165.67	0.77	SingleShot	0
90	8308.00	1.19	118.52	95.00	8307.66	4.66	-18.69	6.18	19.68357	161.71	0.41	SingleShot	0
91	8403.00	0.88	124.14	95.00	8402.54	3.88	-19.57	7.65	21.01083	158.66	0.34	SingleShot	0
92	8497.00	1.10	129.95	94.00	8496.63	3.31	-20.55	8.94	22.4128	156.50	0.26	SingleShot	0
93	8590.00	1.19	133.55	93.00	8589.61	2.79	-21.79	10.32	24.11304	154.66	0.12	SingleShot	0
94	8695.00	1.32	138.56	105.00	8694.59	2.32	-23.45	11.91	26.30273	153.07	0.16	SingleShot	0
95	8790.00	1.19	137.24	95.00	8789.56	1.96	-25.00	13.30	28.3158	151.97	0.14	SingleShot	0
96	8884.00	0.31	82.43	94.00	8883.56	1.56	-25.71	14.22	29.30089	151.05	1.07	SingleShot	0
97	8978.00	0.31	76.42	94.00	8977.55	1.10	-25.65	14.72	29.57287	150.14	0.07	SingleShot	0
98	9074.00	0.22	112.85	96.00	9073.55	0.74	-25.66	15.15	29.79448	149.45	0.19	SingleShot	0
99	9168.00	0.22	221.66	94.00	9167.55	0.81	-25.86	15.19	29.99457	149.57	0.38	SingleShot	0
100	9264.00	0.31	199.16	96.00	9263.55	1.19	-26.25	14.98	30.22191	150.28	0.14	SingleShot	0
101	9356.00	0.48	205.93	92.00	9355.55	1.71	-26.83	14.73	30.60718	151.22	0.19	SingleShot	0
102	9453.00	0.62	211.02	97.00	9452.54	2.53	-27.64	14.29	31.11587	152.67	0.15	SingleShot	0
103	9547.00	0.70	201.84	94.00	9546.54	3.44	-28.61	13.81	31.77	154.23	0.14	SingleShot	0
104	9643.00	0.88	221.66	96.00	9642.53	4.62	-29.71	13.10	32.4675	156.20	0.34	SingleShot	0
105	9736.00	0.88	221.66	99.00	9735.52	5.99	-30.77	12.15	33.09409	158.45	0.00	SingleShot	0
106	9829.00	0.79	220.74	93.00	9828.51	7.29	-31.79	11.26	33.72346	160.50	0.10	SingleShot	0
107	9926.00	0.70	216.76	97.00	9925.50	8.51	-32.70	10.39	34.31236	162.38	0.12	SingleShot	0
108	10018.00	0.79	217.92	92.00	10017.49	9.66	-33.59	9.59	34.92937	164.07	0.16	SingleShot	0
109	10112.00	0.88	238.53	94.00	10111.48	10.99	-34.48	8.57	35.52580	166.03	0.33	SingleShot	0
110	10209.00	0.88	217.84	97.00	10208.47	12.43	-35.45	7.48	36.23368	168.08	0.33	SingleShot	0
111	10305.00	1.10	230.84	96.00	10304.46	14.04	-36.62	6.32	37.15746	170.21	0.33	SingleShot	0
112	10400.00	0.88	219.64	95.00	10399.44	15.64	-37.75	5.14	38.10313	172.24	0.31	SingleShot	0
113	10498.00	1.19	226.63	93.00	10497.43	17.26	-38.97	3.99	39.17084	174.16	0.36	SingleShot	0
114	10518.00	1.30	224.50	25.00	10517.42	17.79	-39.35	3.60	39.51162	174.77	0.46	SingleShot	0
115	10581.00	5.87	226.27	63.00	10580.28	21.64	-42.08	0.77	40.09153	178.95	7.27	SingleShot	0
116	10612.00	9.34	225.20	31.00	10611.01	25.68	-44.83	-2.28	44.88329	182.92	11.25	SingleShot	0
117	10647.00	13.17	230.17	35.00	10645.33	37.44	-49.24	-7.50	49.80393	188.66	10.96	SingleShot	1
118	10675.00	17.10	231.25	28.00	10672.35	39.69	-53.86	-13.16	55.44226	193.73	14.07	SingleShot	1
119	10706.00	20.81	232.34	31.00	10701.66	49.70	-60.08	-21.08	63.66683	199.33	12.02	SingleShot	1
120	10737.00	25.02	233.13	31.00	10730.21	61.72	-67.38	-30.68	74.036	204.48	13.62	SingleShot	1
121	10769.00	28.58	235.03	32.00	10758.77	76.11	-75.83	-42.37	86.86452	209.20	11.44	SingleShot	1
122	10801.00	31.91	236.92	32.00	10786.41	92.71	-84.83	-55.74	101.50546	213.30	10.82	SingleShot	1
123	10832.00	35.69	237.72	31.00	10812.17	109.45	-94.14	-70.25	117.48237	216.73	12.28	SingleShot	1
124	10863.00	39.69	238.83	31.00	10836.69	128.40	-104.39	-86.19	135.37163	219.55	13.02	SingleShot	1
125	10895.00	43.30	239.78	32.00	10860.66	149.59	-116.15	-103.82	155.79049	221.79	11.49	SingleShot	1
126	10927.00	47.52	235.71	32.00	10883.12	172.35	-128.98	-122.65	177.98668	221.56	13.19	SingleShot	1
127	10958.00	51.36	235.89	31.00	10903.27	195.88	-142.21	-142.13	201.06026	224.98	12.39	SingleShot	1
128	10989.00	54.98	236.77	31.00	10921.85	220.68	-155.96	-162.78	225.4358	226.22	11.90	SingleShot	1
129	11021.00	59.48	237.85	32.00	10939.17	247.58	-170.49	-185.42	251.88556	227.40	14.35	SingleShot	1
130	11052.00	63.67	238.11	31.00	10953.92	274.83	-184.73	-208.66	278.68173	228.48	13.88	SingleShot	1
131	11083.00	67.91	240.96	31.00	10966.63	305.08	-198.54	-233.15	306.42527	229.54	14.72	SingleShot	1
132	11117.00	73.79	243.18	104.00	11000.73	401.03	-244.81	-319.92	402.84067	232.58	6.00	SingleShot	0
133	11219.00	73.57	242.69	32.00	11009.72	431.62	-258.78	-347.27	433.08609	233.31	1.60	SingleShot	0
134	11255.00	76.20	244.32	36.00	11019.17	466.20	-274.27	-378.36	467.31098	234.06	8.03	SingleShot	0
135	11287.00	79.00	245.04	32.00	11026.10	497.23	-287.63	-406.59	498.04669	234.72	9.64	SingleShot	0
136	11319.00	80.95	244.95	32.00	11031.67	528.50	-300.95	-435.15	528.68185	235.33	6.11	SingleShot	0
137	11351.00	83.10	244.65	32.00	11036.11	559.97	-314.44	-463.82	560.36346	235.87	6.78	SingleShot	0
138	11383.00	84.77	243.81	32.00	11039.49	591.60	-328.28	-492.48	591.86255	236.31	5.81	SingleShot	0
139	11415.00	86.14	243.00	32.00	11042.02	623.35	-342.56	-521.00	623.52907	236.68	4.98	SingleShot	0
140	11447.00	86.94	242.43	32.00	11043.95	655.19	-357.20	-549.39	655.30159	236.97	3.07	SingleShot	0
141	11479.00	87.84	241.21	32.00	11045.41	687.09	-372.79	-577.57	687.58814	237.19	4.71	SingleShot	0
142	11510.00	88.07	239.63	31.00	11046.52	718.04	-387.58	-606.51	718.09032	237.33	5.16	SingleShot	0
143	11543.00	88.66	237.77	33.00	11047.46	751.02	-404.72	-632.69	751.06636	237.39	5.92	SingleShot	0
144	11576.00	91.23	237.79	96.00	11047.72	847.01	-455.90	-713.90	847.05726	237.44	2.47	SingleShot	0
145	11615.00	90.86	239.88	96.00	11046.13	942.99	-505.57	-796.03	943.01315	237.58	2.19	SingleShot	0
146	11653.00	89.69	237.34	96.00	11045.67	1038.97	-555.57	-877.97	1038.98839	237.67	2.92	SingleShot	0
147	11692.00	90.58	235.39	94.00	11045.45	1132.93	-607.64	-956.23	1132.96006	237.57	2.28	SingleShot	0
148	11731.00	90.28	235.05	96.00	11044.73	1228.81	-662.40	-1035.08	1228.86283	237.38	0.48	SingleShot	0
149	11770.00	91.20	234.71	96.00	11043.49	1324.65	-717.62	-1113.59	1324.78851	237.20	1.03	SingleShot	0
150	11809.00	91.54	235.07	96.00	11041.36	1420.49	-772.83	-1192.10	1420.69181	237.05	0.41	SingleShot	0
151	11848.00	90.34	233.99	95.00	11039.96	1515.30	-827.95	-1269.46	1515.59309	236.89	1.55	SingleShot	0
152	11887.00	91.96	238.50	96.00	11038.03	1611.21	-881.27	-1349.33	1611.53996	236.65	4.99	SingleShot	0
153	11926.00	90.31	241.55	97.00	11036.11	1708.11	-929.72	-1433.23	1708.36583	237.03	3.57	SingleShot	0
154	11965.00	90.41	242.21	95.00	11035.51	1802.89	-974.49	-1517.01	1803.04095	237.28	0.71	SingleShot	0
155	12004.00	92.29	241.60	97.00	11033.39	1899.64	-1020.16	-1602.56	1899.71472	237.52	1.85	SingleShot	0
156	12043.00	90.96	241.51	96.00	11030.83	1995.43	-1065.87	-1686.93	1995.4527	237.71	1.14	SingleShot	0
157	12082.00	89.52	238.30	97.00	11030.42	2092.36	-1114.51	-1770.84	2092.369	237.82	3.63	SingleShot	0
158	12121.00	90.62	237.61	97.00	11030.31	2189.35	-1165.98	-1853.06	2189.36459	237.87	1.34	SingleShot	0
159	12160.00	90.52	239.89	96.00	11029.36	2285.34	-1215.78	-1935.12	2285.34345	237.86	2.38	SingleShot	0
160	12199.00	91.89	236.65	96.00	11027.34	2381.30	-1266.25	-2016.74	2381.30478	237.80	3.67	SingleShot	0
161	12238.00	91.55	236.02	96.00	11024.46	2477.21	-1319.44	-2096.60	2477.22739	237.82	0.75	SingleShot	0
162	12277.00	91.99	238.08	95.00	11021.53	2572.15	-1371.09	-2176.27	2572.16849	237.79	2.22	SingleShot	0
163	12316.00	90.24	240.16	95.00	11019.67	2667.10	-1419.83	-2257.78	2667.11669	237.84	2.87	SingleShot	0
164	12355.00	90.93	239.76	95.00	11018.71	2762.04	-1467.38	-2340.02	2762.04786	237.91	0.84	SingleShot	0
165	12394.00	90.76	239.77	97.00	11017.28	2858.99	-1516.22	-2423.81	2858.98532	237.97	0.18	SingleShot	0
166	12433.00	90.65	238.65	95.00	11016.11	2953.96	-1564.85	-2505.42	2953.9582	238.01	1.18	SingleShot	0
167	12472.00	90.01	238.73	95.00	11015.54	3048.95	-1614.22	-2586.58	3048.94955	238.03	0.66	SingleShot	0
168	12511.00	89.92	239.01	96.00	11015.57	3144.94	-1663.85	-2668.75	3144.93951	238.06	0.31	SingleShot	0
169	12550.00	88.14	237.20	95.00	11017.17	3239.92	-1714.04	-2749.39</					



Beaverhead State 2-24 Unit 1H MWD 0' to 10518' Survey Geodetic Report

(Def Survey)

Report Date: December 01, 2014 - 12:02 PM
 Client: PathFinder
 Field: TX, Reeves (NAD 27 CZ) 2014
 Structure / Slot: PathFinder (Beaverhead State 2-24 Unit 1H) Cactus 157 / Beaverhead State 2-24 Unit 1H
 Well: Beaverhead State 2-24 Unit 1H
 Borehole: Original Hole
 UWI / API#: TX-CIM-0111 / 42-389-34094
 Survey Name: Beaverhead State 2-24 Unit 1H MWD 0' to 10518'
 Survey Date: December 01, 2014
 Tort / AHD / DDI / ERD Ratio: 25.345' / 88.279' / 3.350' / 0.008
 Coordinate Reference System: NAD27 Texas State Plane, Central Zone, US Feet
 Location Lat / Long: N 31° 39' 13.3200" W 103° 44' 1.3200"
 Location Grid N/E Y/X: N 738842.431 NUS, E 942087.381 NUS
 CRS Grid Convergence Angle: -1.7514°
 Grid Scale Factor: 0.99994838
 Version / Patch: 2.7.698.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 238.020° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 2852.000 ft above Unknown
 Seabed / Ground Elevation: 2828.000 ft above Unknown
 Magnetic Declination: 7.382°
 Total Gravity Field Strength: 998.4367mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47876.529 nT
 Magnetic Dip Angle: 59.518°
 Declination Date: December 01, 2014
 Magnetic Declination Model: BGM 2013
 North Reference: Grid North
 Total Corr Mag North→Grid: -1.7510°
 North: 9.1330°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	738842.43	942087.38	N 31° 39' 13.32" W 103° 44' 1.32"	1.32
Begin MWD Surveys	117.00	1.01	180.04	116.99	0.55	-1.03	0.00	0.90	738841.40	942087.38	N 31° 39' 13.31" W 103° 44' 1.32"	1.32
	201.00	0.31	238.05	200.99	1.17	-1.89	-0.18	1.05	738840.54	942087.19	N 31° 39' 13.30" W 103° 44' 1.32"	1.32
	286.00	0.22	323.82	285.99	1.41	-1.88	-0.40	0.43	738840.50	942086.90	N 31° 39' 13.30" W 103° 44' 1.32"	1.32
	387.00	0.09	226.85	386.99	1.50	-1.78	-0.66	0.25	738840.65	942086.72	N 31° 39' 13.30" W 103° 44' 1.33"	1.33
	484.00	0.22	269.84	483.99	1.86	-1.74	-0.87	0.22	738840.69	942086.51	N 31° 39' 13.30" W 103° 44' 1.33"	1.33
	580.00	0.05	301.16	579.99	1.78	-1.61	-1.10	0.14	738840.82	942086.28	N 31° 39' 13.30" W 103° 44' 1.33"	1.33
	671.00	0.22	229.83	670.99	1.99	-1.68	-1.29	0.23	738840.75	942086.09	N 31° 39' 13.30" W 103° 44' 1.33"	1.33
	763.00	0.22	248.55	762.99	2.34	-1.86	-1.59	0.08	738840.57	942085.79	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	856.00	0.22	267.14	855.99	2.67	-1.94	-1.94	0.08	738840.50	942085.44	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	948.00	0.09	175.12	947.98	2.86	-2.02	-2.11	0.26	738840.41	942085.27	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1041.00	0.09	157.15	1040.98	2.90	-2.16	-2.07	0.03	738840.27	942085.31	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1134.00	0.22	194.06	1133.98	3.04	-2.40	-2.00	0.17	738840.03	942085.29	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1224.00	0.22	354.24	1223.98	3.09	-2.39	-2.15	0.48	738840.04	942085.23	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1318.00	0.09	70.62	1317.98	2.94	-2.19	-2.10	0.23	738840.24	942085.29	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1418.00	0.22	50.54	1415.98	2.68	-2.04	-1.88	0.14	738840.38	942085.50	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1510.00	0.22	4.92	1509.98	2.39	-1.75	-1.72	0.18	738840.68	942085.66	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1605.00	0.09	258.86	1604.98	2.35	-1.58	-1.78	0.27	738840.85	942085.60	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1698.00	0.00	218.32	1697.98	2.42	-1.60	-1.85	0.10	738840.83	942085.53	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1792.00	0.22	146.43	1791.98	2.41	-1.75	-1.75	0.23	738840.68	942085.63	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1887.00	0.22	85.85	1886.98	2.25	-1.89	-1.47	0.23	738840.55	942085.91	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	1982.00	0.09	275.93	1981.98	2.14	-1.86	-1.36	0.33	738840.57	942086.02	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	2078.00	0.09	146.43	2077.98	2.20	-1.92	-1.40	0.17	738840.51	942085.99	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	2167.00	0.09	111.75	2166.98	2.16	-2.00	-1.29	0.06	738840.43	942086.09	N 31° 39' 13.30" W 103° 44' 1.33"	1.33
	2262.00	0.22	307.84	2261.98	2.18	-1.92	-1.37	0.32	738840.51	942086.01	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	2357.00	0.31	353.76	2356.98	2.13	-1.55	-1.54	0.23	738840.88	942085.84	N 31° 39' 13.30" W 103° 44' 1.34"	1.34
	2452.00	0.40	42.93	2451.98	1.70	-1.05	-1.34	0.32	738841.35	942086.04	N 31° 39' 13.31" W 103° 44' 1.34"	1.34
	2544.00	0.22	130.34	2543.98	1.33	-0.93	-0.69	0.49	738841.50	942086.39	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	2693.00	0.22	10.24	2692.98	1.06	-0.84	-0.72	0.26	738841.60	942086.86	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	2737.00	0.22	204.95	2736.98	1.07	-0.83	-0.74	0.99	738841.50	942086.84	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	2832.00	0.22	271.54	2831.98	1.37	-0.99	-1.00	0.25	738841.44	942086.38	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	2930.00	0.09	269.05	2929.98	1.57	-0.95	-1.25	0.15	738841.48	942086.13	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3020.00	0.09	0.22	3019.98	1.58	-0.84	-1.32	0.10	738841.59	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3116.00	0.00	27.55	3115.98	1.52	-0.77	-1.31	0.09	738841.66	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3211.00	0.00	80.42	3210.98	1.52	-0.77	-1.31	0.00	738841.66	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3304.00	0.00	9.10	3303.98	1.52	-0.77	-1.31	0.00	738841.66	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3399.00	0.00	83.54	3398.98	1.52	-0.77	-1.31	0.00	738841.66	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3494.00	0.00	172.44	3493.98	1.52	-0.77	-1.31	0.00	738841.66	942086.07	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3589.00	0.09	331.55	3588.98	1.52	-0.70	-1.35	0.09	738841.73	942086.03	N 31° 39' 13.31" W 103° 44' 1.34"	1.34
	3683.00	0.70	96.85	3682.97	1.07	-0.71	-0.82	0.80	738841.73	942086.57	N 31° 39' 13.31" W 103° 44' 1.33"	1.33
	3773.00	0.79	96.46	3772.97	0.15	-0.84	0.35	0.10	738841.55	942087.73	N 31° 39' 13.31" W 103° 44' 1.32	1.32
	3816.00	0.70	91.14	3815.96	-0.30	-0.86	0.90	0.25	738841.59	942088.28	N 31° 39' 13.31" W 103° 44' 1.31	1.31
	3912.00	0.40	91.23	3911.99	-1.07	-0.90	1.83	0.31	738841.53	942089.21	N 31° 39' 13.31" W 103° 44' 1.30	1.30
	3964.00	0.48	75.54	3963.96	-1.43	-0.85	2.22	0.28	738841.58	942089.50	N 31° 39' 13.31" W 103° 44' 1.29	1.29
	4059.00	0.48	98.74	4058.95	-2.11	-0.81	3.00	0.20	738841.82	942090.38	N 31° 39' 13.31" W 103° 44' 1.29	1.29
	4153.00	0.79	74.05	4152.95	-3.03	-0.69	4.01	0.43	738841.74	942091.39	N 31° 39' 13.31" W 103° 44' 1.27	1.27
	4248.00	1.01	75.76	4247.94	-4.48	-0.30	5.45	0.23	738842.13	942092.83	N 31° 39' 13.32" W 103° 44' 1.26	1.26
	4340.00	0.88	92.15	4339.82	-5.82	-0.13	6.94	0.32	738842.30	942094.32	N 31° 39' 13.32" W 103° 44' 1.24	1.24
	4434.00	1.10	99.23	4433.91	-7.06	-0.30	8.55	0.27	738842.13	942095.93	N 31° 39' 13.32" W 103° 44' 1.22	1.22
	4530.00	1.10	94.04	4529.89	-8.53	-0.52	10.38	0.10	738841.92	942097.78	N 31° 39' 13.32" W 103° 44' 1.20	1.20
	4624.00	0.88	88.84	4623.88	-9.90	-0.34	12.00	0.27	738841.89	942099.38	N 31° 39' 13.32" W 103° 44' 1.18	1.18
	4717.00	0.88	78.35	4716.87	-11.18	-0.38	13.42	0.14	738842.08	942100.80	N 31° 39' 13.32" W 103° 44' 1.16	1.16
	4812.00	0.70	81.03	4811.85	-12.41	-0.12	14.70	0.19	738842.31	942102.08	N 31° 39' 13.32" W 103° 44' 1.15	1.15
	4905.00	0.62	101.56	4904.85	-13.30	-0.13	15.76	0.27	738842.30	942103.14	N 31° 39' 13.32" W 103° 44' 1.14	1.14
	5000.00	0.48	91.63	4999.85	-14.00	-0.26	16.65	0.18	738842.19	942104.04	N 31° 39' 13.32" W 103° 44' 1.13	1.13
	5094.00	0.22	111.22	5093.85	-14.44	-0.32	17.22	0.30	738842.11	942104.80	N 31° 39' 13.32" W 103° 44' 1.12	1.12
	5187.00	0.31	88.55	5186.84	-14.79	-0.29	17.62	0.23	738842.14	942105.00	N 31° 39' 13.32" W 103° 44' 1.12	1.12
	5283.00	0.09	338.05	5282.84	-15.06	-0.13	17.83	0.34	738842.30	942105.21	N 31° 39' 13.32" W 103° 44' 1.11	1.11
	5375.00	0.22	263.83	5374.84	-14.91	-0.08	17.63	0.23	738842.35	942105.01	N 31° 39' 13.32" W 103° 44' 1.12	1.12
	5471.00	0.31	318.85	5470.84	-14.69	0.09	17.27	0.26	738842.52	942104.85	N 31° 39' 13.33" W 103° 44' 1.12	1.12
	5565.00	0.22	11.03	5564.84	-14.77	0.45	17.13	0.27	738842.88	942104.51	N 31° 39' 13.33" W 103° 44' 1.12	1.12
	5656.00	0.31	336.56	5655.84	-14.92	0.85	17.06	0.20	738843.28	942104.44	N 31° 39' 13.33" W 103° 44' 1.12	1.12
	5753.00	0.31	349.85	5752.84	-15.08	1.34	16.91	0.07	738843.78	942104.29	N 31° 39' 13.34" W 103° 44' 1.12	1.12
	5847.00	0.09	210.06	5846.84	-15.09	1.53	16.83	0.41	738843.96	942104.21	N 31° 39' 13.34" W 103° 44' 1.13	1.13

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DL3 (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	5940.00	0.00	137.12	5939.64	-15.02	1.47	16.79	0.10	738843.90	942104.17	N 31 39 13.34	W 103 44 1.13
	6034.00	0.22	206.32	6033.84	-14.87	1.31	16.71	0.23	738843.74	942104.09	N 31 39 13.34	W 103 44 1.13
	6130.00	0.31	143.52	6129.84	-14.73	0.23	16.76	0.30	738843.36	942104.17	N 31 39 13.33	W 103 44 1.13
	6235.00	0.31	204.28	6234.84	-14.52	0.44	16.84	0.30	738842.88	942104.22	N 31 39 13.33	W 103 44 1.13
	6316.00	0.70	236.85	6315.83	-13.84	0.00	16.32	0.90	738842.43	942103.70	N 31 39 13.32	W 103 44 1.13
	6413.00	0.79	221.75	6412.83	-12.61	-0.80	15.36	0.26	738841.63	942102.74	N 31 39 13.32	W 103 44 1.14
	6506.00	0.70	228.03	6505.82	-11.43	-1.66	14.51	0.13	738840.77	942101.89	N 31 39 13.31	W 103 44 1.15
	6602.00	0.70	218.85	6601.81	-10.30	-2.50	13.70	0.10	738839.93	942101.08	N 31 39 13.30	W 103 44 1.15
	6697.00	0.79	224.24	6696.80	-9.11	-3.42	12.87	0.11	738839.02	942100.25	N 31 39 13.29	W 103 44 1.17
	6793.00	0.68	215.86	6792.79	-7.78	-4.49	11.98	0.16	738837.95	942099.36	N 31 39 13.28	W 103 44 1.18
	6887.00	1.01	220.98	6886.76	-6.32	-5.70	11.01	0.16	738836.74	942098.39	N 31 39 13.27	W 103 44 1.19
	6982.00	0.88	227.86	6981.77	-4.81	-6.82	9.92	0.18	738835.61	942097.30	N 31 39 13.26	W 103 44 1.20
	7077.00	1.01	230.93	7076.75	-3.26	-7.84	8.73	0.15	738834.62	942096.11	N 31 39 13.25	W 103 44 1.22
	7172.00	0.79	232.73	7171.74	-1.77	-8.70	7.56	0.23	738833.67	942094.94	N 31 39 13.24	W 103 44 1.23
	7267.00	0.79	226.12	7266.73	0.46	-9.59	6.55	0.07	738832.84	942093.83	N 31 39 13.23	W 103 44 1.24
	7360.00	0.79	233.13	7359.72	0.79	-10.41	5.56	0.07	738832.03	942092.54	N 31 39 13.22	W 103 44 1.25
	7455.00	0.70	225.73	7454.72	2.01	-11.20	4.52	0.14	738831.23	942092.00	N 31 39 13.21	W 103 44 1.26
	7550.00	0.62	214.85	7549.71	3.05	-12.03	3.91	0.16	738830.30	942091.29	N 31 39 13.20	W 103 44 1.27
	7645.00	0.62	202.54	7644.70	3.94	-12.93	3.42	0.14	738829.50	942090.80	N 31 39 13.19	W 103 44 1.28
	7739.00	0.48	185.23	7738.70	4.80	-13.79	3.19	0.23	738828.64	942090.57	N 31 39 13.18	W 103 44 1.28
	7832.00	0.62	174.15	7831.70	5.05	-14.68	3.21	0.19	738827.75	942090.59	N 31 39 13.18	W 103 44 1.28
	7931.00	0.62	172.35	7930.09	5.51	-15.74	3.33	0.02	738826.69	942090.71	N 31 39 13.17	W 103 44 1.28
	8024.00	0.62	163.90	8023.68	5.86	-16.72	3.54	0.10	738825.71	942090.92	N 31 39 13.16	W 103 44 1.27
	8119.00	0.40	159.74	8118.68	6.06	-17.53	3.80	0.23	738824.90	942091.18	N 31 39 13.15	W 103 44 1.27
	8213.00	0.68	105.25	8212.68	5.64	-18.03	4.61	0.77	738824.41	942091.99	N 31 39 13.14	W 103 44 1.26
	8308.00	1.19	118.62	8307.66	4.66	-18.69	6.18	0.41	738823.74	942093.56	N 31 39 13.14	W 103 44 1.24
	8403.00	0.88	124.14	8402.64	3.88	-19.57	7.65	0.34	738822.86	942095.03	N 31 39 13.13	W 103 44 1.22
	8497.00	1.10	129.95	8496.63	3.31	-20.55	8.94	0.26	738821.88	942096.32	N 31 39 13.12	W 103 44 1.21
	8590.00	1.19	133.55	8589.61	2.79	-21.79	10.32	0.12	738820.54	942097.70	N 31 39 13.11	W 103 44 1.19
	8695.00	1.32	136.56	8694.59	2.32	-23.45	11.91	0.16	738818.98	942099.29	N 31 39 13.09	W 103 44 1.17
	8790.00	1.19	137.24	8789.56	1.95	-25.00	13.30	0.14	738817.44	942100.68	N 31 39 13.08	W 103 44 1.16
	8884.00	0.31	88.43	8883.56	1.55	-25.71	14.23	1.07	738816.72	942101.80	N 31 39 13.07	W 103 44 1.15
	8978.00	0.31	76.42	8977.55	1.09	-25.65	14.72	0.07	738816.79	942102.10	N 31 39 13.07	W 103 44 1.14
	9074.00	0.22	112.65	9073.55	0.74	-25.66	15.15	0.19	738816.77	942102.53	N 31 39 13.07	W 103 44 1.14
	9168.00	0.22	221.66	9167.55	0.81	-25.86	15.19	0.38	738816.57	942102.57	N 31 39 13.07	W 103 44 1.14
	9264.00	0.31	199.18	9263.55	1.19	-25.25	14.98	0.14	738816.19	942102.36	N 31 39 13.06	W 103 44 1.14
	9356.00	0.48	205.93	9355.55	1.71	-26.83	14.73	0.19	738815.81	942102.11	N 31 39 13.06	W 103 44 1.14
	9453.00	0.62	211.02	9452.54	2.52	-27.04	14.29	0.15	738814.79	942101.67	N 31 39 13.05	W 103 44 1.15
	9547.00	0.70	201.84	9546.54	3.44	-28.81	13.81	0.14	738813.82	942101.19	N 31 39 13.04	W 103 44 1.15
	9643.00	0.68	221.66	9642.53	4.62	-29.71	13.10	0.34	738812.73	942100.48	N 31 39 13.03	W 103 44 1.16
	9736.00	0.86	221.66	9735.52	5.99	-30.77	12.15	0.00	738811.66	942099.53	N 31 39 13.02	W 103 44 1.17
	9829.00	0.79	220.74	9828.51	7.29	-31.76	11.26	0.10	738810.64	942098.64	N 31 39 13.01	W 103 44 1.18
	9926.00	0.70	226.75	9925.50	8.51	-32.70	10.39	0.12	738809.73	942097.77	N 31 39 13.00	W 103 44 1.19
	10018.00	0.70	217.92	10017.49	9.86	-33.59	9.59	0.16	738808.85	942096.97	N 31 39 12.99	W 103 44 1.20
	10112.00	0.58	238.53	10111.48	10.99	-34.48	8.57	0.33	738807.96	942095.95	N 31 39 12.98	W 103 44 1.21
	10209.00	0.88	217.84	10208.47	12.43	-35.45	7.48	0.33	738806.98	942094.86	N 31 39 12.97	W 103 44 1.22
	10305.00	1.10	230.84	10304.46	14.04	-36.82	6.32	0.33	738805.82	942093.70	N 31 39 12.96	W 103 44 1.23
	10400.00	0.88	219.84	10399.44	15.63	-37.75	5.14	0.31	738804.88	942092.52	N 31 39 12.95	W 103 44 1.25
End MWD Surveys	10493.00	1.10	226.63	10492.43	17.28	-38.97	3.99	0.36	738803.47	942091.37	N 31 39 12.94	W 103 44 1.26

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7855 Sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	24.000	Act Stns	30.000	30.000	SLB_MWD-STD-Depth Only
	1	24.000	10493.000	Act Stns	30.000	30.000	SLB_MWD-STD

GRID N: 740177.071
GRID E: 935280.034

(116455) 12 16 (140194)

GRID N: 742975.253
GRID E: 939753.784

24
(114086)

S 57°58'31" W 5276.77'
CIMAREX ENERGY CO.

23 (S-2867)

TRACT 1
9.94 Acres

TRACT 2
617.19 Acres

TRACT 1
9.95 Acres

12
(116455)

Block 2, H. & G. N. RR. Co. Survey Reeves County, Texas

Abstract No. 3491
637.08 Acres

Driving Directions to Location:

From Intersection of Hwy 302 and Pecos Street in
Mentona, Texas.
Drive Southwest on Hwy 302, 5.4 miles to Hwy 285;
Turn right (Northwest) on to Hwy 285, drive 5.0 miles to a
lease road at Lat: 31°39'46.50", Long: 103°43'24.82";
Turn left (Southwest) on to road, drive 0.9 miles to Lat:
31°39'19.17", Long: 103°44'09.89";
Location is left Southeast 950 feet.

Bottom Hole Location/LTP

GRID N: 736241.707
GRID E: 937943.948
NAD'27 Lat/Longs
Lat: 31°38'46.337"
Long: 103°44'48.312"

Surface Hole/PP/FTP

GRID N: 736830.995
GRID E: 942090.170
NAD'27 Lat/Longs
Lat: 31°39'13.208"
Long: 103°44'01.284"

N 31°48'20" W 5282.71'

S 58°00'56" W 4888.31'

#1H
EL
2828

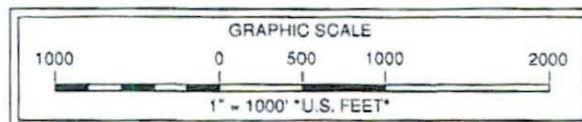
Beaverhead State 2-24 Unit #1H
100' x 100' x 100'
Bearing 1.00

200'
500'
GRID N: 735710.277
GRID E: 938036.918

Beaverhead State 2-24 Unit
N 58°00'56" E 5289.53'

200'

36
(151871)
(128462)



35 GRID N: 738512.087
(S-2873) GRID E: 942523.452

Note: Well location is 8.8 miles Southwest of the city of Mentona, Texas.
Note: Survey Reconstruction filed in the Office of Pennell & Marlowe Land Surveyors, Inc.
Note: Bearings and distances are based on The Texas Coordinate System of 1927, Central Zone.
Note: Coordinates shown herein are on The Texas Coordinate System of 1927, Central Zone.
Note: Example: (S-99999) Indicates General Land Office file number.

Revised 1/17/2014 (KRM)
USGS Quadrangle Sheet: Anderson Ranch, Tex.



December 27, 2013

131227M2-KRM

Stephen P. Marlowe
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 5715

P.O. Box 51887, Midland, Texas, 79710 (432) 262-0901 Fax (432) 262-0579

Railroad Commission Permit Plat

CIMAREX ENERGY CO.
Beaverhead State 2-24 Unit #1H
500' FROM SOUTHEAST LINE
200' FROM NORTHEAST LINE
Beaverhead State 2-24 Unit
637.08 Acres being all of
Section 24, Block 2
H. & G. N. RR. Co. Survey
Reeves County, Texas

Scale: 1" = 1000'

gyro/data

Gyrodata Incorporated
3811 South County Road 1285
Odessa, Texas 79765

432-561-8458
Fax: 432-563-7982

March 31, 2014

**Railroad Commission of Texas
Oil & Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711**

Attn: Ms. Pamela Johns

RE:

**Cimarex Energy
bEaverhead State 2-24 Unit #1H
Permit No. 776756
H&GN RR Co, Abstract 3491
Phantom (Wolfcamp)
Reeves County, Texas
API No. 42-389-34094**

Ms. Johns:

Enclosed, please find the original and one copy of the survey performed on the referenced well by Gyrodata, Inc (P-5 No. 339711). Other information required by your office is as follows:

Name & Title Of Surveyor	Drainhole Number	Surveyed Depths	Dates Performed	Type of Survey
Michael Robles Surveyor	Original Hole	Surface - 8550'	03/12/14 - 03/13/14	Rate Gyro Multishot

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in the case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Sincerely,



Holly Walker
Operations Assistant - Midland, TX

Enclosure

A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

CIMAREX ENERGY

Lease: BEAVERHEAD STATE 2-24 Well: #1H, 5" DRILLPIPE
Location: CACTUS DRILLING RIG # 157, REEVES COUNTY, TEXAS

Job Number: MD0314GVCW286

Run Date: 12 Mar 2014

Report Generated: 22 Mar 2014 12:55

Surveyor: Michael Robles, Matt Walker, Jeff Davis

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Hand Held GPS

Survey Latitude: 31.653722 deg. N Longitude: 103.733639 deg. W

Azimuth Correction:

Gyro: 1.75000 deg to Grid North

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 30.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: BEAVERHEAD STATE 2-24 Well: #1H, 5" DRILLPIPE

Location: CACTUS DRILLING RIG # 157, REEVES COUNTY, TEXAS

Job Number: MD0314GVCW286

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N 0.00 E
0 - 8550 FT RATE GYROSCOPIC VERTICAL CONTINUOUS SURVEY RUN INSIDE 5" DRILLPIPE							
ALL MEASURED DEPTHS AND COORDINATES REFERNCED TO CACTUS DRILLING RIG # 157 R.K.B 30 FT							
100.00	0.89	156.64	0.89	100.00	0.8	156.6	0.71 S 0.31 E
200.00	0.18	144.97	0.71	199.99	1.7	155.6	1.54 S 0.70 E
300.00	0.02	297.36	0.20	299.99	1.8	155.1	1.66 S 0.77 E
400.00	0.04	74.61	0.05	399.99	1.8	154.5	1.64 S 0.78 E
500.00	0.03	153.36	0.04	499.99	1.9	153.6	1.66 S 0.82 E
600.00	0.02	244.66	0.03	599.99	1.9	154.0	1.69 S 0.82 E
700.00	0.02	160.11	0.02	699.99	1.9	154.5	1.71 S 0.82 E
800.00	0.05	156.76	0.03	799.99	1.9	154.6	1.76 S 0.84 E
900.00	0.01	114.57	0.04	899.99	2.0	154.4	1.80 S 0.86 E
1000.00	0.03	273.34	0.04	999.99	2.0	154.7	1.81 S 0.85 E
1100.00	0.02	176.64	0.03	1099.99	2.0	155.5	1.82 S 0.83 E
1200.00	0.06	133.28	0.04	1199.99	2.1	155.1	1.87 S 0.87 E
1300.00	0.03	275.60	0.08	1299.99	2.1	155.2	1.90 S 0.88 E
1400.00	0.04	209.26	0.04	1399.99	2.1	156.5	1.93 S 0.84 E
1500.00	0.03	47.01	0.07	1499.99	2.1	156.4	1.94 S 0.85 E
1600.00	0.09	101.00	0.08	1599.99	2.2	153.9	1.93 S 0.95 E
1700.00	0.06	106.38	0.03	1699.99	2.2	151.2	1.96 S 1.08 E
1800.00	0.07	104.56	0.01	1799.99	2.3	149.2	1.99 S 1.19 E
1900.00	0.03	58.41	0.05	1899.99	2.4	147.4	1.99 S 1.27 E

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: BEAVERHEAD STATE 2-24 Well: #1H, 5" DRILLPIPE

Location: CACTUS DRILLING RIG # 157, REEVES COUNTY, TEXAS

Job Number: MD0314GVCW286

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
2000.00	0.05	123.37	0.05	1999.99	2.4 146.3	2.00 S 1.33 E
2100.00	0.05	103.59	0.02	2099.99	2.5 145.2	2.03 S 1.41 E
2200.00	0.03	43.12	0.05	2199.99	2.5 144.0	2.03 S 1.48 E
2300.00	0.11	335.56	0.10	2299.99	2.4 142.9	1.92 S 1.45 E
2400.00	0.10	348.15	0.03	2399.99	2.2 141.4	1.75 S 1.39 E
2500.00	0.05	70.70	0.10	2499.99	2.2 139.4	1.65 S 1.41 E
2600.00	0.02	279.45	0.07	2599.99	2.2 138.7	1.63 S 1.43 E
2700.00	0.04	28.32	0.05	2699.99	2.1 138.2	1.60 S 1.43 E
2800.00	0.04	86.65	0.04	2799.99	2.2 136.6	1.57 S 1.48 E
2900.00	0.04	0.01	0.05	2899.99	2.2 135.3	1.53 S 1.51 E
3000.00	0.03	318.03	0.03	2999.99	2.1 134.6	1.48 S 1.50 E
3100.00	0.02	246.48	0.03	3099.99	2.1 134.9	1.46 S 1.47 E
3200.00	0.02	159.34	0.03	3199.99	2.1 135.6	1.49 S 1.46 E
3300.00	0.01	129.68	0.01	3299.99	2.1 135.8	1.52 S 1.48 E
3400.00	0.03	60.32	0.03	3399.99	2.1 135.0	1.51 S 1.51 E
3500.00	0.07	57.92	0.03	3499.99	2.2 132.8	1.46 S 1.58 E
3600.00	0.15	75.11	0.09	3599.99	2.2 128.6	1.40 S 1.76 E
3700.00	0.72	96.78	0.58	3699.99	2.9 120.0	1.44 S 2.50 E
3800.00	0.71	96.53	0.01	3799.98	4.1 113.0	1.59 S 3.73 E
3900.00	0.52	87.46	0.21	3899.97	5.1 108.8	1.64 S 4.80 E
4000.00	0.53	92.84	0.05	3999.97	5.9 106.0	1.64 S 5.71 E
4100.00	0.63	82.93	0.14	4099.96	6.9 103.4	1.59 S 6.71 E
4200.00	0.75	77.87	0.14	4199.96	8.0 100.0	1.39 S 7.89 E

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: BEAVERHEAD STATE 2-24 Well: #1H, 5" DRILLPIPE

Location: CACTUS DRILLING RIG # 157, REEVES COUNTY, TEXAS

Job Number: MD0314GVCW286

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
4300.00	0.89	78.93	0.14	4299.95	9.4	96.8	1.10 S 9.30 E
4400.00	1.02	91.10	0.24	4399.93	11.0	95.1	0.97 S 10.95 E
4500.00	1.06	93.05	0.05	4499.92	12.8	94.6	1.04 S 12.77 E
4600.00	0.93	86.08	0.18	4599.90	14.5	94.1	1.03 S 14.50 E
4700.00	0.93	87.05	0.02	4699.89	16.1	93.3	0.93 S 16.11 E
4800.00	0.74	90.37	0.20	4799.88	17.6	92.9	0.90 S 17.57 E
4900.00	0.52	98.12	0.23	4899.87	18.7	93.0	0.96 S 18.66 E
5000.00	0.45	101.78	0.08	4999.87	19.5	93.3	1.11 S 19.50 E
5100.00	0.33	96.96	0.13	5099.87	20.2	93.5	1.22 S 20.17 E
5200.00	0.22	63.34	0.19	5199.86	20.7	93.3	1.17 S 20.62 E
5300.00	0.17	17.71	0.16	5299.86	20.9	92.6	0.95 S 20.84 E
5400.00	0.14	335.24	0.12	5399.86	20.8	91.9	0.70 S 20.83 E
5500.00	0.17	332.88	0.04	5499.86	20.7	91.3	0.46 S 20.72 E
5600.00	0.19	346.32	0.05	5599.86	20.6	90.5	0.17 S 20.61 E
5700.00	0.19	353.04	0.02	5699.86	20.6	89.6	0.15 N 20.55 E
5800.00	0.12	294.50	0.16	5799.86	20.4	89.0	0.36 N 20.44 E
5900.00	0.13	248.60	0.10	5899.86	20.2	89.0	0.36 N 20.24 E
6000.00	0.13	226.76	0.05	5999.86	20.1	89.3	0.24 N 20.05 E
6100.00	0.31	176.19	0.25	6099.86	20.0	90.3	0.11 S 19.99 E
6200.00	0.29	187.84	0.07	6199.86	20.0	91.8	0.63 S 19.98 E
6300.00	0.54	227.08	0.37	6299.86	19.6	93.5	1.20 S 19.60 E
6400.00	0.72	230.50	0.18	6399.85	18.9	95.8	1.92 S 18.77 E
6500.00	0.72	225.73	0.06	6499.84	18.0	98.8	2.75 S 17.84 E

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: BEAVERHEAD STATE 2-24 Well: #1H, 5" DRILLPIPE

Location: CACTUS DRILLING RIG # 157, REEVES COUNTY, TEXAS

Job Number: MD0314GVCW286

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
6600.00	0.74	222.04	0.05	6599.83	17.3 102.2	3.67 S 16.96 E
6700.00	0.78	223.50	0.05	6699.83	16.7 106.1	4.64 S 16.05 E
6800.00	0.85	222.38	0.07	6799.82	16.1 110.7	5.69 S 15.08 E
6900.00	0.87	223.95	0.03	6899.80	15.6 115.7	6.78 S 14.06 E
7000.00	0.87	222.41	0.02	6999.79	15.2 121.2	7.88 S 13.03 E
7100.00	0.94	224.04	0.08	7099.78	15.0 127.1	9.02 S 11.95 E
7200.00	0.82	231.25	0.16	7199.77	14.8 132.9	10.06 S 10.82 E
7300.00	0.79	228.70	0.05	7299.76	14.7 138.4	10.96 S 9.74 E
7400.00	0.74	226.72	0.05	7399.75	14.7 143.6	11.86 S 8.76 E
7500.00	0.71	224.78	0.04	7499.74	15.0 148.4	12.74 S 7.85 E
7600.00	0.53	209.15	0.25	7599.74	15.4 152.1	13.58 S 7.19 E
7700.00	0.54	197.23	0.11	7699.73	16.0 154.7	14.43 S 6.83 E
7800.00	0.47	182.32	0.15	7799.73	16.7 156.4	15.29 S 6.67 E
7900.00	0.47	172.16	0.08	7899.72	17.5 157.4	16.11 S 6.71 E
8000.00	0.60	175.94	0.13	7999.72	18.3 158.2	17.03 S 6.81 E
8100.00	0.45	152.89	0.25	8099.72	19.2 158.6	17.90 S 7.02 E
8200.00	0.55	129.20	0.23	8199.71	20.0 157.8	18.55 S 7.57 E
8300.00	1.04	114.69	0.53	8299.70	21.1 155.5	19.23 S 8.76 E
8400.00	1.07	123.98	0.17	8399.69	22.6 152.8	20.13 S 10.36 E
8500.00	0.99	129.84	0.13	8499.67	24.3 150.9	21.20 S 11.80 E
8550.00	1.17	137.49	0.45	8549.66	25.2 150.3	21.85 S 12.47 E

Final Station Closure: Distance: 25.16 ft Az: 150.29 deg.

File No. M-111989

(8)

RRC Data on Pexco head 1H Well County

Date Filed: 10/2/17

George P. Bush, Commissioner

By [Signature]