

NOTE: THIS MEASUREMENT PROCEDURE IS STANDARD LANGUAGE ATTACHED TO ALL GAS AGREEMENTS. AS SUCH, SOME PROVISIONS MAY NOT APPLY. ANY EXCEPTIONS TO THIS LANGUAGE MUST BE IN THE AGREEMENT.

EXHIBIT \_\_\_\_\_

**GAS MEASUREMENT PROCEDURES**

<b>Check one</b>	
	<b>As-Delivered Basis</b>
	<b>Dry Basis</b>

1. Acronyms and Definitions:

- a. **“AGA”** means the American Gas Association.
- b. **“Agreement”** means the agreement to which this Exhibit is attached.
- c. **“Agreement Effective Date”** means the effective date of the Agreement.
- d. **“ANSI”** means American National Standards Institute.
- e. **“API”** means American Petroleum Institute.
- f. **“ASTM”** means ASTM International.
- g. **“Btu”** means British thermal units, which is the amount of heat required to raise the temperature of one pound of water from 58.5 °F to 59.5 °F at a constant pressure of 14.73 psia.
- h. **“Barrel”** means forty-two (42) U.S. Gallons.
- i. **“Commercially Reasonable Efforts”** means, with respect to performance by either Party of the applicable obligations under this Exhibit, the efforts a reasonable person in such Party’s position would use to satisfy performance of any such obligations, but not obligating such Party to incur expenditures exceeding the amount a reasonable person would incur for performance of the applicable obligations under the circumstances. For clarity, the Parties expressly intend the obligation to utilize Commercially Reasonable Efforts requires a lesser effort on the part of the performing Party than the obligation to utilize “best efforts.” The Parties agree that an obligation to utilize “best efforts” means the performing Party must do essentially everything in its power to complete performance of the applicable obligations irrespective of the cost to the performing Party.”
- j. **“Customer”** means the customer (as defined in the Agreement), its affiliates, its designees, or its inspector.
- k. **“EGM”** means electronic gas measurement.
- l. **“Enterprise”** means the Enterprise Products Partners L.P. affiliate contracting in the Agreement or its designee.
- m. **“Exhibit”** means this exhibit.
- n. **“Force Majeure”** is defined in the Agreement.

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- o. **"Gas"** means any mixture of gaseous hydrocarbons, consisting essentially of methane and heavier hydrocarbons and inert and noncombustible gases that are extracted from the subsurface of the earth.
  - p. **"Gas Measurement Policy"** means the Enterprise measurement guidance document (a copy of which is available upon request) specifying how Gas custody quality measurement systems are to be designed, installed, operated, and maintained.
  - q. **"GPA"** means GPA Midstream.
  - r. **"Gross Heating Value"** means, for Gas, the total or gross Btus produced by the combustion with oxygen, at constant pressure, of the amount of Gas that would occupy a volume of one cubic foot under Standard Conditions and under standard gravitational force with air of the same pressure and temperature as the Gas, when the products of combustion are cooled to the initial temperature of the Gas and air and when the water formed by combustion is condensed to the liquid state.
  - s. **"Ideal Gas Laws"** means the thermodynamic laws applying to perfect gases.
  - t. **"Law"** is defined in the Agreement.
  - u. **"Mcf"** means 1,000 cubic feet under Standard Conditions.
  - v. **"Measurement Procedures"** means this Exhibit.
  - w. **"MMB"** means Enterprise Measurement and Material Balance.
  - x. **"MMBtu"** means 1,000,000 Btus.
  - y. **"MMcf"** means 1,000,000 cubic feet under Standard Conditions.
  - z. **"MPMS"** means the API Manual of Petroleum Measurement Standards.
  - aa. **"Party"** or **"Parties"** refers to Enterprise and/or the Customer, as the case may be.
  - bb. **"Plant"** has the meaning set forth in the Agreement.
  - cc. **"Plant Fuel"** has the meaning set forth in the Agreement.
  - dd. **"Point of Measurement"** has the meaning set forth in the Agreement.
  - ee. **"psia"** means pounds per square inch absolute.
  - ff. **"psig"** means pounds per square inch gauge.
  - gg. **"Requesting Party"** means the Party requesting the applicable data.
  - hh. **"Residue Gas"** has the meaning set forth in the Agreement.
  - ii. **"SCADA"** means supervisory control and data acquisition.
  - jj. **"Sending Party"** means the Party providing the applicable data.
  - kk. **"Standard Conditions,"** unless otherwise specified in the Agreement, means a base pressure of 14.73 psia and a base temperature of 60 °F.
2. Measurement Responsibilities
- a. Enterprise shall perform, or cause to be performed, all measurement activities hereunder. For deliveries by Customer to Enterprise, Customer shall deliver at its sole cost and expense, Customer's Gas to Enterprise in a manner that allows for proper measurement. To the extent this Exhibit creates an obligation on Enterprise related to equipment owned or operated by a third party, Enterprise

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shall use Commercially Reasonable Efforts to cause the applicable third party to perform in accordance with this Exhibit.

- b. Unless otherwise agreed to in writing by the Parties, Enterprise’s measurements will be the measurement of record and will be conclusively binding, unless reasonably proven to be in error.
3. Measurement Equipment.
- a. Enterprise shall install, maintain, and operate meters and/or other necessary equipment for measurement of the following as applicable to the Agreement:

Item	Volume	Gross Heating Value	Plant Product Determination
Lean unprocessed Gas to Points of Measurement	X	X	N/A
Lean unprocessed Gas to processing	X	X	N/A
Rich unprocessed Gas to Points of Measurement	X	X	X
Rich unprocessed Gas to processing	X	X	X
Unprocessed lean fuel used as Plant Fuel	X	X	N/A
Unprocessed rich fuel used as Plant Fuel	X	X	X
Unprocessed lean fuel as residue fuel	X	X	N/A
Unprocessed rich fuel as residue fuel	X	X	X
Transmission pipeline interconnect	X	X	N/A
Lean Gas gathering	X	X	N/A
Processed Gas used as Plant Fuel	X	N/A	N/A
Volume of each Plant product extracted from Gas delivered to the Plant for processing	X	N/A	N/A

4. Measurement Standards
- a. Enterprise’s intent is to design, operate, and maintain its custody transfer measurement facilities in a manner to meet or exceed the relevant criteria set

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out in AGA standards, the MPMS, GPA Midstream standards, ASTM standards, relevant governmental regulations, the Gas Measurement Policy, MMB standards, Enterprise Engineering standards, and other relevant Enterprise policies and standards.

Standards		
AGA	API MPMS Chapters	GPA Midstream
Report 3	5	2165
Report 7	14	2166
Report 8	21	2172
Report 9		8173
Report 11		8182
		8185

- b. Gas shall be measured by this Measurement Procedure using a flow meter approved by MMB.
  - c. All equipment employed in metering and sampling, and all equipment upstream and downstream of the measurement station that might affect quantity and/or quality determination, shall be approved as to the manufacturer, model, type, materials of construction, method of installation, and maintenance by MMB. Due consideration shall be given to the operating pressure, temperature, and other characteristics of the Product being measured.
  - d. Where EGM and flow computers are used, the Parties shall use and accept the electronic derivations, measurement, and calculations.
  - e. Enterprise reserves the right to implement any changes to these publications based on Enterprise's cost-benefit analysis of the change, the ready availability of equipment necessary to make the change, or such other assessment as Enterprise, in its sole discretion, may deem appropriate.
5. Measurement Factors.
- a. The unit of volume is one cubic foot of Gas under Standard Conditions.
  - b. The atmospheric pressure is assumed to be a constant, determined by elevation and specific site location, using the relevant state or federal agency's atmospheric table (e.g., Texas Railroad Commission's "County Atmospheric Table") regardless of the variations of such atmospheric pressure from time to time.
  - c. The unit of measurement for the purpose of receipt and delivery of Gas hereunder is the MMBtu. Enterprise shall determine the number of MMBtus

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delivered or received by multiplying the number of Mcf of Gas delivered or received by the Gross Heating Value of such Gas in Btus per cubic foot and multiplying by 0.001. For example, if the volume is 950 Mcf, and the Gross Heating Value is 1095 Btus/cubic foot, the total MMBtu is calculated thusly: 950 x 1095 x 0.001 equals 1,040.25 MMBtu.

- d. Enterprise shall:
  - i. Determine temperature by use of a recording thermometer or equivalent device so installed such that it may continuously record the temperature of Gas passing through the meter;
  - ii. Assure any electronic flow measurement includes temperature measurements made in accordance with MPMS Chapter 21;
  - iii. Determine the specific gravity by calculation from fractional analyses of samples taken at Enterprise’s measurement facilities;
  - iv. Make corrections for deviation from Ideal Gas Laws for all Gas metered hereunder as prescribed in the applicable standards; and
  - v. Use the records of temperature, the factor for specific gravity, and the corresponding correction for deviation from Ideal Gas Laws applicable during each day to make computations of volumes hereunder.

6. Measurement Accuracy Verification

- a. Enterprise shall verify the accuracy of the measurement facilities (which includes sampling) specified herein according to the following table:

<b>MCFD</b>	<b>Calibration Frequency</b>
Meters greater than 1,000	Monthly
Meters 501 to 1,000	Quarterly
Meters 0 to 500	Semi-Annually

- b. Only Enterprise may perform the reading, calibration, and adjustment of all metering equipment. Enterprise shall give Customer reasonable notice, and Customer has the right to be present at the time of any sampling or testing done in connection with Enterprise’s measuring equipment hereunder. If present, Customer or its designee may sample Gas at this time. If, after notice, Customer fails to have a representative present, Enterprise does not need to wait for Customer’s personnel to be on-site, and the results of the tests are, nevertheless, deemed accurate until the next tests are made and, upon request by Customer, Enterprise shall furnish Customer a written copy of such test results. Except as provided in Special Tests, Enterprise is responsible for the costs of all tests of such measuring equipment.

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- c. The official EGM data from the measuring equipment remains the property of Enterprise, but upon request by the Customer, Enterprise shall submit its records and EGM data, together with calculations therefrom to Customer for inspection and verification, subject to their return to Enterprise.
- d. Special Tests: In the event Customer desires a special test (a test not scheduled by Enterprise under the provisions of this Exhibit of any measuring equipment, Enterprise shall give the Customer seventy-two (72) hours' advance notice of the test, and both Parties shall cooperate to secure a prompt test of the accuracy of such equipment. If the measuring equipment tested is found to be within the range of accuracy set forth in this Exhibit or if an inspection of the primary measurement equipment indicates no problems, the Customer shall pay the costs of such special test including any labor and transportation costs pertaining thereto. If a problem is determined to exist, Enterprise shall pay such costs, and corrections will be made according to the provisions of this Exhibit.

#### 7. Measurement Error

- a. If any of the measuring or test equipment is found to be out of service or registering inaccurately in any percentage, then Enterprise shall adjust it at once to read accurately, within the limits prescribed by the manufacturer. If such equipment is out of service or inaccurate by an amount exceeding 0.5% for ultrasonic and Coriolis meters, or 1% for all other meters, at a reading corresponding to the average rate of flow for the period since the last preceding test, then the Parties shall disregard the previous readings of such equipment for any period definitely known or agreed upon, or for a period of one-half of the time elapsed since the last test of measuring equipment affected, not to exceed forty-five (45) days. Enterprise shall estimate the volume measured during such period by using the following in the order listed:
  - i. Using the data recorded by any check measuring equipment if installed and registering accurately;
  - ii. Using the data recorded by parallel measuring equipment if installed and registering accurately;
  - iii. Correcting the error if the percentage of error is ascertainable by calibration, test, or mathematical calculation; or
  - iv. Estimating the quantity, volume, or quality measured, based upon deliveries under similar conditions during a period when the equipment was registering accurately.
- b. Enterprise shall not be required to make corrections for recorded inaccuracies over the period of time in question:
  - i. of 0.5% or less for ultrasonic and Coriolis meters; or
  - ii. 1% or less for all other meters.

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8. Customer's Right of Inspection

- a. Upon reasonable notice and at all times during business hours, Customer may inspect measurement equipment installed by Enterprise, and other measurement or testing data retained by Enterprise.
- b. Enterprise shall preserve all original test data, and other similar records for such period as required by the longer of, twenty-four (24) months, the Audit provisions of this Exhibit, or applicable Law.

9. Gross Heating Value Determination

- a. Enterprise shall determine the Gross Heating Value of Customer's Gas delivered hereunder each Month based on the most recent sample or by online chromatograph. The sample method and frequency will be dictated by Enterprise's most current Measurement Procedure and Gas Measurement Policy. Enterprise shall compute the Gross Heating Value from fractional analysis of the sample and apply the result to all subsequent deliveries of Customer's Gas until a new sample is taken. Enterprise shall determine the Gross Heating Value of Customer's Gas for the first month of deliveries after initial flow has begun from spot samples, which will be collected at each Point of Measurement as soon as reasonably practical after initial flow begins unless there is an online chromatograph in service at the Point of Measurement upon initial flow.
- b. As-Delivered Gas: Enterprise shall correct the Gross Heating Value to account for the actual as-delivered water content. Actual water content will not be directly measured at the Points of Measurement for the purposes of adjusting volume or Gross Heating Value. All Customer Gas will be assumed water-saturated at flowing conditions unless otherwise agreed upon. Enterprise shall correct the Gross Heating Value to account for the calculated amount of water in a water-saturated natural gas stream at measured flowing conditions (pressure and temperature) per applicable industry standards. No adjustment for water content will be made to the volume.
- c. Dry Gas: So long as the actual water vapor content of the delivered Gas is seven (7) pounds per MMcf or less, the delivered Gas is deemed to be dry and no correction for water vapor content will be applied.

10. Plant Product Determination

- a. Enterprise shall determine the quantity of Plant products contained in Customer's Gas delivered to Enterprise, Gas from other sources delivered to Enterprise for processing, Customer residue Gas, and Plant Fuel by a test conducted each month using the most recent sample. The sample method and frequency will be dictated by Enterprise's most current Measurement Procedures and Gas Measurement Policy.

11. Fractional Analysis

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- a. Enterprise shall perform fractional analysis of test samples at the laboratory of Enterprise's choosing, using gas chromatography equipment or such other method as be commonly used in the industry. Alternatively, Enterprise may use online chromatographs to determine the fractional analysis of the Gas. From such fractional analysis, Enterprise shall determine the composition in mole percent of each of the following chemical compounds:
  - i. Carbon dioxide
  - ii. Nitrogen
  - iii. Methane
  - iv. Ethane
  - v. Propane
  - vi. Iso-butane
  - vii. Normal butane
  - viii. Iso-pentane
  - ix. Normal pentane
  - x. Hexanes and heavier hydrocarbons.
- b. Enterprise shall compute the Gross Heating Value, specific gravity, Plant products content, and correction factors for deviation from Ideal Gas Laws from this fractional analysis of samples. Enterprise shall apply the results from these analyses to all subsequent deliveries until such time as new samples are obtained and analyzed. Enterprise shall furnish to Customer each such fractional analysis and Gross Heating Value.

#### 12. Installation and Operation of Check Meters

- a. Either Party may install, maintain, and operate, at its own expense, at or near the Point of Measurement, check meters and other necessary equipment by which the quantity of Gas may be measured, provided, however, such equipment shall be installed so as not to interfere with the operation of the primary metering facilities.
- b. The Parties shall exercise care in the installation, maintenance, and operation of check meters, pressure regulating equipment, and Gas compressor to prevent any inaccuracy in the determination of the quantity of Gas being measured.

#### 13. Access to Measurement Equipment

- a. Whenever any Point of Measurement is on the premises of one Party, the other Party shall have the right of free use and ingress and egress at all reasonable times for the purpose of installation, operation, repair, or removal of its own respective metering facilities at such Point of Measurement.
- b. In the event check measurement equipment is installed, the other Party shall have access to the same at all reasonable times, but the reading, calibration, and



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adjusting thereof shall be done only by the Party installing the check measurement.

- c. Customer shall ensure that any third-party operator of any Point of Measurement provide Enterprise the same rights granted by Customer under the above provisions of this Section with respect to such Point of Measurement.

#### 14. Data Exchange

- a. A Party (Requesting Party) may ask to have access to connect to the other Party's (Sending Party) monitoring equipment. If the Requesting Party requests such connection, the Sending Party shall allow the Requesting Party to make necessary connections and to acquire certain data agreed to by the Sending Party. The cost of connecting the Sending Party's monitoring equipment and communicating the data to the Requesting Party will be the responsibility of the Requesting Party. The Requesting Party will only have access to such electronic measurement data in a format established by the Sending Party which will not interfere with the operation of the Sending Party's facilities. The Requesting Party recognizes that the data acquired from electronic equipment is "raw" data, subject to further refinement, correction, and/or interpretation. The Sending Party shall have no obligation to provide data to the Requesting Party during times of maintenance, repair, or other activities by the Sending Party that interrupt operations and/or, due to event of Force Majeure. The Sending Party shall have no obligation to advise the Requesting Party of any such interruptions, or to otherwise in any way verify the integrity of such data at any time.
- b. At a minimum, the Sending Party will use Commercially Reasonable Efforts to make necessary connections to its electronic measurement equipment to provide the Requesting party the following:
  - i. Pressure
  - ii. Temperature
  - iii. Instantaneous flow and instantaneous energy
  - iv. Total flow today and total energy today
  - v. Total flow yesterday and total energy yesterday
  - vi. Flow control set point
  - vii. Flow control valve position
  - viii. Gas compositional data (including specific gravity)
  - ix. Such other data as the Parties may agree

#### 15. Audit

- a. Each Party and its duly authorized representatives shall have access to the accounting records and other documents maintained by the other Party which relate to the measurement, composition or handling of the Gas being delivered or received under this Agreement. Each Party may audit such records once a

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year at any reasonable time or times within twenty-four (24) months of the rendition of any statement or invoice forming the basis of such claim, and neither Party shall make claim on the other party for any adjustment after said twenty-four (24) month period. The Party requesting the audit must give the other Party at least thirty (30) days' written notice.

16. Measurement Disputes

- a. The Parties shall refer for determination any dispute, controversy, or claim arising out of in connection with this Exhibit (a "Measurement Dispute"), which the Parties are unable to resolve, to a mutually agreement measurement expert (the "Measurement Expert") as the sole and exclusive remedy of the Parties as to the Measurement Dispute. The decision of the Measurement Expert with respect to the applicable Measurement Dispute shall be final and binding upon the Parties.

17. Right to Change

- a. Enterprise reserves the right to modify the Measurement Procedures and Gas Measurement Policy from time to time in order to conform to the general measurement procedures prevailing for Gas processing plants, gas transmission activities, other related gas and Gas activities, and relevant Laws, remove any inequities found to exist, and such other measurement procedures as adopted by Enterprise that are applicable to this Agreement.
- b. Where multiple analytical test methods are allowed, Enterprise reserves, in its sole discretion, the right from time to time, as it deems necessary, to change the approved analytical method.
- c. Any change to this Exhibit or the approved analytical test method must be made on a non-discriminatory basis to similarly situated Customers.

18. Conflicts with Agreement

- a. To the extent there is any conflict or inconsistency between the Agreement and this Exhibit, the provision of the Agreement will control.