

**APPENDIX "H"**  
**TO**  
**GAS TRANSPORTATION TARIFF**  
**OF**  
**NOVA GAS TRANSMISSION LTD**

**TERMS AND CONDITIONS RESPECTING**  
**CO<sub>2</sub> MANAGEMENT SERVICE**

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CO<sub>2</sub> MANAGEMENT SERVICE**

**1.0 DEFINITIONS**

**1.1** Capitalized terms used in this Appendix have the meanings attributed to them in the Tariff unless otherwise defined in this Appendix.

In this Appendix:

**1.2** “Excess CO<sub>2</sub>” shall mean the volume of CO<sub>2</sub> in excess of 2% contained in gas receipts with a CO<sub>2</sub> concentration exceeding 2%.

**1.3** “Service” shall mean the CO<sub>2</sub> Management Service as approved by the Board via Decision 2002-084.

**1.4** “Service Cap” shall mean the minimum annual average volume of Excess CO<sub>2</sub> that Company shall not be required to extract or cause to be extracted from its Facilities.

**1.5** “System” shall mean Company’s Facilities.

**2.0 CO<sub>2</sub> MANAGEMENT SERVICE CAP**

**2.1** Company will implement a Service Cap, to reduce the volume of Excess CO<sub>2</sub> remaining in the commingled gas stream. For Excess CO<sub>2</sub> volumes above the Service Cap level, Company will contract for CO<sub>2</sub> extraction.

**2.2** The annual average Service Cap will be set at 155 10<sup>3</sup>m<sup>3</sup>/d (5.5 MMcf/d) initially, representing the volume of Excess CO<sub>2</sub> delivered to the System in 1999 (a reduction of approximately 300 10<sup>3</sup>m<sup>3</sup>/d (10.6 MMcf/d) of CO<sub>2</sub> from current levels). Company will reduce the annual average Service Cap to 125 10<sup>3</sup>m<sup>3</sup>/d (4.5 MMcf/d) following the fifth year of the Service.

**2.3** Excess CO<sub>2</sub> delivered to the System is not expected to exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d). Should Company expect that the contracted volume of Excess CO<sub>2</sub> under the Service will exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), Company shall provide notice to the Toll, Tariff, Facilities & Procedures Committee (“TTFP”) to initiate a review of the CO<sub>2</sub> Management Service to determine the effect of Service on Customers, producers and end-users. Within 90 days of the commencement of the TTFP review, Company on behalf of the TTFP will advise the Board of any required changes to the Service to ensure the Service will not have an impact on the commingled gas stream that has unintended consequential and a material adverse economic consequence on Customers, producers or end-users. In the event that the TTFP can not reach resolution on issues related to the CO<sub>2</sub> Management Service, Company on behalf of the TTFP will provide a report to the Board identifying such issues and seek Board direction. Company will continue to operate, offer and contract for the CO<sub>2</sub> Management Service during this time.

**2.4** Should the contracted volume of Excess CO<sub>2</sub> under the Service continue to increase beyond 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), the TTFP will conduct similar reviews at increments of 100 10<sup>3</sup>m<sup>3</sup>/d (3.6 MMcf/d) unless otherwise agreed to by the TTFP or directed by the Board.

### **3.0 CO<sub>2</sub> RECEIPT ZONE**

**3.1** If, while providing the CO<sub>2</sub> Management Service, natural gas volumes containing CO<sub>2</sub> greater than 2% are expected to be delivered to a CPO and Company is satisfied that the CPO or its customers would experience a demonstrated material adverse impact, Company may designate a CO<sub>2</sub> Receipt Zone (“CRZ”) or arrange another alternative with the CPO at an Alberta Delivery Point or an Extraction Delivery Point. A material adverse impact is defined as a quantifiable cost to an industrial process (that uses natural gas as a feedstock) that would experience a material efficiency degradation or detriment of material economic consequence resulting from the receipt of gas containing CO<sub>2</sub> concentrations in excess of 2%. This applies only to the CO<sub>2</sub> concentrations in excess of 2% on a monthly average basis and does not include short-term upset conditions caused

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from unplanned outages at CO<sub>2</sub> extraction facilities or upset conditions at Receipt Points where natural gas normally conforms with the 2% CO<sub>2</sub> receipt specification.

**3.2** A CRZ will encompass the Receipt Points contributing to the commingled gas stream delivered to the affected CPO. To ensure that deliveries to the CPO do not contain CO<sub>2</sub> concentrations in excess of 2%, Company may at any time within the CRZ:

- (i) install real-time CO<sub>2</sub> analyzers to monitor CO<sub>2</sub> concentrations;
- (ii) enforce Maximum CO<sub>2</sub> Volumes associated with the Schedule of Service under Rate Schedule CO<sub>2</sub> within the CRZ;
- (iii) contract for additional local CO<sub>2</sub> extraction from existing or incremental facilities; and/or
- (iv) reduce gas volumes accepted under the CO<sub>2</sub> Management Service for short periods.

**3.3** CO<sub>2</sub> Management Service within a CRZ may be suspended at any time for the following reasons:

- (i) excluding short-term upset conditions, Company cannot maintain the appropriate CO<sub>2</sub> concentration level within a CRZ; or
- (ii) sufficient CO<sub>2</sub> extraction capability is no longer available on terms and conditions satisfactory to Company.

**3.4** Company will endeavor to ensure, on a real-time basis, that the commingled gas stream delivered to a CPO within a CRZ will not exceed 2% CO<sub>2</sub>. In the case of a short-term upset, Company will take reasonable steps to ensure natural gas conforms to the 2% CO<sub>2</sub> receipt specification as soon as practical.

#### **4.0 CO<sub>2</sub> EXTRACTION**

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- 4.1** Company will contract for CO<sub>2</sub> extraction to physically remove CO<sub>2</sub> from the gas stream. Company has two options available for contracting CO<sub>2</sub> extraction. The first option is to extract CO<sub>2</sub> from the gas upstream of the Receipt Point. The second option involves extracting CO<sub>2</sub> from gas that has already entered the System by removing gas from the System, extracting the CO<sub>2</sub> and returning the gas to the System. In either case, Company will contract only for CO<sub>2</sub> to be extracted from the gas. Under the second option, the CO<sub>2</sub> Management Service will not enable the removal of natural gas liquids (“NGLs”) from the gas stream except for those trace amounts of NGLs removed through the normal CO<sub>2</sub> extraction process.
- 4.2** Subject to the Service Cap, Company will contract for CO<sub>2</sub> extraction along the same flow path, upstream, downstream or in parallel, to the Receipt Point where natural gas containing Excess CO<sub>2</sub> is delivered on the System, provided such parallel stream converges upstream of major nodes. Company will contract for such CO<sub>2</sub> extraction to reasonably ensure the commingled gas stream at major nodes, such as Cochrane Junction or Empress, contains no more CO<sub>2</sub> than if natural gas at Receipt Points conforms to the 2% CO<sub>2</sub> specification. Major nodes, as determined by Company (acting reasonably), are points on the Company’s mainline outside of a defined CRZ where large volumes of natural gas from multiple Receipt Points on the upstream flow path are delivered or flow through and where industrial processes would experience a material efficiency degradation or detriment of a material economic consequence. Mainlines, for the purpose of defining flow paths, are generally pipelines of NPS 24 (609.6 mm) diameter or greater. Company will use reasonable efforts to apportion the CO<sub>2</sub> Service Cap among flow paths in proportion to the Excess CO<sub>2</sub> volumes that are received on the various flow paths.
- 4.3** Company will strive to obtain low cost extraction under optimally flexible contract terms and conditions such as ability to renew, terminate, and vary contract volumes on short notice.
- 4.4** To ensure that Company is not contracting for CO<sub>2</sub> extraction that was already occurring prior to industry discussions regarding the management of CO<sub>2</sub> on the System, a baseline

measure will be established as the lesser of 2% or the historical CO<sub>2</sub> content for the Receipt Point. Company will only contract for CO<sub>2</sub> extraction incremental to the baseline. Historical CO<sub>2</sub> content is deemed to be the CO<sub>2</sub> content for the Receipt Point in 1999 unless it is demonstrated to be an anomalous year in respect of any particular Receipt Point.

- 4.5** In most circumstances, Company will contract for CO<sub>2</sub> extraction through a confidential bid process. Where extraction is required in a particular area with limited options, Company may proceed to contract extraction services through bilateral negotiations.