

**TITLE 19 NATURAL RESOURCES AND WILDLIFE**  
**CHAPTER 15 OIL AND GAS**  
**PART 21 GAS PRORATION AND ALLOCATION**

**19.15.21.1 ISSUING AGENCY:** Energy, Minerals and Natural Resources Department, Oil Conservation Division.  
[19.15.21.1 NMAC - Rp, 19.15.8.1 NMAC, 12/1/08]

**19.15.21.2 SCOPE:** 19.15.21 NMAC applies to persons engaged in gas development and production within New Mexico.  
[19.15.21.2 NMAC - Rp, 19.15.8.2 NMAC, 12/1/08]

**19.15.21.3 STATUTORY AUTHORITY:** 19.15.21 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Section 70-2-6, Section 70-2-11, Section 70-2-12, Section 70-2-16 and Section 70-2-17.  
[19.15.21.3 NMAC - Rp, 19.15.8.3 NMAC, 12/1/08]

**19.15.21.4 DURATION:** Permanent.  
[19.15.21.4 NMAC - Rp, 19.15.8.4 NMAC, 12/1/08]

**19.15.21.5 EFFECTIVE DATE:** December 1, 2008, unless a later date is cited at the end of a section.  
[19.15.21.5 NMAC - Rp, 19.15.8.5 NMAC, 12/1/08]

**19.15.21.6 OBJECTIVE:** To establish requirements implementing the division's statutory authority to prorate and allocate gas production to prevent waste and protect correlative rights.  
[19.15.21.6 NMAC - Rp, 19.15.8.6 NMAC, 12/1/08]

**19.15.21.7 DEFINITIONS:**

**A.** "Acreage factor" means a GPU's acreage factor determined to the nearest hundredth of a unit by dividing the acreage assigned to the GPU by a number equal to the number of acres in a standard GPU for the pool. However, the acreage tolerance provided in Subparagraph (b) of Paragraph (1) of Subsection A of 19.15.8.21.12 NMAC shall apply.

**B.** "AD factor" means an acreage multiplied by the deliverability factor is calculated in pools in which acreage and deliverability are proration factors. The product obtained by multiplying the acreage factor by the calculated deliverability (expressed as MCF per day) for that GPU is known as the AD factor for that GPU. The AD factor is computed to the nearest whole unit.

**C.** "Allocation hearing" means a hearing the division holds twice each year to determine pool allocations for the ensuing allocation period.

**D.** "Allocation period" means a six-month period beginning at 7:00 a.m. April 1 and October 1 of each year.

**E.** "Balancing date" means the date beginning at 7:00 a.m. April 1 of each year; the 12 months following this date is the gas proration period.

**F.** "Broker" means a third party who negotiates contracts for purchase and resale.

**G.** "Classification period" means a three month period beginning at 7:00 a.m. on April 1, July 1, October 1 and January 1 of each year.

**H.** "Deliverability pressure" means the designated delivery pressure at which pipeline companies can accept gas from gas wells depending on the pipeline's capacity.

**I.** "Gas pool" means a pool that the division has designated as a gas pool after notice and hearing.

**J.** "Gas proration unit (GPU)" means the acreage allocated to a well, or in the case of an infill well or wells to a group of wells, for purposes of spacing and proration. A GPU may be either of a standard or nonstandard size as provided in 19.15.21 NMAC.

**K.** "Gas purchaser" means the purchaser (where the producer first exchanges ownership of the gas to the purchaser for an agreed value) of the gas from a gas well or GPU.

**L.** "Gas transporter" means a taker of gas, the party servicing the well meter or the party responsible for measuring the gas sold from the well or beneficially used off-lease. This could be at the wellhead, at any other point on the lease or at a division-authorized point where connection is made for gas transportation or utilization (other than is necessary for maintaining the well's producing ability). The gas transporter can be the gatherer,

transporter, producer or a delegate of one of those parties. The gas transporter shall be identified on form C-115 and shall be responsible for creating and maintaining form C-111 as required under 19.15.7.21 NMAC's provisions.

**M.** "Infill well" means an additional producing well on a GPU that serves as a companion well to an existing well on the GPU.

**N.** "Marginal GPU" means a proration unit that is incapable of producing or has not produced the non-marginal allowable based on pool allocation factors. Marginal GPUs do not accrue over or underproduction.

**O.** "Non-marginal GPU" means a proration unit receiving an allowable based upon pool allocation factors. Non-marginal proration units accrue over or underproduction.

**P.** "Overproduction" means the volume of gas produced on a GPU in a month greater than the assigned non-marginal allowable (does not include gas used in maintaining the GPU's wells' producing ability). Overproduction accumulates month to month during the proration period.

**Q.** "Prorated gas pool" means a gas pool in which, after notice and hearing, the division allocates production according to 19.15.21 NMAC and any applicable special pool orders.

**R.** "Proration period" means the 12-month period beginning April 1 of each year.

**S.** "Shadow allowable" means the gas volume calculated for a marginal GPU that is equal to the allowable assigned to a non-marginal GPU in the same pool of the same A (acreage) or A and AD (acreage deliverability) factors as the marginal GPU.

**T.** "Underproduction" means the volume of assigned non-marginal allowable not produced on a GPU. Underproduction accumulates month to month during the proration period.

[19.15.21.7 NMAC - Rp, 19.15.8.7 NMAC, 12/1/08]

**19.15.21.8 ALLOCATION OF GAS PRODUCTION:** When the division determines that allocation of gas production in a designated gas pool is necessary to prevent waste the division, after notice and hearing, shall consider the nominations of purchasers from that gas pool and other relevant data, fix the pool's allowable production and allocate production among the gas wells in the pool delivering to a gas transportation facility upon a reasonable basis and recognizing correlative rights. The division shall include in the pool's proration schedule gas wells that the division finds are being unreasonably discriminated against through denial of access to a gas transportation facility that is reasonably capable of handling the type of gas the wells produce.

[19.15.21.8 NMAC - Rp, 19.15.8.601 NMAC, 12/1/08]

**19.15.21.9 PRORATION PERIOD:** The proration period shall be at least six months and the division shall make the pool allowable and allocations of the pool allowable at least 30 days prior to each proration period.

[19.15.21.9 NMAC - Rp, 19.15.8.602 NMAC, 12/1/08]

**19.15.21.10 ADJUSTMENT OF ALLOWABLES:** When the actual market demand from an allocated gas pool during a proration period is more than or less than the allowable the division set for the pool for the period, the division shall adjust the gas proration unit allowables for the pool for the next proration period so that each gas proration unit has a reasonable opportunity to produce its fair share of the gas production from the pool and so that correlative rights are protected.

[19.15.21.10 NMAC - Rp, 19.15.8.603 NMAC, 12/1/08]

**19.15.21.11 GAS PRORATION UNITS:** Before issuing a proration schedule for an allocated gas pool, the division after notice and hearing shall fix the pool's gas proration unit.

[19.15.21.11 NMAC - Rp, 19.15.8.604 NMAC, 12/1/08]

**19.15.21.12 GAS PRORATION RULES:**

**A.** Well acreage and location requirements.

**(1)** Standard gas proration unit size and well spacing.

**(a)** Unless otherwise provided for in applicable special pool orders, operators shall drill gas wells in prorated gas pools according to the well spacing and acreage requirements contained in 19.15.21 NMAC provided that when an operator drills a well in a pool with 640 acre spacing, a government section shall comprise the proration unit.

**(b)** A GPU an operator drills according to Subparagraph (a) of Paragraph (1) of Subsection A of 19.15.21.12 NMAC that contains acreage within the tolerances below is a standard GPU for calculating allowables:

Standard Proration Unit	Acreage Tolerance
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160 acres	158-162 acres
320 acres	316-324 acres
640 acres	632-648 acres

(2) Nonstandard gas proration units.

(a) The district supervisor of the appropriate division district office may approve a nonstandard GPU without notice and hearing when the GPU's unorthodox size and shape is necessitated by a variation in the legal subdivision of the United States public land surveys and the nonstandard GPU is not less than 75 percent nor more than 125 percent of a standard GPU by accepting a form C-102 land plat from the operator showing the proposed nonstandard GPU with the number of acres contained in the proposed nonstandard GPU, and shall assign an allowable to the nonstandard GPU based upon the acreage factor for that acreage.

(b) The division may approve nonstandard proration units and unorthodox locations according to applicable special pool orders or division rules.

**B. Nominations.**

(1) Gas purchasers or gas transporters shall nominate. Each gas purchaser or each gas transporter shall file with the division its nomination for the amount of gas that it in good faith desires to purchase or expects to transport during the ensuing allocation period from each gas pool 19.15.21 NMAC regulates. The purchaser may delegate the nomination responsibility to the transporter, operator or broker by notifying the division's Santa Fe office. The purchaser shall submit the nomination for each pool to the division's Santa Fe office on form C-121-A by the first day of the month during which the division will consider at its allocation hearing the nominations for the succeeding allocation period. The division shall consider at its allocation hearing the nominations received, actual production and other factors the division deems applicable in determining the amount of gas that may be produced without waste during the ensuing allocation period.

(2) The director may suspend Subsection B of 19.15.21.12 NMAC whenever it appears that the nominations are of little or no value.

(3) Schedule. The division shall issue a gas proration schedule for each allocation period showing the monthly allowable for each GPU that the operator may produce during each month of the ensuing allocation period, each GPUs' current classification and other information as is necessary to show the allowable production status of each GPU on the schedule. The division may issue supplemental proration schedules during an allocation period as necessary to show changes in GPU classification, adjustments to allowables due to changes in market conditions or to reflect other changes the division deems necessary.

(4) Proration of all gas wells within a pool. The division shall include in the proration schedule the gas wells, in the gas pools 19.15.21 NMAC regulates, delivering to a gas transporter, and shall include in the proration schedule wells that the division finds are being unreasonably discriminated against through denial of access to a gas transportation facility, which are reasonably capable of handling the type of gas the wells produce.

**C. Allocation and granting of allowables.**

(1) Filing of form C-102 and form C-104 required. The division shall not assign a GPU an allowable before receipt of form C-102 and the approval date of form C-104.

(2) How allowables are calculated. The total allowable to be allocated to each gas pool for each allocation period shall equal the estimated market demand as the division determines, plus any adjustments the director deems necessary to equate the total pool allowable to the estimated market demand. The director may make adjustments the director deems necessary to compensate for overproduction, underproduction and other circumstances that may necessitate the adjustment to equate the pool allowable to the anticipated market demand. The director shall establish estimated market demand for each pool from any information the director requires and can consist of nominations from purchasers, transporters or other parties having knowledge of market demand for gas from the pools, actual past production figures, seasonal trends or any other factors the director deems necessary to establish estimated market demand. The director is not required to use all the information requested and can establish market demand by any method the director approves. The division shall assign a monthly allowable to each GPU entitled to an allowable for the ensuing allocation period by allocating the pool allowable among all such GPUs in that pool according to the procedure set forth in 19.15.21 NMAC. Should market conditions indicate a change is necessary, the director may adjust allowables up or down during the six-month allocation period using a maximum of 10 percent as a guideline.

(3) Marginal GPU allowable. The monthly allowable the division assigns to each marginal GPU shall equal the marginal GPU's average monthly production from its latest classification period.

(4) Non-marginal GPU allowable. The division shall determine non-marginal GPU allowables in conformance with the applicable special pool orders.

(a) In pools where acreage is the only proration factor, the division shall allocate the total non-

marginal allowables to each GPU in the proportion that each GPU acreage factor bears to the total acreage factor for all non-marginal GPUs.

(b) In pools where acreage and deliverability are proration factors:

(i) the division shall allocate a percentage as set forth in special pool orders of the non-marginal allowable to each GPU in the proportion that each GPU's AD factor bears to the total AD factor for all non-marginal GPU's in the pool; and

(ii) the division shall allocate the remaining non-marginal allowable to non-marginal GPUs among each GPU in the proportion that each GPU's acreage factor bears to the total acreage factor for all non-marginal GPUs in the pool.

(5) New connects assignment of allowables. Allowables to newly completed gas wells shall commence, in pools where acreage is the only proration factor, on the date of first delivery of gas to a gas transporter as demonstrated by an affidavit the transporter furnishes to the appropriate division district office or the approval date of form C-102 and form C-104, whichever is later.

(6) Gas charged against GPU's allowable. Except as provided in the special pool orders, the operator shall charge the volume of produced gas sold or beneficially used other than lease fuel from each GPU against the GPU's allowable; however, the operator shall not charge the gas it uses in maintaining the well's producing ability against the allowable.

(7) Change in acreage. If an operator requests to change the acreage assigned to a GPU, the operator shall file form C-102 with the appropriate division district office. The revised allowable, as the division determines, assigned to the GPU shall be effective on the first day of the month following the division's receipt of the notification.

(8) Minimum allowables. After notice and hearing, the division may assign minimum allowables for prorated gas pools to avoid waste, encourage efficient operations and to prevent wells' premature abandonment. (See special pool orders for minimum allowable amount.) In determining the volume of minimum allowable for a well with a standard proration unit, the division shall take into account economic and engineering factors such as drilling and operating costs, anticipated revenues, taxes and any similar data that establish that the ultimate recovery of hydrocarbons will increase from the pool because of the adoption of a minimum allowable for the pool. Once adopted, the division shall proportionally adjust minimum allowable for wells with nonstandard proration units.

(9) Deliverability tests. In pools where acreage and deliverability are proration factors, an operator shall test wells on non-marginal GPUs in accordance with division rules and the division shall use the test results in calculating deliverabilities for the succeeding proration period. The operator shall test wells on GPUs reclassified to non-marginal within 90 days of the order and thereafter in accordance with the appropriate testing schedule for the pool. Wells on marginal GPUs are exempt from deliverability testing.

**D. Balancing of production.**

(1) Underproduction. A non-marginal GPU that has an underproduced status as of the end of a gas proration period may carry the underproduction forward in the next gas proration period and may produce the underproduction in addition to the allowable assigned during the succeeding period. The division shall cancel an underproduction carried forward into a gas proration period and remaining unproduced at the end of the gas proration period.

(2) Balancing underproduction. Production during any one month of a gas proration period greater than the allowable the division assigned to a GPU for such a month shall be applied against the underproduction carried into such a period in determining the amount of allowable, if any, to be canceled.

(3) Overproduction. A GPU that has an overproduced status as of the end of a gas proration period shall carry the overproduction forward into the next gas proration period. The overproduction shall be made up by underproduction during the succeeding gas proration period. The division shall shut-in a GPU that has not made up the overproduction carried into a gas proration period by the end of the period until the overproduction is made up.

(a) Twelve-times overproduced, northwest. For the prorated gas pools of northwest New Mexico, if the division determines that a GPU is overproduced in an amount exceeding 12 times its current year January allowable (or, in the case of a newly connected well, a marginal well or a well recently reclassified as non-marginal, 12 times the January allowable assigned to a non-marginal GPU of similar acreage and deliverability factors), it shall be shut in until its overproduction is less than 12 times its January allowable, as determined hereinabove.

(b) Six-times overproduced, southeast. For the prorated gas pools of southeast New Mexico, if the division determines that a GPU is overproduced in an amount exceeding six times its current year January allowable (or, in the case of a newly connected well, a marginal well or a well recently reclassified as non-marginal, six times the January allowable assigned to a non-marginal GPU of a similar acreage factor), the division shall shut-

in the GPU until its overproduction is less than six times its January allowable, as determined in Subsection C of 19.15.21 NMAC.

(4) Exception to shut in for overproduction. The director may permit a GPU that is subject to shut-in pursuant to Paragraph (3) of Subsection D of 19.15.21.12 NMAC to produce up to 250 MCF of gas per month upon the operator's proper showing to the director that complete shut-in would cause undue hardship, provided however, the director may rescind permission for a GPU produced greater than the monthly rate the director.

(5) Balancing overproduction. Allowable assigned to a GPU during a one month of a gas proration period greater than the production for the same month shall be applied against the overproduction chargeable to the GPU in determining the overproduction that must be made up pursuant to the provisions of Paragraph (3) of Subsection D of 19.15.21.12 NMAC above.

(6) Exception to balancing overproduction. The director may allow the operator to make up overproduction at a lesser rate than permitted under Paragraph (3) of Subsection D of 19.15.21.12 NMAC upon the operator's showing at public hearing that the lesser rate is necessary to avoid material damage to the well.

(7) Hardship gas wells. If a GPU containing a hardship gas well is overproduced, the operator shall take the necessary steps to reduce production in order to reduce the overproduction. An overproduction existing at the time of a well's designation as a hardship gas well or accruing to the GPU after the designation shall be carried forward until it is made up by underproduction. The division shall not permit a GPU containing a hardship gas well, which GPU is overproduced, to produce at a rate higher than the minimum producing rate the division authorized.

(8) Moratorium on shut-ins. The director may grant a pool-wide moratorium of up to three months as to the shutting in of gas wells in a pool during periods of high demand emergency upon the operator's proper showing that the emergency exists, and that a significant number of the wells in the pool are subject to shut-in pursuant to the provisions of Paragraph (3) of Subsection D of 19.15.21.12 NMAC. The director shall not grant a moratorium beyond three months except after notice and hearing.

(9) The director may reinstate allowable to wells that suffered cancellation of allowable under Paragraph (1) of Subsection D of 19.15.21.12 NMAC or Paragraph (3) of Subsection E of 19.15.21.12 NMAC or loss of allowable due to reclassification of a well under Paragraph (2) of Subsection E of 19.15.21.12 NMAC if the cancellation or loss of allowable was caused by non-access or limited access to the average market demand in the pool rather than inability of the well to produce. Upon petition, with a showing of circumstances that prevented production of the non-marginal allowable, and evidence that the well was capable of producing at allowable rates during the period for which reinstatement is requested, the allowable may be reinstated in such amounts needed to avoid curtailment or shut-in of the well for excessive overproduction. The division may approve the petition administratively or docket the petition for hearing within 30 days after receipt in the division's Santa Fe office.

**E. Classification of GPUs.**

(1) Reclassification by the director. The director may reclassify a marginal or non-marginal GPU anytime the GPUs producing ability justifies reclassification. The director may suspend the reclassification of GPUs on the director's own initiative, or upon an affected interest owner's proper showing, if it appears that the suspension is necessary to permit underproduced GPUs, which would otherwise be reclassified, a proper opportunity to make up the underproduction.

(2) Reclassification to marginal. The director may reclassify a non-marginal GPU as marginal in either of the following ways.

(a) After the production data is available for the last month of each classification period, the director may reclassify a GPU that had an underproduced status at the beginning of the allocation period to marginal if its highest single month's production during the classification period is less than its average monthly allowable during the period. However, the operator of a GPU so classified, or other affected interest owner, shall have 30 days after receipt of notification of marginal classification in which to submit satisfactory evidence to the division that the GPU is not of marginal character and should not be so classified.

(b) The director may reclassify a GPU that is underproduced more than the overproduction limit as described in Paragraph (3) of Subsection D of 19.15.21.12 NMAC as marginal.

(3) Cancellation of underproduction for marginal GPU. The division shall not permit a GPU that is classified as marginal to accumulate underproduction, and shall cancel an underproduction accrued to a GPU before its classification as marginal.

(4) Reclassification to non-marginal. If, at the end of a classification period, a marginal GPU has produced more gas during the proration period to that time than its shadow allowable for that same period, the division shall reclassify the GPU as a non-marginal GPU.

(5) Reinstatement of status. The division shall reinstate to a GPU reclassified to non-marginal under the provisions of Paragraph (4) of Subsection E of 19.15.21.12 NMAC all underproduction that accrued or would

have accrued as a non-marginal GPU from the current proration period. The division may reinstate underproduction from the prior proration period after notice and hearing. Uncompensated-for overproduction accruing to the GPU while marginal shall be chargeable upon reclassification to non-marginal.

**F.** Reporting of production - C-111 and C-115 reports. Transporters and operators shall create and maintain for division inspection or file, as applicable, gas transportation and production reports pursuant to 19.15.7.21 NMAC and 19.15.7.24 NMAC provided that upon the director's approval as to the specific program to be used, a producer or transporter of gas may report metered production of gas on a chart-period basis; provided the following provisions apply to each gas well:

- (1) reports for a month shall include not less than 24 or more than 32 reported days;
- (2) reported days may include as many as the last seven days of the previous month but no days of the succeeding month; and
- (3) the total of the monthly reports for a year shall include not less than 360 or more than 368 reported days.

**G.** For purposes of Subsection F of 19.15.21.12 NMAC, the term "month" means "calendar month" for those reporting on a calendar month basis, and means "reporting month" for those reporting on a chart-period basis according to the exception provided in Subsection F of 19.15.21.12 NMAC.  
[19.15.21.12 NMAC - Rp, 19.15.8.605 NMAC, 12/1/08]

### **19.15.21.13 TESTS AND TEST PROCEDURES FOR PRORATED POOLS IN NORTHWEST NEW MEXICO:**

**A.** Type of tests required for wells completed in prorated gas pools.

(1) Reclassified GPUs. An operator of a well on a GPU that the director has reclassified as non-marginal shall conduct deliverability tests on that well within 90 days of the order reclassifying it, unless there are current tests on file with the division or that order requires a new test. A current test is a test that was conducted during the last test period for that pool or later.

(2) Non-marginal GPUs. Operators shall conduct deliverability tests on wells on non-marginal GPUs every five years. If the division determines that a well's test data and production data warrant more frequent testing of the well, the division may set up special testing schedules for that well.

(3) Scheduling of tests.

(a) Notification of pools to be tested. By September 1 of each year the division's Aztec district office shall notify operators of non-marginal GPUs if their wells will be tested during the following test period.

(b) The operators shall file the results of all deliverability tests required with the Aztec district office within 90 days following the completion of each test. Provided however, that a test completed between December 31 of the test year and March 10 of the following year is due no later than March 31. The division shall not grant an extension of time for filing tests beyond March 31 except after notice and hearing.

(c) The operator's failure to file a test within the above-prescribed times subjects the GPU to the loss of one day's allowable for each day the test is late.

(d) A well scheduled for testing during its test year may have the conditioning period, test flow period and part of the seven-day shut-in period conducted in December of the previous year provided that, if the seven-day shut-in period immediately follows the test flow period, the operator shall measure the seven-day shut-in pressure in January of the test year. The earliest date that a well can be scheduled for a deliverability test is such that the test flow period would end on December 25 of the previous year.

(e) Downhole commingled wells are to be scheduled for tests on dates for the pool of the well's lowermost prorated completion.

(f) In the event the division shuts-in a well for overproduction, the operator may produce the well for a period of time to secure a test after written notification to the division. The operator shall use gas produced during this testing period in determining the well's over/under produced status.

(g) An operator may schedule a well for a deliverability retest upon notification to the Aztec district office at least 10 days before the operator will commence the test. The retest shall be for substantial reason and is subject to the division's approval. The operator shall conduct a retest in conformance with the deliverability test procedures of 19.15.21.13 NMAC. The division may require the retesting of a well by notification to the operator to schedule the retest. The operator shall identify these tests, as filed on form C-122-A, as "RETEST" in the remarks column.

(4) Witnessing of tests. Any or all of the following may witness a deliverability test: a division representative, an offset operator, a representative of the gas transportation facility connected to the well under test or a representative of the gas transportation facility taking gas from an offset operator.

**B.** Procedure for testing.

(1) The test shall begin by producing a well in the normal operating manner into the pipeline through either the casing or tubing, but not both, for a period of 14 consecutive days. This is known as the conditioning period. The operator shall not change the production valve and choke settings during either the conditioning or flow periods, except during the first 10 days of the conditioning period when maximum production would over-range the meter chart or location production equipment. The first 10 days of the conditioning period shall not have more than 48 hours of cumulative interruptions of flow. The 11th to 14th days, inclusive of the conditioning period, shall have no interruptions of flow. An interruption of flow that occurs as the well's normal operation as stop-cock flow, intermittent flow or well blow down shall not be counted as shut-in time in either the conditioning or flow period.

(2) The operator shall determine daily flowing rate from an average of seven or eight consecutive producing days, following a minimum conditioning period of 14 consecutive days of production. This is known as the flow period.

(3) The operator shall measure instantaneous pressure by a deadweight gauge or other division-approved method during the seven-day or eight-day flow period at the casinghead, tubinghead and orifice meter, and record it along with instantaneous meter-chart static pressure reading.

(4) If a well is producing through a compressor that is located between the wellhead and the meter run, the operator shall report the meter run pressure and the wellhead casing pressure and the wellhead tubing pressure on form C-122-A. Neither the suction pressure nor the discharge pressure of the compressor is considered wellhead pressure. The operator shall enter a note in the remarks portion on form C-122-A stating: "This well produced through a compressor".

(5) When it is necessary to restrict the flow of gas between the wellhead and the orifice meter, the operator shall determine the ratio of the downstream pressure, psi absolute, to the upstream pressure, psi absolute. When this ratio is 0.57 or less, the operator shall consider critical flow conditions to exist across the restriction.

(6) When more than one restriction between the wellhead and the orifice meter causes the pressures to reflect critical flow between the wellhead and the orifice meter, the operator shall measure the pressures across each of these restrictions to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the operator shall report the pressures taken to disprove the critical flow to the division on form C-122-A in item (n) of the form. When critical flow conditions exist, the operator shall measure the instantaneous flowing pressures required in Paragraph (3) of Subsection B of 19.15.21.13 NMAC during the last 48 hours of the seven-day or eight-day flow period.

(7) When critical flow exists between the wellhead and the orifice meter, the operator shall use the measured wellhead flowing pressure of the string through which the well flowed during the test as  $P_i$  when calculating the static wellhead working pressure ( $P_w$ ) using the method established in Paragraph (9) of Subsection B of 19.15.21.13 NMAC

(8) When critical flow does not exist at any restriction,  $P_i$  shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

(9) The operator shall calculate the static wellhead working pressure ( $P_w$ ) of a well under test seven-day or eight-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated seven-day or eight-day average static casing pressure if the well is flowing through the tubing. The operator shall calculate the static wellhead working pressure ( $P_w$ ) by applying the tables and procedures set out in the Gas Well Testing Manual for Northwest New Mexico available from the division.

(10) To obtain the shut-in pressure of a well under test, the operator shall shut-in the well some time during the current testing season for a period of seven to 14 consecutive days, which have been preceded by a minimum of seven days of uninterrupted production. The operator shall measure the shut-in pressure on the seventh to 14th day of shut-in of the well with a deadweight gauge or other division-approved method. The operator shall measure the seven-day shut-in pressure on both the tubing and the casing when communication exists between the two strings. The operator shall use the higher of such pressures as  $P_c$  in the deliverability calculation. When the division determines a shut-in pressure to be abnormally low or the well can not be shut-in due to "HARDSHIP" classification, the operator shall determine the shut-in pressure to be used as  $P_c$  by one of the following methods:

- (a) a division-designated value;
- (b) an average shut-in pressure of all offset wells completed in the same zone; offset wells include the four side and four corner wells, if available; or
- (c) a calculated surface pressure based on a calculated bottom hole pressure; the operator shall make the calculations in accordance with the examples in the "Gas Well Testing Manual for Northwest New Mexico".

(11) The operator shall take all wellhead pressures, as well as the flowing meter pressure tests that are

to be taken during the seven-day or eight-day deliverability test period in Subsection B of 19.15.21.13 NMAC, with a deadweight gauge or other division-approved method. The operator shall record and maintain the pressure readings and the date and time according to the chart in the operator's records with the test information.

(12) The operator shall change and arrange orifice meter charts to reflect upon a single chart the flow data for the gas from each well for the full seven-day or eight-day deliverability test period; however, the division shall not void a test if the operator satisfactorily explains the necessity for using test volumes through two chart periods. The operator shall make corrections for pressure base, measured flowing temperature, specific gravity and supercompressibility, provided however, if the specific gravity of the gas from a well under test is not available, the operator may assume an estimated specific gravity for the well, based upon that of gas from nearby wells, the specific gravity of which has been actually determined by measurement.

(13) The purchasing company that integrates the flow charts shall determine the average flowing meter pressure for the seven-day or eight-day flow period and the corrected integrated volume and furnish them to the operator or testing agency.

(14) The operator shall calculate the seven-day or eight-day flow period volume from the integrated readings as determined from the flow period orifice meter chart. The operator shall divide volume calculated by the number of testing days on the chart to determine the average daily rate of flow during the flow period. The flow period shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The operator shall correct the volume used in this calculation to the division's standard conditions of 15.025 psi absolute pressure base, 60 degrees fahrenheit temperature base and 0.60 specific gravity base.

(15) The operator shall calculate the daily volume of flow, as determined from the flow period chart readings, by applying the basic orifice meter formula or other acceptable industry standard practices.

$$Q = C' (h_w P_f)^{.5}$$

Where:

Q = metered volume of flow MCFD @ 15.025 psi absolute, 60 degrees fahrenheit and 0.60

specific gravity.

C' = the 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity and supercompressibility.

$h_w$  = daily average differential meter pressure from flow period chart.

$P_f$  = daily average flowing meter pressure from flow period chart.

(16) The basic orifice meter flow factors, flowing temperature factor and specific gravity factor shall be determined from the tables in the manual.

(17) The operator shall use the daily flow period average corrected flowing meter pressure, psi gauge, to determine the supercompressibility factor. The operator may obtain supercompressibility tables from the division.

(18) When the operator makes a supercompressibility correction for a gas containing either nitrogen or carbon dioxide in excess of two percent, the operator shall determine the gas' supercompressibility factors.

(19) The division may approve use of tables for calculating rates of flow from integrator readings that do not specifically conform to the division's *manual for back-pressure testing of natural gas wells* for determining the daily flow period rates of flow upon the operator's showing that the tables are appropriate and necessary.

(20) The operator shall correct the daily average integrated rate of flow for the seven-day or eight-day flow period for meter error by multiplication by a correction factor. The operator shall determine the correction factor by dividing the square root of the deadweight flowing meter pressure, psi absolute, by the square root of the chart flowing meter pressure, psi absolute.

(21) The operator shall calculate the deliverability of gas at the deliverability pressure of a well under test from the test data derived from the required tests using the following deliverability formula:

$$D = Q \left[ \frac{(P_c^2 - P_d^2)^n}{(P_c^2 - P_w^2)} \right]$$

Where:

D = deliverability MCFD at the deliverability pressure, ( $P_d$ ), (at standard conditions of 15.025 psi absolute, 60 degrees fahrenheit and 0.60 specific gravity).

Q = daily flow rate in MCFD, at wellhead pressure ( $P_w$ ).

$P_c$  = seven-day shut-in wellhead pressure, psi absolute.

$P_d$  = deliverability pressure, psi absolute, as defined above.

$P_w$  = average static wellhead working pressure, as determined from seven-day or eight-day flow period, psi absolute, and calculated from tables in the manual entitled Pressure Loss Due to Friction Tables for Northwest New Mexico.

n = average pool slope of back pressure curves as follows:



for pictured cliffs and shallower formations, 0.85; and  
for formations deeper than pictured cliffs, 0.75.

(Note: Special orders for any specific pool or formation may supersede the above values. Check special pool orders if in doubt.)

(22) The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value the division determines and announces periodically. The division shall make the determination after a study of the test data of the pool obtained during the previous testing season.

(23) The operator shall test downhole commingled wells in the test year for the pool of the well's lowermost prorated completion and shall use pool slope (n) and the lowermost pool's deliverability pressure. The operator shall use the total flow rate from the downhole commingled well to calculate a value of deliverability. For each prorated gas zone of a downhole commingled well the operator shall file a form C-122-A. Also, in the summary portion of that form all zones shall indicate the same data for line h, P<sub>c</sub>, Q, P<sub>w</sub> and P<sub>d</sub>. The value shown for deliverability (D) is that percentage of the well's total deliverability that is applicable to this zone. The operator shall place a note in the remarks column that indicates the percentage of deliverability to be allocated to this zone of the well.

(24) The division shall consider a test prescribed in 19.15.21 NMAC acceptable if the average flow rate for the final seven-day or eight-day deliverability test is not more than 10 percent in excess of any consecutive seven-day or eight-day average of the preceding two weeks. The division may declare a deliverability test not meeting this requirement and require the operator to re-test the well.

(25) The operator shall make charts relative to deliverability tests or copies of the charts available to the division upon its request.

(26) Operators shall use only testing agencies, whether individuals, companies, pipeline companies or operators, that maintain a log of all tests they have accomplished including all field test data. The operator shall maintain the data collected pursuant to tests Subsection B of 19.15.21.13 NMAC requires for a period of not less than two years plus the current test year.

(27) Forms C-122-A and C-122-B are adopted for use in the northwest New Mexico area in open form subject to modification by the division as experience may indicate desirable or necessary.

(28) The operator shall conduct and report deliverability tests for gas wells in formations in accordance with 19.15.21.13 NMAC. Provided, however, 19.15.21.13 NMAC is subject to a specific modification or change contained in special pool orders the division adopts for a pool after notice and hearing.

**C. Informational tests.**

(1) One-point back pressure test. The operator may take a one-point back pressure test on newly completed wells before their connection or reconnection to a gas transportation facility. This test is a required official test, but the operator may take the test for informational purposes. When taken, the operator shall take and report this test as prescribed in Paragraph (2) of Subsection C of 19.15.21.13 NMAC.

(2) Test procedure.

(a) The operator shall accomplish this test after a minimum shut-in of seven days. The operator shall measure the shut-in pressure with a deadweight gauge or other division-approved method.

(b) The flow rate shall be that rate in MCFD measured at the end of a three hour test flow period. The flow from the well shall be for three hours through a positive choke, which has a 3/4 inch orifice.

(c) The operator shall install a two-inch nipple that provides a mechanical means of accurately measuring the pressure and temperature of the flowing gas immediately upstream from the positive choke.

(d) The operator shall calculate the absolute open flow using the conventional back pressure formula as shown in the division's *manual for back-pressure testing of natural gas wells*.

(e) The operator shall report the observed data and flow calculations in duplicate on form C-122.

(f) Non-critical flow shall be considered to exist when the choke pressure is 13 psi gauge or less. When this condition exists the operator shall measure the flow rate with a pitot tube and nipple as specified in the division's *manual for back-pressure testing of natural gas wells* or in the division's manual of tables and procedure for pitot tests. The operator shall install the pitot test nipple immediately downstream from the 3/4-inch positive choke.

(g) The operator shall test a well completed with two-inch nominal size tubing (1.995-inch internal diameter) or larger through the tubing.

(3) The operator may conduct other tests for informational purposes prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval to conduct the other tests from the Aztec

district office. The Aztec district office shall base approval of these tests primarily upon the volume of gas to be vented.

[19.5.21.13 NMAC - Rp, 19.15.8.606 NMAC, 12/1/08]

**HISTORY of 19.15.21 NMAC:**

**History of Repealed Material:** 19.15.8 NMAC, Gas Proration and Allocation (filed 04/08/2003) repealed 12/1/08.

**NMAC History:**

19.15.8 NMAC, Gas Proration and Allocation (filed 04/08/2003) was replaced by 19.15.21 NMAC, Gas Proration and Allocation, effective 12/1/08.