

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

IN THE MATTER OF THE APPLICATION OF)
COLORADO NATURAL GAS, INC. FOR AN)
ORDER APPROVING A METER SAMPLING) Proceeding No. 18A-
PROGRAM PURSUANT TO RULE 4304(b)) 0810G
OF THE COMMISSION'S RULES)
REGULATING GAS UTILITIES AND)
PIPELINE OPERATORS, 4 CCR 723-4-)
4304(b) AND FOR A WAIVER OF RULE)
4304(d))

**STIPULATION AND SETTLEMENT AGREEMENT AMONG COLORADO NATURAL
GAS, INC., THE COLORADO OFFICE OF CONSUMER COUNSEL, AND TRIAL
STAFF OF THE COLORADO PUBLIC UTILITIES COMMISSION**

Come now, Colorado Natural Gas, Inc. ("CNG" or the "Company"), the Colorado Office of Consumer Counsel (the "OCC") and Trial Staff of the Colorado Public Utilities Commission ("Staff") (collectively, the "Settling Parties") and hereby submit this Stipulation and Settlement Agreement ("Settlement Agreement") for the purpose of resolving all issues which had been raised, or could have been raised, among the Settling Parties in this Proceeding.

The Settling Parties respectfully request that the Colorado Public Utilities Commission ("Commission") approve this Settlement Agreement.

I. Procedural History

1. On November 16, 2018, CNG filed with the Commission an Application requesting an Order approving a meter sampling program and waiver of Rule 4304(d) of the Rules Regulating Gas Utilities and Pipeline Operators (the "Gas Rules"). 4 CCR 723-4-4304(d).

2. On November 16, 2018, the Commission issued a Notice of Application Filed establishing deadlines for the filing of interventions and requests for a hearing. The deadline for interested persons to file appropriate pleadings to intervene was December 17, 2018. Both the OCC and Staff timely intervened in this Proceeding.

3. The Commission assigned this Proceeding to an administrative law judge (“ALJ”) for disposition. By Decision No. R19-0027-I, the ALJ established a prehearing conference for January 24, 2019 and directed the parties to consult prior to the prehearing conference with respect to a procedural schedule, hearing date, and other procedural matters and to present, if possible, a procedural schedule and hearing dates acceptable to all the parties.

4. The parties agreed on a procedural schedule which the ALJ adopted by Decision No. R19-0091-I. Pursuant to the procedural schedule, Direct Testimony on CNG’s behalf was due on or before February 13, 2019, and any stipulation or settlement agreement is due to the Commission on or before March 28, 2019.

5. After extensive negotiations, the Settling Parties arrived at this Settlement Agreement, which resolves all issues in this Proceeding.

II. The Settlement Agreement

6. The following section sets forth the negotiated resolution of the disputed issues among the Settling Parties. These agreements are all compromises of the Settling Parties’ positions and are specifically based upon the parties’ discussions in response to the Company’s Application for Approval of a Meter Sampling Program and related materials the Company provided to the other parties. In lieu of submitting Direct Testimony in this Proceeding, the Settling Parties recommend this Settlement Agreement

to the Commission for its consideration and the resolution of all issues which have been, or could have been, raised in this Proceeding. The Settling Parties submit this Settlement Agreement to the ALJ for his approval and for resolution of the issues in this Proceeding. The Settling Parties affirm that acceptance of this Settlement Agreement is in the public interest and that they will fully support the terms of this Settlement Agreement at any hearing scheduled in this Proceeding.

III. Settlement Terms

7. While meters have become more accurate with new technologies, testing standards have not kept pace with the increased accuracy. By this Settlement Agreement, CNG proposes to modernize its meter sampling program as described in Appendix A hereto. Under the program, CNG will test its meters as follows:

CNG will use a statistical sampling program to test diaphragm meters of up to 500 CFH as follows:

- AC-250 meters: Beginning after six years of service;
- AR-250 meters: Beginning after seven years of service;
- AL-425 meters: Beginning after eight years of service; and
- R-275 and R-415 meters: Beginning after ten years of service.

CNG will test all other meters as follows:

- Diaphragm meters over 500 CFH will be tested every five years after installation;
- Rotary meters will be tested every five years after installation; and

- Turbine meters will be spin-tested every year and flow-tested every five years after installation.

8. Appendix A hereto presents a formula-based meter sampling method that CNG will use to determine the number of meters to be tested in a particular year based upon the meter type. This method will usually result in a more manageable number of meters to be tested compared to the fixed periodic testing program provided for in the Commission's Rules.

9. The program employs quality control standards, principles and rules that are fully developed, widely recognized, and found in standard texts and statistical sampling tables. The program's sampling method is described in ANSI/ASQC Z1.4-2003(R 2013) (Sampling Procedures and Tables for Inspection by Attributes). Proper sample testing is considered an economical substitute for one hundred percent (100%) testing.

10. As part of this Settlement Agreement, CNG will report to the Staff and OCC on an annual basis the results of its meter sampling program, as described in Appendix A hereto. CNG will continue to provide such reports until it seeks and obtains from the Commission a modification or termination of its meter sampling program.

IV. General Terms and Conditions

11. Through active prehearing investigation and negotiation, the Settling Parties have negotiated this Settlement Agreement and Appendix A hereto resolving enumerated, contested and disputed issues in this Proceeding in a manner the Settling Parties agree is just and reasonable and in the public interest. This Settlement Agreement reflects a compromise in settlement of those issues among the Settling

Parties in this Proceeding. The Settling Parties further agree that reaching an agreement by means of negotiations, stipulations and/or settlement rather than through litigation is in the public interest and supported by the Commission pursuant to Rules 1407 and 1408 of the Commission's Rules of Practice and Procedure. This Settlement Agreement is intended to comply with the provisions of Rule 1408.

12. The Settling Parties agree to present, to support and to defend this Settlement Agreement before the Commission and in the Courts. They further agree to present testimony and exhibits in the evidentiary hearing in this Proceeding for the purposes of obtaining the Commission's approval of this Settlement Agreement should a hearing be held. This Settlement Agreement shall not become effective until the Commission issues a final order addressing the Settlement Agreement. If the Commission modifies this Agreement in a manner unacceptable to any Settling Party, that Settling Party may withdraw from the Settlement Agreement and shall so notify the Commission and the other Settling Parties in writing within 10 days from the date of the Commission order. If a Settling Party timely exercises its right to withdraw from this Settlement Agreement, this Settlement Agreement shall be null and void and of no effect in this or any other proceeding.

13. The Settling Parties agree the Commission's approval of this Settlement Agreement shall constitute a determination that the Settlement Agreement represents a just, equitable and reasonable resolution of the disputed issues resolved herein.

14. The Settling Parties agree that this Settlement Agreement represents a negotiated settlement that they believe is in the public interest with respect to the various matters and issues enumerated herein for the sole purposes of the settlement of the

matters agreed to in this Settlement Agreement. The Settling Parties shall not be deemed to have approved, accepted, agreed to or consented to any concept, theory or principle underlying or supposed to underlie any of the matters provided for in this Settlement Agreement other than as specifically provided for herein. Notwithstanding the resolution of the issues set forth in this Settlement Agreement none of the methods or principles herein contained shall be deemed by the Settling Parties to constitute a settled practice or precedent in any future proceeding.

15. This Settlement Agreement may be executed by counterparts and by facsimile, or electronic copies of signatures, all of which when taken together shall constitute the entire Settlement Agreement with respect to the matters herein.

IV. Conclusion

16. For the reasons stated above, Colorado Natural Gas, Inc., the Colorado Office of Consumer Counsel, and Trial Staff of the Colorado Public Utilities Commission respectfully request that the Commission enter an order approving this Settlement Agreement with the finding that the Commission's approval of this Settlement Agreement represents a fair, just and reasonable resolution of any and all disputes in this Proceeding as to those issues.

Respectfully submitted this 21st day of February 2019.

FAIRFIELD AND WOODS, P.C.

By: s/ Mark A. Davidson
Mark A. Davidson, No. 10364
1801 California Street, Suite 2600
Denver, CO 80202
(303) 830-2400
mdavidson@fwlaw.com

ATTORNEY FOR COLORADO
NATURAL GAS, INC.

PHILIP J. WEISER
ATTORNEY GENERAL

By: s/Gregory E. Bunker
Gregory E. Bunker, No. 24111
Senior Assistant Attorney General
Office of the Attorney General
1300 Broadway, 7th Floor
Denver, CO 80203
(720) 508-6212
gregory.bunker@coag.gov

ATTORNEYS FOR THE COLORADO
OFFICE OF CONSUMER COUNSEL

COLORADO OFFICE OF CONSUMER
COUNSEL:

By: s/Scott England
Scott England
Economist
Colorado Office of Consumer Counsel
1560 Broadway, Suite 200
Denver, CO 80202
Scott.England@state.co.us

COLORADO PUBLIC UTILITIES
COMMISSION

By: s/Jason Peuquet
Jason Peuquet
Senior Economist
Colorado Public Utilities Commission
1560 Broadway, Ste. 250
Denver, CO 80202
Jason.peuquet@state.co.us

COLORADO ATTORNEY GENERAL

By: s/Anne Botterud
Anne Bottrud
First Assistant Attorney General
Office of the Attorney General
1300 Broadway
Denver, CO 80203
Anne.botterud@coag.gov

APPENDIX A

METER SAMPLING PROGRAM

1. INTRODUCTION

Colorado Natural Gas, Inc. (“CNG”) will implement a Meter Sampling Program, using fully developed and widely recognized quality control standards, principles and rules, to test in-service gas meters as described herein.

The standards, principles and rules for testing may be found in standard texts and statistical sampling tables. Details of the method are described in ANSI/ASQC Z1.4-2003(R 2013), which is the “attributes sampling technique.” Proper sample testing is an economical substitute for one hundred percent (100%) testing.

2. DEFINITIONS

- A. **Acceptable Quality Limit (AQL)** – a statistically based acceptance criteria for the maximum percentage or proportion of nonconforming units in a lot that can be considered satisfactory as a process average. (See ANSI/ASQC Z1.4-2003(R 2013))
- B. **Check Flow** – the measured flow rate at twenty percent (20%) to forty percent (40%) of the meter’s rated nameplate capacity.
- C. **Check Test** – the test of a gas meter at the Check Flow rate
- D. **Group** – Meters of a similar manufacturer and model.
- E. **Intest** – The test results obtained when testing a gas meter as it was received in the testing facility from the field. These are the test results before any repairs or adjustments have been made.
- F. **Lot** – Meters of the Group with the same set year.
- G. **Meter** – a device used to measure the flow of gas.
- H. **Meter Code** – a CNG unique identifier used to specify a meter’s size as determined by the manufacturer.
- I. **Meter Set Date** - the date indicated in the Company’s CIS system when the meter was installed at a customer location.

- J. **Open Flow** – the measured flow rate at eighty percent (80%) to one hundred twenty percent (120%) of the meter’s rated nameplate capacity.
- K. **Open Test** – The test of a gas meter at the Open Flow rate.
- L. **Percent Accuracy** – the ratio comparison of the registered volume of a meter under test to the registered volume of a standard.
- M. **Random** – a statistical method of sampling that ensures that each member of a population has the same probability of being selected as any other member.
- N. **Set Year** – the calendar year during which a meter was installed for a customer.
- O. **Specification Limits** – limits that define the conformance boundaries for the registration accuracy of individual meters. These limits are plus or minus two percent ($\pm 2\%$) of one hundred percent (100%) accuracy.
- P. **Sub-Lot** – a subset of a Lot consisting of meters with a common characteristic such as a manufacturer’s defect or similar geographic location.
- Q. **Year of Purchase** – the calendar year in which a meter was purchased from a manufacturer.
- R. **Years in Service** - the number of years between the year a meter was set and the year it was removed.
- S. **Years of Service** – the number of years between the year a meter was manufactured and the current year

3. **PURPOSE**

The purpose of the CNG gas meter sample testing plan is:

- A. To determine the quality level of each meter lot by providing a reliable percentage estimate of the meters in each lot lying outside the specification limits for registration accuracy.
- B. To provide information relating to the performance of various meter lots when meter accuracy does not meet the specified quality level and thus provide the basis for repair and recalibration or planned retirement of those meters that are nonconforming.

4. PROGRAM

- A. The meter sampling test program will use the guidelines set forth in ANSI/ASQ Z1.4 (inspection for attributes) Single Sampling Plans for Normal Inspection. The AQL will be not more than 6.5% of meters in the sample deviating from 100% accuracy by more than +/- 2%.
- B. The Meter Sampling Test Program will begin June 18, 2019.
- C. After installation, natural gas meters will be removed and tested, by meter group, using the following schedule:
 - i. AC-250 meters: beginning after 6 years of service.
 - ii. AR-250 meters: beginning after 7 years of service.
 - iii. AL-425 meters: beginning after 8 years of service.
 - iv. R-275 and R-415 meters: beginning after 10 years of service.
 - v. Diaphragm meters over 500 CFH will be tested every 5 years after installation; rotary meters will be tested every 5 years after installation; and turbine meters will be spin tested every year, and flow tested every 5 years after installation.
- D. Years of service will be used to establish the initial interval by which a meter becomes eligible for testing, following the first meter set date. After a meter becomes eligible and has been selected for testing, removed from service, and returned to service (having been verified to be meet the accuracy and meter operation parameters), the new meter set date will initiate the years in service interval clock. The years in service, following the meters reset date, will be used to track all subsequent intervals, determining a meter's eligibility for testing under the program. Years of service is used to reflect the total number of years a meter has been in service, following its first deployment.

5. GENERAL METER TESTING PROCEDURES

Meters will be tested in accordance with the following:

- A. With the exception of those meters removed from service specifically for known leakage, damage, tampering, noise, or non-registration, and meters that have been selected for retirement, all meters removed from

service shall be tested for intest accuracy at both check flow and open flow prior to any adjustment or repair. The meter accuracy will be determined by the check flow test accuracy; this shall be referred to as the intest accuracy. The Company will maintain data associated with those meters which have been removed from service specifically for known leakage or non-registration so that any potential problems with certain meter types can be identified, even though the accuracy rate is acceptable.

- B. Meters shall be repaired as necessary and adjusted such that:
- The Check test Accuracy is within $\pm 1\%$
 - The Open test Accuracy is within $\pm 1\%$
 - The differential between the Open test Accuracy result and the Check test Accuracy result is within $\pm 1\%$ Accuracy

Records shall be maintained showing intest accuracy for each calendar year. When calculating the above accuracy categories, all fractions shall be rounded to the nearest tenth (0.05 and greater to be rounded up).

6. SAMPLING PROCEDURES

Meters shall be sample tested in accordance with the procedure described herein.

- A. Sampling will be in accordance with standard sampling plans as set forth in recognized statistical quality control standards. The size of the sample will depend on the size of the lot it will represent. An additional percentage of the meters needed for the sample shall be selected on a random basis as substitutes for damaged, non-registering, inaccessible, or otherwise invalid meters in the sample. All meters in the sample will be tested for their accuracy of registration, where test results are rounded to the nearest whole number (0.5 and greater to be rounded up).
- B. The AQL selected for this sampling plan will be six and one half percent (6.5%). For a sample group to pass, not more than six and one half percent (6.5%) of the sampled meters may deviate from one hundred

percent (100%) accuracy of registration by more than plus or minus two percent ($\pm 2\%$).

- C. If a lot fails the AQL, CNG will take the following steps to address the meter group:
- i. If a lot fails the AQL, CNG will remove all meters in that lot over a period not to exceed 5 years and it will replace or repair and recalibrate the meters before they can be reused. However, within a lot of meters, if a particular sub-lot can be identified for evaluation of test results that indicates an untimely performance degradation due to possible manufacturer's defect or geographical location, and is clearly not a condition brought on by age as compared to other members of the lot, the following action will be taken:
 1. The particular sub-lot will be further sampled as appropriate to verify above indications.
 2. If confirmed, an accelerated removal program of this particular sub-lot will be implemented within a time period not to exceed five years, which will include the replacement or repair and recalibration of the meters before they can be reused.
 3. In this instance the sub-lot is not indicative of the overall meter lot so the in-test accuracy data will be excluded from the analysis.
- D. For each lot, the maximum permissible sampling period will be limited to thirty (30) years.

7. **RANDOM SAMPLING**

CNG will select meters for testing utilizing the selection tools available in the Customer Information System.¹ In the event that additional meters need to be selected due to the lack of availability of certain meters, or meters are discovered to be unsuitable for the test lot, CNG will utilize the selection tools available in its

¹ The CIS system pulls meters for selection by meter ID order. Since meters are not generally installed in meter ID order, the Company believes this will generate a geographically representative sample.

CIS system to select additional meters, as necessary, to provide an adequate number of meters to complete a sample lot.

8. PLAN TO FIELD VERIFY METERS

As of the date of this Sampling Program, CNG is deploying resources to field verify meter data in conjunction with collecting GPS data on some meters and services. Meter data being verified includes meter manufacturer and model, number of dials, and meter serial number. CNG is currently able to identify certain meter model types by serial number ranges. This has reduced the number of unknown meter models in the statistical program to a small and manageable number.

9. REPORTING

CNG will maintain records of gas meter tests under this Sampling Program as required. In addition, no later than March 15 of each year, CNG will file an annual report with the Commission which will include, but not be limited to, identification and test results of each lot, evaluation and analysis of the data, and any corrective action taken (“Annual Meter Sampling Program Report”). CNG will analyze the annual meter test results and meter test intervals included in this application. Should test interval adjustments be appropriate, CNG will apply for revised testing intervals by filing an amended application in this docket.