

4. QUALITY OF GAS

- 4.1 Composition of Gas. The gas received by Algonquin for Customer's account, or delivered by Algonquin to Customer, shall be a combustible gas consisting wholly of, or a mixture of:
- (a) Natural gas of the quality and composition produced in its natural state except that Algonquin may extract or permit the extraction of any of the constituents thereof except methane.
 - (b) Gas generated by vaporization of liquefied natural gas (LNG).
 - (c) Manufactured, reformed, synthesized, or mixed gas consisting essentially of hydrocarbons of the quality and character produced by nature in the petroleum, oil, and gas fields with physical properties such that when such gas is commingled with natural gas, the two become indistinguishable.
- 4.2 Heating Value and Wobbe Number. Gas received by Algonquin for Customer's account at each Point of Receipt, or delivered by Algonquin to Customer at the Point(s) of Delivery shall have a Total Heating Value of at least 967 Btu and not greater than 1,110 Btu per Cubic Foot of gas volume. The gas shall have a Wobbe Number of not less than 1314 nor greater than 1400 (calculated using Total Heating Value (THV)), dry, under standard conditions at 14.73 psia at 60 degrees Fahrenheit based on the following mathematical definition and in accordance with Section 5 of these GT&C:

$$\text{THV} / \text{Sqrt SG}_{\text{gas}}$$

Where:

THV = Total Heating Value (Btu/standard Cubic Foot)
SG_{gas} = Specific Gravity
Sqrt = Square Root of

- 4.3 Objectionable Properties. The gas received and delivered hereunder:
- (a) Shall be commercially free from dust, gum, gum-forming constituents, and free liquids under continuous gas flow conditions at the pressure and temperature conditions in Algonquin's pipeline at a point approximately fifty feet in advance of the interconnection into Algonquin's system that is serving as the Point of Receipt and the meter inlet header located at or near any Point of Delivery;
 - (b) Shall not contain an amount of water vapor exceeding seven pounds per 1,000,000 Cubic Feet of gas volume as measured by methods in

accordance with accepted industry practice, or by other methods mutually agreed upon by Customer and Algonquin;

- (c) Shall contain less than one-half (0.5) grain of hydrogen sulphide per 100 Cubic Feet of gas volume as measured by methods in accordance with accepted industry practice, such as, but not limited to, lead acetate testing, analysis by titrator, analysis by chromatograph, or by other methods mutually agreed upon by Customer and Algonquin;
- (d) Shall not contain more than five (5) grains of total sulphur per 100 Cubic Feet of gas volume as measured by methods in accordance with accepted industry practice, such as, but not limited to, analysis by titrator, analysis by chromatograph, or by other methods mutually agreed upon by Customer and Algonquin;
- (e) Shall be of a flowing temperature which is adequate to prevent interference with the proper operation of lines, regulators, meters and other equipment of Algonquin. Algonquin may impose restrictions on the temperature of the flowing gas that it receives when, in Algonquin's reasonable judgment, these restrictions are necessary to insure the proper operation of Algonquin's facilities;
- (f) Shall not contain more than four percent (4.0%) by volume of a combined total of any non-hydrocarbon gas including, without limitation carbon dioxide, nitrogen, krypton, helium, argon, xenon, and neon. Within this volume of non-hydrocarbons, the total carbon dioxide content shall not exceed two percent (2.0%) by volume, and the total combined nitrogen and oxygen content shall not exceed two and three quarters percent (2.75%) by volume;
- (g) Shall not have uncombined oxygen content in excess of two-tenths of one percent (0.2%) by volume; and
- (h) Shall not contain, either in the gas or in any liquids with the gas, any microbiological organism, active bacteria or bacterial agent capable of contributing to or causing corrosion and/or operational and/or other problems. Microbiological organisms, bacteria or bacterial agents include, but are not limited to, sulfate reducing bacteria (SRB) and acid producing bacteria (APB). Tests for bacteria or bacterial agents shall be conducted on samples taken from the meter run or the appurtenant piping using American Petroleum Institute (API) test method API-RP38 or any other test method acceptable to Algonquin and Customer which is currently available or may become available at any time.

- (i) The non-methane hydrocarbon content shall contain no more than twelve percent (12.0%) of ethanes and heavier hydrocarbons (C2+), of which the content of butanes and heavier hydrocarbons (C4+) shall not exceed one and one half percent (1.5%).
 - (j) Algonquin shall accept delivery of gas with a Liquefiable Hydrocarbons content equal to or less than 0.032 GPM C6+, provided that such gas satisfies all other applicable provisions of Algonquin's FERC Gas Tariff. This Standard shall be referred to as Algonquin's Liquefiable Hydrocarbons Safe Harbor, and the Liquefiable Hydrocarbons Safe Harbor correlates to a cricondentherm hydrocarbon dewpoint of approximately 15 degrees Fahrenheit. Absent a Liquefiable Hydrocarbon Problem, as defined in Section 1 of these General Terms and Conditions, Algonquin shall accept delivery of gas with a C6+ content greater than 0.032 GPM, provided that such gas satisfies all other applicable provisions of Algonquin's FERC Gas Tariff.
- 4.4 Liquefiable Hydrocarbon Postings: If Algonquin reasonably believes, based on available data, that there is a Liquefiable Hydrocarbon Problem and Algonquin reasonably believes, based on available data, that a limit on Liquefiable Hydrocarbons is operationally necessary, Algonquin shall post on its Web Site a limit on Liquefiable Hydrocarbons (no lower than the Liquefiable Hydrocarbons Safe Harbor) for receipts on specified Monitoring Segments to cure or prevent hydrocarbon liquid fallout ("Liquefiable Hydrocarbon Limit").
- (a) Location: Algonquin shall establish such Liquefiable Hydrocarbon Limits at the point where liquid fallout occurs or is anticipated to occur if known and then to the receipt points upstream of that location within the Monitoring Segment where the fallout is occurring or is anticipated to occur, or to the entire Monitoring Segment if the point of liquid fallout or anticipated fallout is not known. If that will not correct the Liquefiable Hydrocarbon Problem, Algonquin shall apply Liquefiable Hydrocarbon Limits for each Monitoring Segment immediately upstream of the Monitoring Segment where the liquid fallout occurs or is anticipated to occur up to the nearest Monitoring Point that satisfies the Liquefiable Hydrocarbon Limit.
 - (b) Application: Any such Liquefiable Hydrocarbon Limit shall be applied uniformly to all receipt points in such Monitoring Segments upstream of the point where liquid fallout occurs or is anticipated to occur if known or uniformly to all receipt points in the entire such Monitoring Segment if the point of liquid fallout or anticipated fallout is not known. Algonquin's analysis and posting of Liquefiable Hydrocarbon Limits shall not skip over any Monitoring Segment between the Liquefiable Hydrocarbon Problem and the furthestmost upstream Monitoring Segment at which a

Liquefiable Hydrocarbon Limit is posted. Algonquin shall post Liquefiable Hydrocarbon Limits in a given Monitoring Segment only to the extent necessary, in Pipeline's reasonable determination, to prevent or cure a Liquefiable Hydrocarbon Problem. Such posted Liquefiable Hydrocarbon Limits shall remain in effect no longer than necessary.

(c) Notice: Algonquin will provide as much notice of such a Liquefiable Hydrocarbon Limit as reasonably practicable, via Algonquin's Web Site.

- 4.5 Verification of Gas Quality. At Algonquin's request, Customer shall use all reasonable efforts to obtain and provide to Algonquin all records regarding gas quality kept by upstream pipelines transporting the gas received by Algonquin for Customer's account. Customer shall use all reasonable efforts to ensure and verify for Algonquin that such upstream pipelines are using appropriate equipment to monitor compliance with the gas quality specifications applicable on Algonquin's system as stated in this Section 4.
- 4.6 Failure To Conform to Specifications. If the gas tendered by Customer for receipt by Algonquin, or offered for delivery by Algonquin to Customer, shall fail at any time to conform to any of the specifications set forth in this Section 4, then the party asserting such deficiency shall notify the other of such deficiency and may, at its option, refuse to accept nonconforming gas pending correction by Algonquin or Customer as appropriate. Algonquin may refuse to accept gas or may impose additional gas quality specifications and restrictions if Algonquin, in its reasonable judgment, determines that harm to Algonquin's facilities or operations could reasonably be expected to occur if it receives gas that fails to meet such additional specifications and restrictions.
- 4.7 Odorization. Algonquin shall have no obligation to odorize the gas tendered by Customer other than to conform to the regulations of appropriate governmental authorities having jurisdiction. However, if Algonquin odorizes the gas, such odorization shall be by use of a malodorant agent of such character as to indicate by a distinctive odor the presence of gas. Whenever odorized gas is delivered, the quality and specifications, as set forth in this Section 4, of such gas shall be determined prior to the addition of malodorant or with proper allowance for changes or additions due to such malodorant. Such odorization of the gas by Algonquin shall be for the purpose of detection of the gas only during the time when the gas is in the possession of Algonquin, prior to delivery to the Customer.
- 4.8 Waiver of Requirements. Algonquin may waive the requirements set forth in this Section 4 in order to allow Customer to tender or cause to be tendered gas which does not, when injected into Algonquin's pipeline, meet the quality specifications set forth in Section 4; provided that acceptance of such gas shall not adversely affect Algonquin's system facilities or operations, and further provided that once such gas has been blended, to the extent blending occurs, the commingled gas

stream at any delivery point on Algonquin's system shall be compliant with the quality specifications set forth in Section 4. Algonquin shall post on LINK® any waiver of Algonquin's gas quality requirements. Algonquin shall implement this Section 4.8 on a non-discriminatory basis and may cancel any waiver at any time if necessary to assure that the commingled gas stream is compliant with the quality specifications set forth in Section 4 at any delivery point on Algonquin's system.