

# Centra Gas Manitoba Inc. – Transportation and Storage Portfolio Review

## Board Counsel’s Book of Documents

### INDEX

<b>Tab</b>	<b>Description</b>	<b>Reference</b>
1	Order 65/11 (Extracts)	<a href="http://www.pub.gov.mb.ca">http://www.pub.gov.mb.ca</a>
2	Application by Centra	Tab 2 of Centra’s Application
3	Term Sheet (Centra/GLGT/ANR)	Tab 8 – Attachment 1
4	Timeline	PUB/Centra 1(a) – August 15, 2011 (From Tab 4 – Attachment 3)
5	Summer Operations Maps (Both Current and Proposed)	Tab 6 – Attachment 1 and Tab 8 – Attachment 3
6	Winter Operations Maps (Both Current and Proposed)	Tab 6 – Attachment 2 and Tab 8 – Attachment 4
7	ANR Storage Volumes (2002-2012)	PRE-ASK/PUB/CENTRA 1 PUB/Centra 7(a) – August 15, 2011
8	Peak Day Supply (2011, 2012)	Tab 6 – pg. 5 of 5; Tab 8 – pg. 4 of 8
9	Primary Gas Billed Rate vs. AEEO	Order 54/12 – pg. 9 of 17
10	Basis Differentials	PUB/Centra 2 – May 18, 2012
11	TCPL Mainline Maps	Tab 4 – Attachment 2 (and TCPL website)
12	TCPL Tolls	Tab 4 – Attachment 2, pg. 6
13	Storage and Transportation Costs (Current and Proposed)	Tab 8 – Attachment 5
14	Capacities (Current and Proposed)	Tab 8 – Attachment 2
15	Centra Price Curve	Tab 7 – Schedule 1(f)

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## Board Counsel’s Book of Documents

### INDEX

<b>Tab</b>	<b>Description</b>	<b>Reference</b>
16	ICF Price Curve	Tab 7 – Schedule 2(f)
17	SENDOUT – Model Constraints	PUB/Centra 11 – May 18, 2012
18	Cost Comparison – ANR vs. “B”	Tab 7, pg. 14 of 16
19	Alternate SENDOUT Scenarios	PUB/Centra 10 – May 18, 2012
20	ICF Conclusions	Tab 7 – Attachment 1
21	Centra’s Portfolio Selection and WTS	PUB/Centra 18 – August 15, 2011 (From Tab 4 – Attachment 3)
22	TCPL Firm Transportation Renewal	CAC/Centra 5 – Attachment 2
23	Summer/Winter Price Differential at AECO	PUB/Centra 4 (2011 Cost of Gas Application – February 19, 2010)
24	Units of Measure and Abbreviations	PRE-ASK/PUB/CENTRA 2 and Tab 3

# 1

**MANITOBA**

**Order No. 65/11**

**THE PUBLIC UTILITIES BOARD ACT**

**April 28, 2011**

Before: Graham Lane, CA, Chairman  
Len Evans, LL.D., Member  
Monica Girouard, Member

**CENTRA GAS MANITOBA INC.  
2011/12 COST OF GAS APPLICATION AND  
MAY 1, 2011 PRIMARY GAS RATE  
AND RELATED MATTERS**



## Table of Contents

	Page
<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1.0 INTRODUCTION.....</b>	<b>8</b>
<b>2.0 CENTRA'S RATES .....</b>	<b>9</b>
<b>3.0 INTERVENER POSITIONS.....</b>	<b>11</b>
<b>4.0 APPLICATION .....</b>	<b>12</b>
FINAL APPROVALS .....	12
MAY 1, 2011 PRIMARY GAS RATE APPLICATION.....	13
PRIMARY GAS SUPPLY CONTRACT .....	20
TCPL TOLLS.....	24
CHANGES TO GAS TRANSPORTATION PORTFOLIO .....	26
COST OF GAS.....	29
→   US STORAGE AND TRANSPORTATION ASSETS .....	35
HEDGING .....	39
LOWER INCOME ENERGY EFFICIENCY PROGRAMS.....	42
DEMOGRAPHIC STUDY.....	44
FIXED RATE OFFERINGS.....	47
WEATHER NORMALIZATION METHODOLOGY .....	51
LOAD FORECASTING .....	54
COMMODITY RATE COMPARISON .....	56
COST OF SERVICE METHODOLOGY REVIEW.....	57
TRANSPORTATION SERVICE ELIGIBILITY .....	57
NON-GAS MATTERS.....	59
<b>5.0 IT IS THEREFORE ORDERED THAT: .....</b>	<b>62</b>

The question of updating the gas cost forecast has arisen in the past two COG proceedings. In the current application, CAC/MSOS recommended the forecast be updated for U.S. exchange rates and the Board has decided that the forecast be updated for the interim TCPL tolls as well as the exchange rates.

That said, the Board's concern is that this is happening at the end of the proceeding with limited time before the requested rate implementation date.

Centra prepares its gas cost forecast as of November 1, and then expects it to be put into rates May 1, so it is somewhat "stale". In GRA proceedings, Centra prepares the forecast on or about the same date in November, but issues an update in May in order to calculate rates for August.

The Board will amend the COG methodology, and require Centra to provide a gas cost update in future COG proceedings. This will allow for more up-to-date information, which is expected to yield more accurate forecasts, more accurate rates, and reduced build-ups in PGVAs.

When the Board orders amendments to the gas cost forecast, as has been the past practice and is the current situation, Centra has little time to prepare the new forecast, and the Board even less time to review it. Under this time pressure, errors are more likely to be made, and even less likely to be discovered, before rates are set.

The Board recognizes that updating the gas cost forecast entails extra work for Centra. While all gas costs are subject to PGVA treatment and consumers (in aggregate) are eventually held harmless from stale or inaccurate forecasts, it is better to employ less dated information in establishing rates.

## → US Storage and Transportation Assets

Centra has storage and transportation assets under contract in the United States. Natural gas storage in Michigan is used by Centra to assist in supplying its customers throughout the winter. Gas is injected into storage in the summer months and withdrawn from storage in the winter. Centra holds pipeline capacity in the U.S. to move the gas to

and from storage. In order for Centra to use the gas it withdraws from storage, it withdraws gas from the TCPL Mainline for use in Manitoba and injects a complementary amount of gas from its Michigan storage to a downstream point, a procedure called "notional backhaul".

Centra contracts for storage from ANR and for pipeline capacity (to move its storage gas from ANR storage) from ANR and Great Lakes Gas Transmission (GLGT). Centra also contracts for pipeline capacity from ANR to transport gas from Oklahoma and Louisiana; the Louisiana capacity is only available in the summer and is used to re-fill storage, while the Oklahoma capacity is available year round and is used by Centra to meet the winter load as well as to re-fill storage.

In aggregate, these contracted storage and transportation arrangements are referred to as Centra's U.S. storage and transportation assets, and Centra's contracts with ANR and GLGT expire March 31, 2013.

Centra has initiated a process to investigate alternatives and options for replacing its storage and transportation contracts. This process includes the engaging of consultants to assist Centra in reviewing options and scenarios for storage and transportation, developing a discussion paper on the various options, providing this paper to the stakeholders in Centra's gas supply, storage, and transportation arrangements, and obtaining stakeholder input by way of a technical conference that is scheduled for June 2011. Stakeholders in this process include the Board, Interveners in this and prior proceedings, as well as larger customers of Centra.

In response to Directive 2 from Order 55/10, Centra filed a timeline detailing the milestones involved in the process. Centra confirmed that it is undertaking activities in accordance with the timeline.

### **CAC/MSOS' Position**

CAC/MSOS propose that a meaningful dialog be conducted concerning the replacement of Centra's US storage and transportation assets. The discussion paper that is to be filed in May 2011 should provide economic analysis of the preferred

options, operational implications, and Centra's recommendations, not just discuss the options that are available to Centra. Otherwise, in CAC/MSOS' view, the discussion paper and the subsequent technical conference will be of little value to CAC/MSOS and the Board. CAC/MSOS want consensus among CAC/MSOS, the Board, and Centra to be achieved prior to finalization of contractual commitments.

CAC/MSOS recommend that the discussion paper include a full explanation of alternatives available to Centra and the economic and operational evaluations of these alternatives, Centra's initial recommendations, and be followed by further discussion and exchanges of information with the aim of achieving consensus.

### **Board Findings**

The Board has considered the public process proposed by Centra for the replacement of its portfolio of U.S. storage and transportation assets. In Centra's proposed process, Centra plans to distribute a discussion paper to interested stakeholders, to be followed by a technical conference. This is insufficient in order to canvass and discuss the options involved in this change to a critical component of Centra's operations.

Centra held a technical conference in 2006 prior to the renewal of its gas supply contract with Nexen to provide an opportunity for interveners and stakeholders to voice their opinions on the proposed replacement or renewal of the gas supply contract. While the Board found that Centra had followed the process outlined in Order 175/06 for the replacement or renewal of the gas supply contract, the Board was of the view that the process did not allow for sufficient dialog, and the Board does not want a repeat of that process.

The Board agrees with CAC/MSOS and sees a need for additional disclosure and dialog in order to illuminate the various options along with their benefits and drawbacks. The Board has permitted CAC/MSOS to hire a consultant to assist them in reviewing Centra's proposed plans to replace its U.S. assets. Without an information request process, it would be difficult to for either the Board or interveners to sufficiently test Centra's plan and recommendations.

As such, the Board directs the following changes to the portfolio review process. Centra's discussion paper is to be of sufficient breadth that the myriad options available to Centra are considered, but also of sufficient depth that the favoured options are analyzed, both economically and operationally. Centra is to administer an information request process following the technical conference. Following the information request process, stakeholders are invited to provide the Board with written submissions giving their positions.

Centra is to schedule an oral hearing into this matter following the receipt of the submissions. The hearing will be limited to matters involving the replacement of the U.S. storage and transportation assets, a review of the TCPL tolls situation, and the updated gas costs for both 2010/11 – as impacted by the tolls situation – and for future years, as impacted by the storage and transportation portfolio.

Centra will complete its internal economic and business case analysis in September and make its final recommendation to the Centra Board of Directors and obtain approval in October. The Board understands that Centra will undertake contractual negotiations after obtaining approval from the Centra Board.

It is the Board's intention that Centra seek approval of the gas cost consequences of any arrangements prior to those arrangements being finalized. Board approval of the gas cost consequences is to be a condition precedent to any contractual obligations entered into by Centra.

With the inclusion of an information request process, an oral hearing, and the requirement for Board approval of the gas cost consequences of intended contractual arrangements, the timeline filed by Centra in response to Directive 2 from Order 55/10 will require amendment. Centra should contact the Board to determine the Board's availability. Interveners may notify Centra as to availability. The Board requests an amended timeline from Centra by May 20, 2011.



~~The Board is concerned with the impending write-off of rate-regulated accounts against retained earnings. For example, Centra currently has \$32 million in deferred expenses for Power Smart and DSM expenditures. Under the proposed implementation of IFRS, these accounts will be written off.~~

Centra's DSM programs provide benefits to its customers. Customers who implement DSM measures will reduce their gas consumption and decrease their bills. In aggregate, as customers decrease their consumption Centra must increase its non-gas unit rates to ensure that it collects its revenue requirement.

Furthermore, upon IFRS implementation future DSM expenditures must be expensed in the year they are incurred, and Centra's non-gas Distribution rates will increase even more.

As these unit rates increase, customers may pay more, but there remains a net benefit to customers' bills that participated in the DSM programs as their reduced consumption means they are purchasing less Primary and Supplemental Gas. That is, customers who made efficiency improvements will see reduced bills even as Centra increases its Distribution rates.

Board decisions may be appealed in accordance with the provisions of Section 58 of *The Public Utilities Board Act*, or reviewed in accordance with Section 36 of the Board's Rules of Practice and Procedure (Rules). The Board's Rules may be viewed on the Board's website at [www.pub.gov.mb.ca](http://www.pub.gov.mb.ca).

## **5.0 IT IS THEREFORE ORDERED THAT:**

1. Centra is to calculate and submit, for Board approval, rate schedules, proof of revenue by class and bill impacts for all natural gas consumed on and after May 1, 2011 reflecting:
  - a. Interim approved TCPL tolls that will increase the 2010/11 gas cost forecast by \$7.1 million;
  - b. Actual CAD/USD exchange rates to date which are expected to decrease the gas cost forecast in excess of \$97,000;

2. Centra's forecast for Capacity Management revenues of \$6.9 million and the forecast for a Canadian to U.S. dollar exchange rate of \$1.02 CAD/USD BE AND IS HEREBY APPROVED;
3. Centra's Application for a revised Primary Gas rate of \$0.1548/m<sup>3</sup>, effective May 1, 2011, BE AND IS HEREBY APPROVED;
4. Centra's Cost of Gas for 2009/10 of \$268,647,199, including \$5,969,609 in Capacity Management revenues and additional gas costs of \$32,118,598 resulting from the derivatives hedging program BE AND IS HEREBY APPROVED;
5. Interim Orders 147/09, 4/10, and 81/10 related to the November 1st, 2009, February 1, 2010, and August 1, 2010 quarterly Primary Gas applications, respectively, BE AND ARE HEREBY APPROVED;
6. Interim Order 46/10 related to the May 1, 2010 Primary Gas application and the May 1, 2010 non-Primary Gas application BE AND IS HEREBY APPROVED;
7. Centra's revised methodology for determining the normal weather degree days heating, which is used in the determination of the Natural Gas Volume Forecast, BE AND IS HEREBY APPROVED;
8. Amendments to the Schedule of Sales and Transportation Services and Rates, for new customers, related to establishing a minimum consumption threshold of 200 GJ/day to be eligible for Transportation Service (T-Service) BE AND ARE HEREBY APPROVED;
9. CAC/MSOS' counsel and advisor are to view the ConocoPhillips gas supply contract and pricing details including the proposal submissions of the other Proponents. This review will take place in the Board's office subject to the execution of non-disclosure agreements that limit liquidated damages to \$10,000 for both intentional and unintentional disclosure;
10. Centra amend the COG methodology such that Centra is to provide a gas cost forecast update in future COG proceedings, in a manner similar to that of GRA proceedings;

- Acting Secretary



2

**THE PUBLIC UTILITIES BOARD OF MANITOBA**

**IN THE MATTER OF:**

The Public Utilities Board Act (Manitoba);  
and

**IN THE MATTER OF:**

An Application by Centra Gas Manitoba Inc.  
for an Order of the Public Utilities Board  
Approving the fixed costs associated with  
the proposed contractual arrangements for  
natural gas storage and related inter-state  
transportation with the ANR Pipeline  
Company ("ANR") and the Great Lakes Gas  
Transmission Limited Partnership ("GLGT").

**TO:** The Executive Director of the  
Public Utilities Board of Manitoba  
Winnipeg, Manitoba

**APPLICATION**

1. Centra Gas Manitoba Inc. ("Centra") hereby applies to the Public Utilities Board of Manitoba ("PUB") for an Order pursuant to The Public Utilities Board Act, for the approval of the fixed costs flowing from the contractual arrangements related to natural gas storage capacity provided by ANR Transport Storage and related inter-state pipeline transportation capacity with Great Lakes Gas Transmission Limited Partnership and ANR Pipeline Company, effective April 1, 2013.

Communication related to this Application should be addressed to Centra in the following fashion:

Centra Gas Manitoba Inc.  
Transportation & Storage Portfolio Application  
Letter of Application

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Tab 2  
Page 2 of 2  
March 23, 2012

Centra Gas Manitoba Inc.  
c/o: 22<sup>nd</sup> Floor, 360 Portage Avenue  
Winnipeg, Manitoba  
R3C 0G8

Mr. Brent Czarnecki  
Telephone No. (204) 360-3257  
Fax No. (204) 360-6147  
E-Mail: baczarnecki@hydro.mb.ca

DATED at Winnipeg, Manitoba this 23<sup>rd</sup> day of March 2012.

CENTRA GAS MANITOBA INC.

A subsidiary of Manitoba Hydro

Per: 

Brent A. Czarnecki

# 3

**Term Sheet  
Between**

**Centra Gas Manitoba Inc., a wholly owned subsidiary of Manitoba Hydro,  
(hereinafter "Centra")**

**and**

**Great Lakes Gas Transmission Limited Partnership,  
(hereinafter "GLGT")**

**and**

**ANR Pipeline Company  
(hereinafter "ANR")**

**WHEREAS** Centra, GLGT and ANR (collectively the "Parties") are parties to certain transportation and storage service contracts which are set to expire on March 31, 2013 (the "Existing Contracts");

**AND WHEREAS** the Parties have agreed to replace the Existing Contracts with certain transportation and storage service contracts, the contract quantities, rates and terms and conditions of which are contained within this Term Sheet;

**NOW THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which is now hereby acknowledged, the Parties agree as follows:

1. "Term Sheet" means this Term Sheet and Exhibit A. It is mutually agreed by the parties hereto that each of the said documents are incorporated by reference herein.
2. Centra, GLGT and ANR will replace the Existing Contracts in accordance with the terms and conditions of this Term Sheet. The replacement of the Existing Contracts will be effectuated by the execution of the transportation and storage contracts referenced herein (the "Replacement Contracts"). Notwithstanding the date of execution and subject to any required approvals by the Federal Energy Regulatory Commission ("FERC"), the Replacement Contracts will take effect on the corresponding dates specified in Exhibit A.
3. The execution of the Replacement Contracts is subject to and contingent upon the approval of Centra's Board of Directors and shall be subject to and contingent upon Centra obtaining all necessary regulatory approvals from the Manitoba Public Utilities Board ("MPUB") as set forth in section 6 herein.



4. Upon execution of this Term Sheet, Centra, ANR and GLGT shall cooperate and work in good faith to effectuate the terms and conditions of this Term Sheet as will be reflected in the Replacement Contracts.
5. The Replacement Contracts shall be in accordance with the General Terms and Conditions of ANR's FERC Gas Tariff and GLGT's FERC Gas Tariff, as applicable.
6. The cost consequences arising from this Term Sheet are subject to regulatory approval by the MPUB and shall be sought by Centra as soon as is reasonably practical after the execution of this Term Sheet and approval of Centra's Board of Directors. Centra will use its best efforts to complete the regulatory process and obtain the necessary regulatory approvals on or before August 31, 2012.
7. ANR and GLGT will file, as necessary, any Replacement Contracts that contain non-conforming provisions in accordance with FERC regulations within 30 days of execution of said Replacement Contracts. Filings of Replacement Contracts referenced herein will include a request for waiver of any FERC regulations necessary to secure approval of said Replacement Contracts sufficiently in advance of the earliest commencement date of service contemplated in the Replacement Contracts. In the event that any Replacement Contracts filed with FERC for approval are not approved by FERC, ANR and GLGT will use any and all reasonable measures, including but not limited to regulatory, contractual, commercial or operational measures, available to ANR and GLGT as necessary to ensure that the services contemplated herein are provided for at the rates and terms contained herein.
8. Save and except for section 7 herein, this Term Sheet shall terminate upon the date of the execution of the Replacement Contracts by the parties herein.

Effective this 12<sup>th</sup> day of March, 2012.

Centra Gas Manitoba Inc., a wholly owned subsidiary of Manitoba Hydro

By:

Title:

V.A. Warden

SENIOR VP FINANCE & ADMINISTRATION  
and CHIEF FINANCIAL OFFICER

[SIGNATURES CONTINUED ON THE NEXT PAGE]

ANR PIPELINE COMPANY

By:   
Title: Dean Patry  
VP US Pipelines Central

ANR PIPELINE COMPANY

By:   
Title: Gary Charette  
VP US Commercial Operations

Legal  
2/12/12  
Date

GREAT LAKES GAS TRANSMISSION LIMITED PARTNERSHIP

By:   
Title: Dean Patry  
VP US Pipelines Central

GREAT LAKES GAS TRANSMISSION LIMITED PARTNERSHIP

By:   
Title: Gary Charette  
VP US Commercial Operations

Legal  
2/12/12  
Date

**ANR Pipeline Company ("ANR")  
Great Lakes Gas Transmission Limited Partnership ("GLGT")  
Centra Gas Manitoba Inc. ("Centra")**

**Exhibit A to Term Sheet Dated March 12, 2012**

Service	Term of Contract		Annual Reservation Charges			Months	Reservation Charges
	Start	End	Final	Quantity	Contract		
Seasonal Storage Deliverability Storage Capacity Reservation	4/1/2013	3/31/2020	\$ 1.6000 \$ 0.3020	89,400 Dth/d MDWQ 7,677,318 MDth		12 12	\$1,716,480 \$2,318,550
Annual Storage Deliverability Storage Capacity Reservation	4/1/2013	3/31/2020	\$ 1.6000 \$ 0.3125	117,000 Dth/d MDWQ 7,013,846 MDth		12 12	\$2,246,400 \$2,191,827
<b>Summer Service:</b>							
GLGT Transport Emerson to Fortune Lake/Crystal Falls 100% LF Reservation	2/ 14/ 4/1/2013	3/31/2020	\$ 3.0420 \$ 0.1000	50,500 Dth/d MDQ		7	\$1,075,347
ANR Transport Fortune Lake/Crystal Falls (ID: 11661) to Storage (ID: 153808) 100% LF Reservation	3/ 4/1/2013	10/31/2019	\$ 3.9250 \$ 0.1290	50,200 Dth/d MDQ		7	\$1,379,245
ANR Transport Joliet Hub Logical Point (ID: 243097) to Storage (ID: 153808) 100% LF Reservation	4/ 4/1/2013	10/31/2019	\$ 3.9250 \$ 0.1290	7,000 Dth/d MDQ		7	\$192,325
<b>Winter Service:</b>							
ANR Transport Storage (ID: 153808) to Deward (ID: 40785) 100% LF Reservation	5/ 11/1/2013	3/31/2020	\$ 0.3040 \$ 0.0100	204,363 Dth/d MDQ		5	\$310,632
GLGT Transport Deward/Farwell to Emerson 100% LF Reservation	6/ 14/ 4/1/2013	3/31/2020	\$ 2.2800 \$ 0.0750	224,363 Dth/d MDQ		5	\$2,557,738
ANR Transport Joliet Hub Logical Point (ID: 243097) to Storage (ID: 153808)	7/ 11/1/2013	3/31/2020	\$ 0.3040 \$ 0.0100	40,000 Dth/d MDQ		5	\$60,800
Total Reservation							<u>\$14,049,344</u>

**Notes:**

- This is a package deal and is not severable into individual services.
- Route at discount with secondary deliveries in path with \$0.005/dth uptick, FLUCF Secondary Receipt, Emerson Secondary Del at same rate as primary, no other secondaries at discount.
- Route at discount, secondary receipt at Joliet Hub Logical Point (ID: 243097), ANR storage (ID: 153808), secondary delivery at CF (ID: 11661) and Joliet Hub Logical Point (ID: 243097) at discount, no other secondaries at discount.
- Route at discount, secondary receipts CF (ID: 11661), ANR storage (ID: 153808), secondary deliveries CF (ID: 11661), Joliet Hub Logical Point (ID: 243097) at discount, no other secondaries at discount.
- ANR Winter route Storage (ID: 153808) to Deward (ID: 40785) primary, secondary delivery to Farwell (ID: 11616) at discount, no other secondaries at discount. ANR will have ability to put gas into Deward or Farwell, at ANR's sole discretion.
- GLGT backhaul contract will have primary receipts at Deward and Farwell, with secondary deliveries at Crystal Falls at \$0.02 uptick, no other secondaries at discount.
- Route at discount, with secondary delivery at Farwell (ID: 11616) at discount, no other secondaries at discount.
- Contractual ROFR on all contracts.
- All contracts will be pro-forma agreements with discounted rates, with the exception of ANR's contract from ANR storage to GLGT, which will contain non conforming provisions that will require approval by the Federal Energy Regulatory Commission.
- All services will be subject to commodity and utilization charges, as well as appropriate fuel and ACA.
- Deal subject to approval by the Centra Board of Directors and the Manitoba Public Utilities Board prior to contract execution.
- Deal subject to the terms and conditions of ANR's FERC Gas Tariff.
- Deal subject to the terms and conditions of GLGT's FERC Gas Tariff.
- GLGT Transport will be on the same contract with Winter and Summer Routes as detailed in footnotes 2/ and 6/.

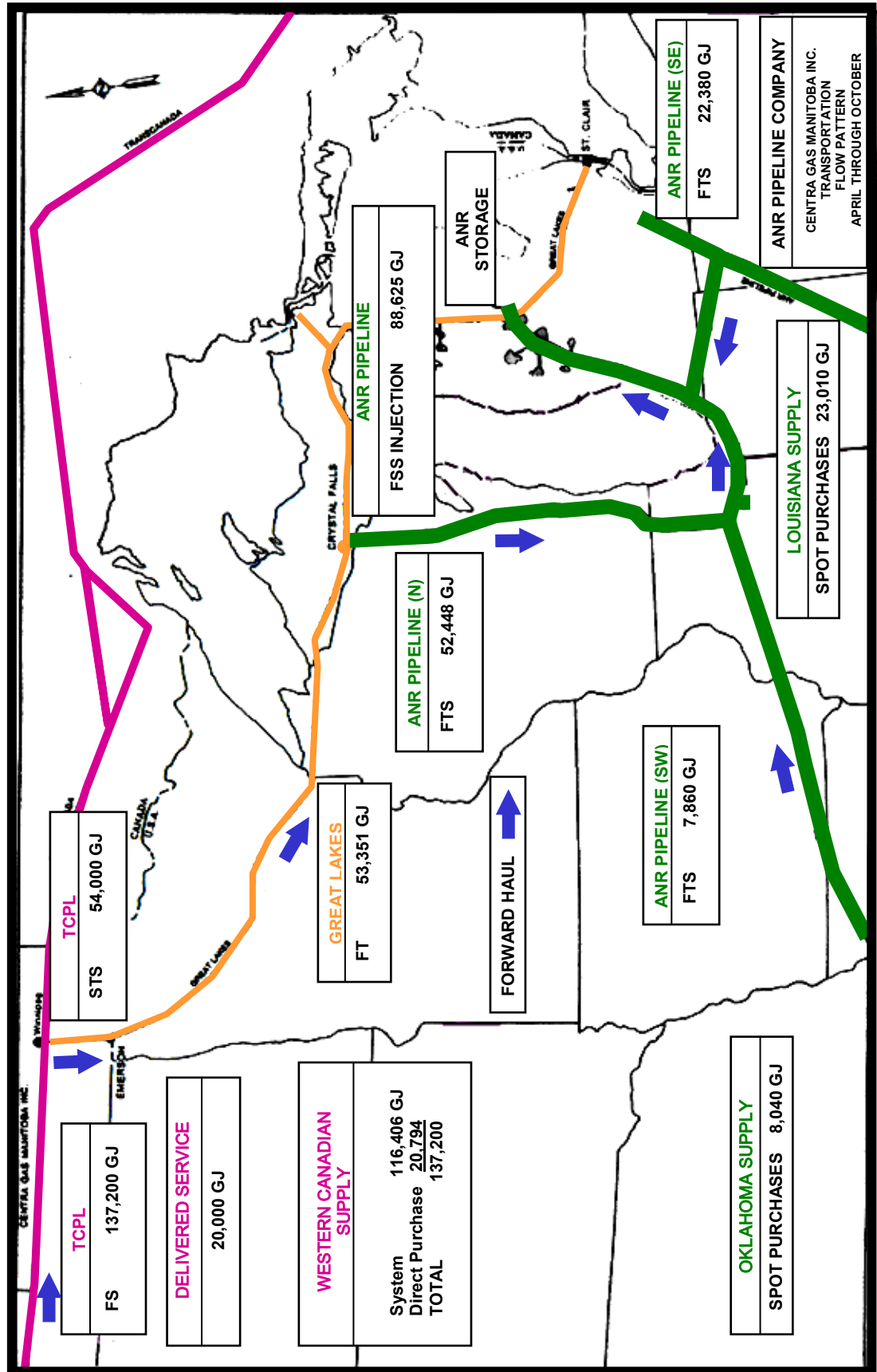


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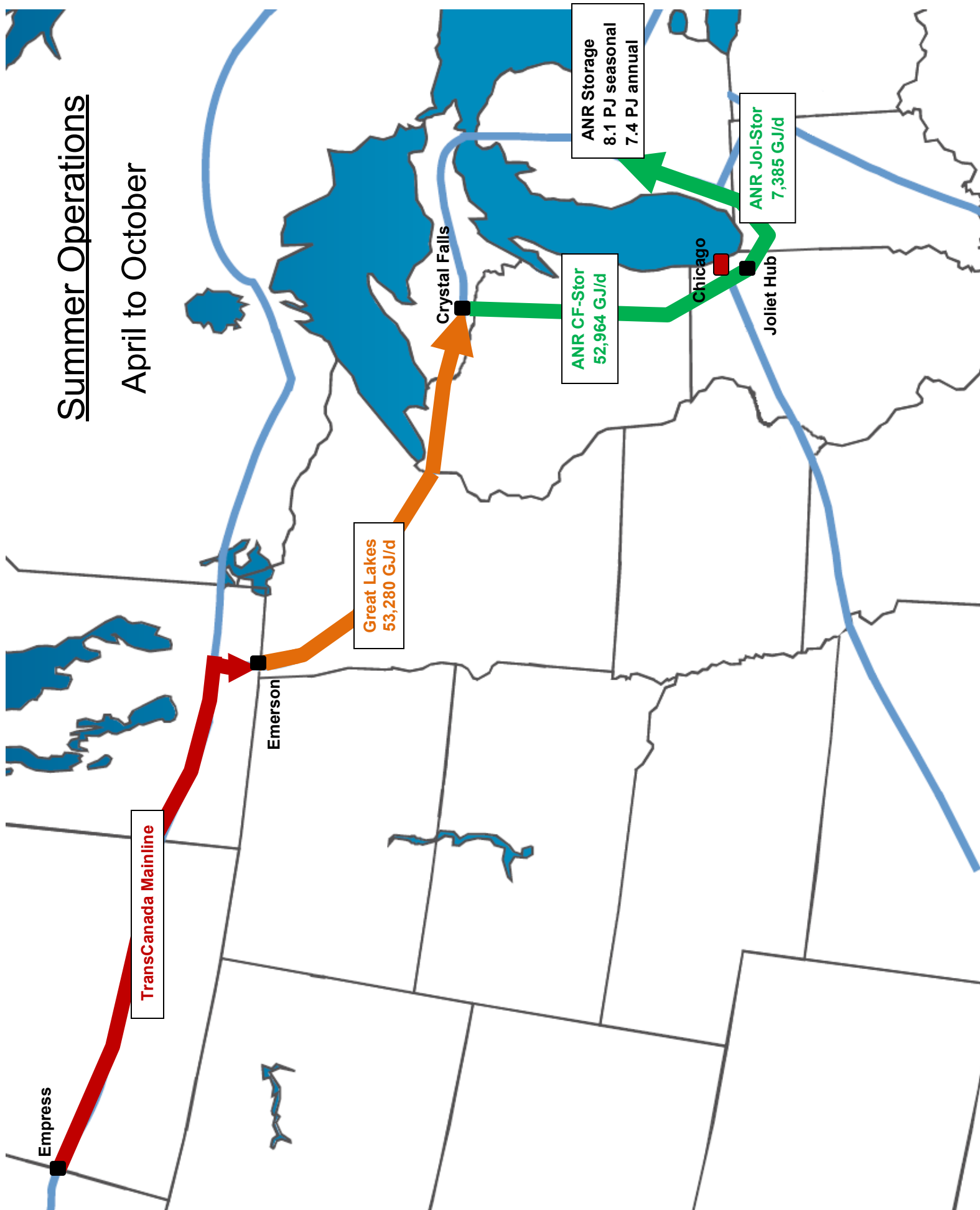
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## April - October 2011 Summer Operations



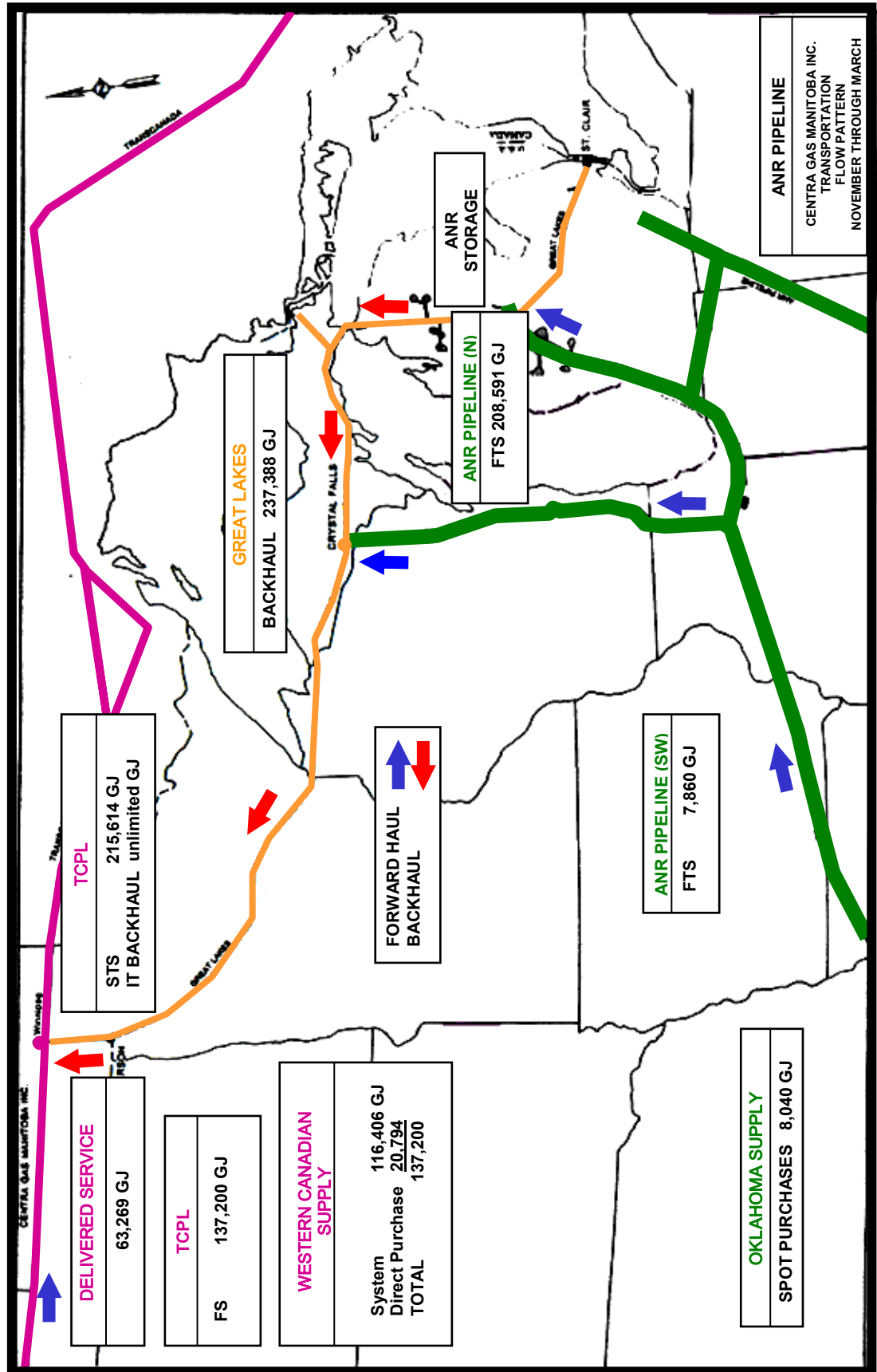
# Summer Operations

April to October



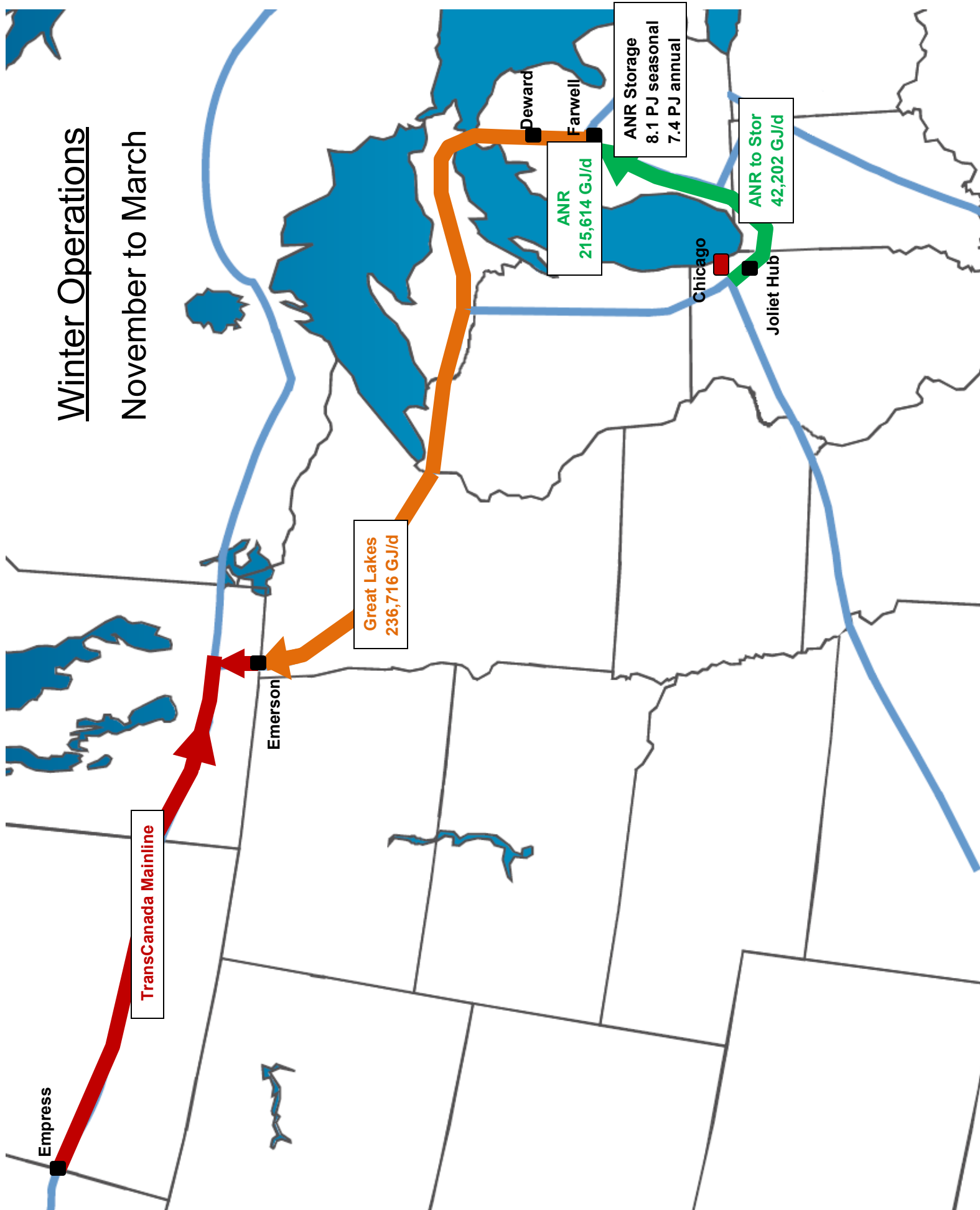
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# November 2010 - March 2011 Winter Operations



## Winter Operations

November to March





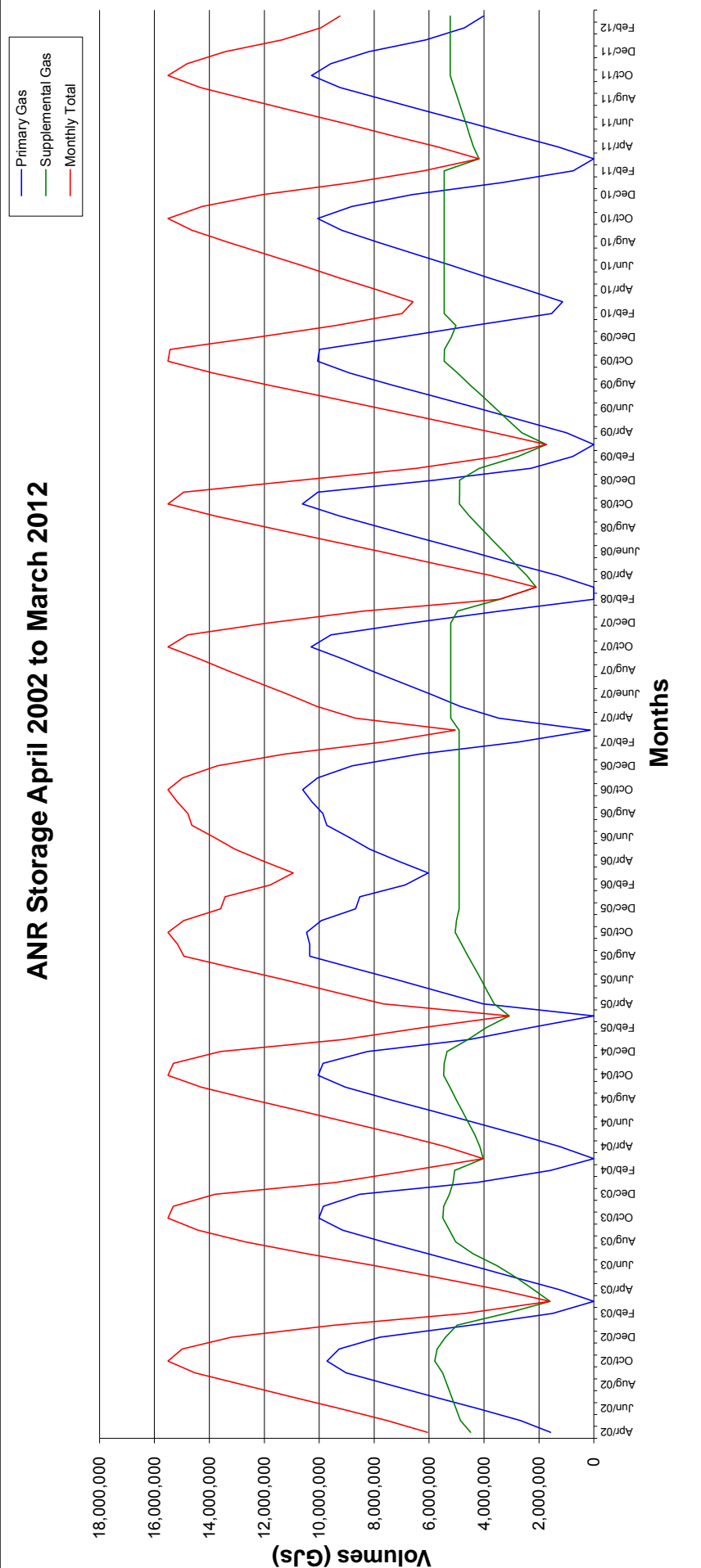
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**CENTRA GAS MANITOBA INC.****TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION****RESPONSE TO PRE-ASKS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**1     PRE-ASK/PUB/CENTRA 1****2****3     Please update Tab 4 Attachment 3 PUB/Centra 7(a) with the most recent gas year.****4****5     Please see the attachment to this response.**

## ANR Storage April 2002 to March 2012



## CENTRA GAS MANITOBA INC.

PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
TRANSPORTATION ARRANGEMENTSRESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA

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**PUB/CENTRA 1**

***Reference: Centra's October 28, 2010 Response to Order 55/10 Directive 2***

- (a) Please confirm whether the timeline of the process for replacing transportation and storage assets filed on October 28, 2010 in response to Directive 2 of Order 55/10 is still valid. If not confirmed, please update the timeline and milestones.**

Please see the attached timeline, reflecting minor adjustments to the anticipated completion of some tasks and activities. Please note that the dates indicated on the timeline are estimates that are subject to change if deemed necessary by Centra. The timeline may also be adjusted in due course upon establishment of the regulatory process.

- (b) Please explain how the current timeline for a NEB order relating to final TCPL tolls will affect the timeline.**

The NEB is expected to rule on final 2011 TCPL Mainline tolls by late August 2011. Finalization of 2011 tolls will not affect Centra's timeline provided in part (a) of this response. There is currently no confirmed timeline related to the finalization of TCPL Mainline tolls for 2012 or beyond. TCPL has committed to the NEB to file part of its application by September 1, 2011 and expects to file the remainder of its application by the end of October. Centra will make its portfolio decisions considering the wide range of

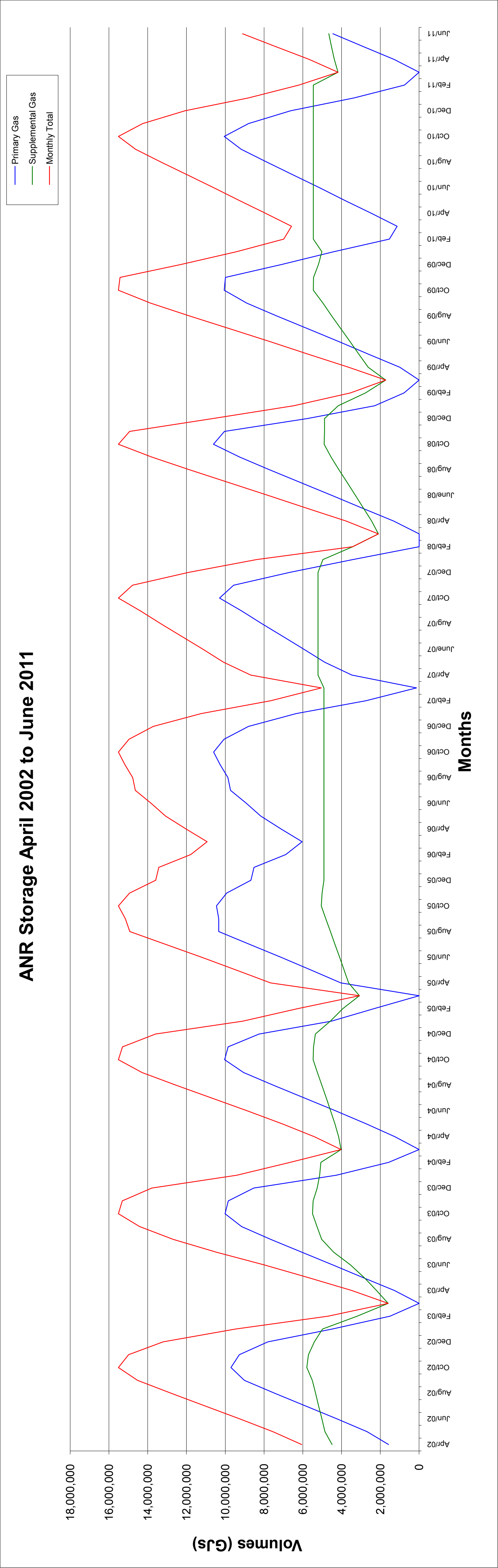
possible TCPL outcomes and the best information available to Centra at any given point in time.

**(c) Please explain Centra's rights of first refusal related to the ANR and GLGT contracts, and describe the ROFR process.**

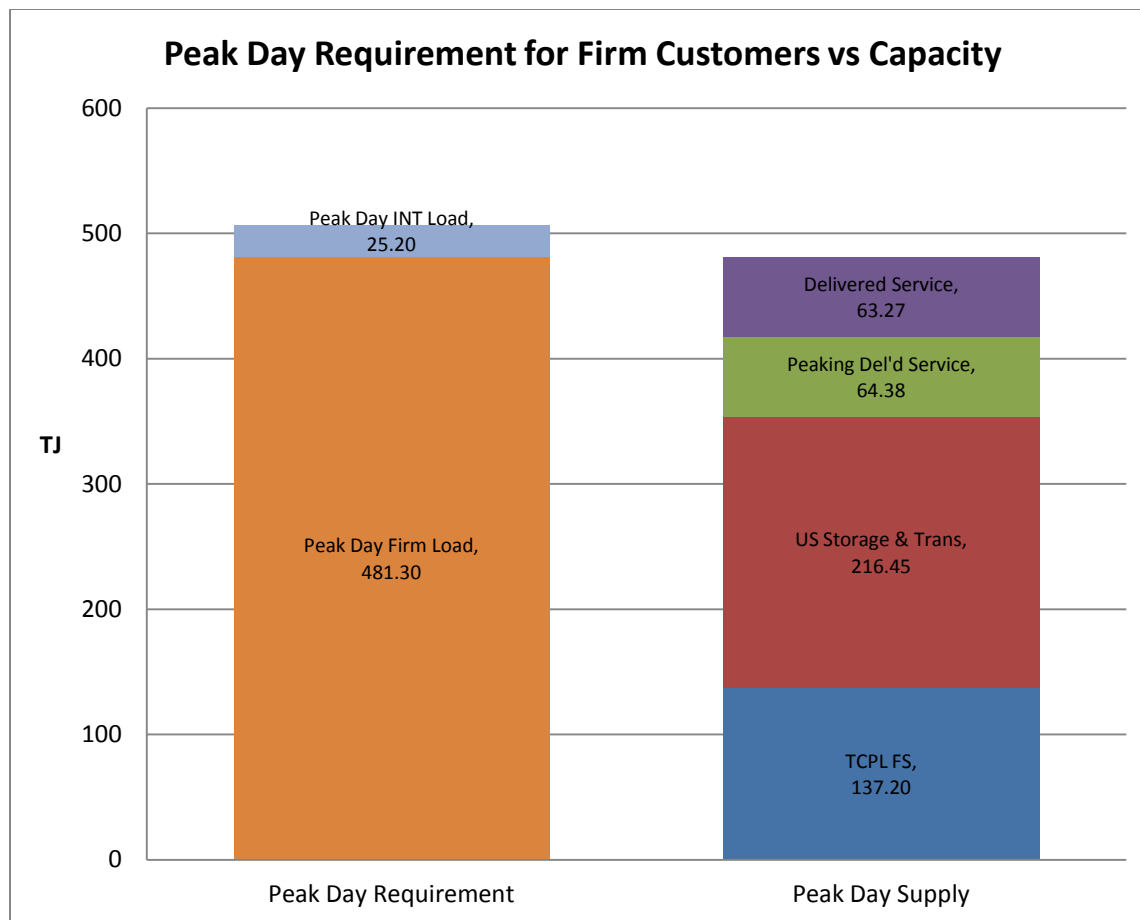
ANR's tariff calls for notification of shippers holding ROFR capacity (applicable to all of Centra's ANR contracts) to take place no earlier than 8 months, and no later than 7 months prior to contract expiry. The shipper then has 60 days to either match an existing offer for the capacity, or if none, to negotiate with ANR a new or amended agreement. An additional provision in ANR's tariff allows for portfolios as large as Centra's to qualify for notification no earlier than 13 months, and no later than 11 months prior to contract expiry, if ANR has a pending offer for capacity that cannot be met with existing capacity. ANR has never invoked this provision.

GLGT's tariff calls for notification 12 months prior to the expiry of Centra's GLGT contract FT4521 (summer forward haul), which starts a 30 day negotiation period. If no deal is reached, GLGT will post an open season for the capacity for 30 days, after which Centra has the right to match an acceptable offer, or if none, provide an acceptable bid to GLGT. For GLGT contract FT4190 (winter backhaul), Centra does not have a ROFR as the contract is at a discounted rate.

The ROFR matching provisions for both ANR and GLGT require a shipper to match (a) the longest term and (b) the highest rate, up to the maximum rate, that is offered by another party desiring such capacity.



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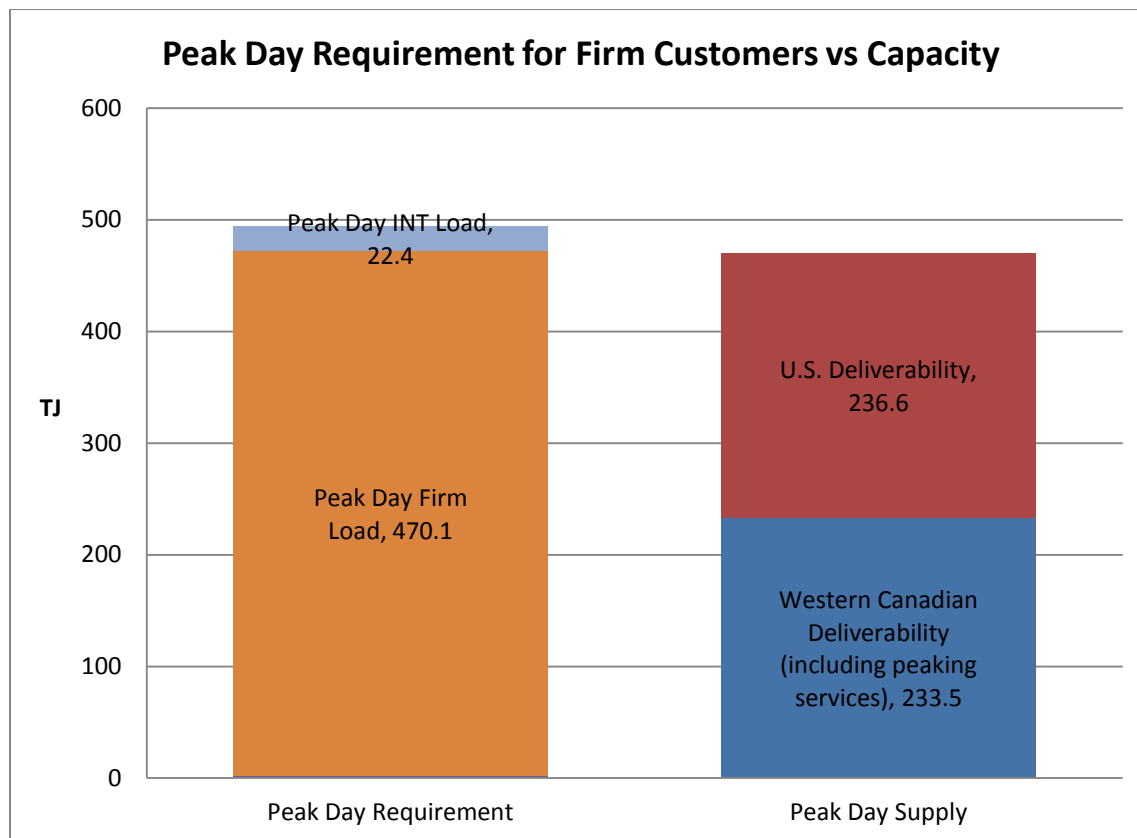
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### 3 **6.3 Annual Costs for U.S. Transportation and Storage**

4 The costs associated with the U.S. transportation and storage arrangements consist of  
 5 fixed contractual and variable transportation and storage costs. The fixed costs of the  
 6 current U.S. storage and transportation are approximately \$17 million USD annually and  
 7 the variable costs are approximately \$1 million USD annually.





### 8.3 Proposed Portfolio Costs

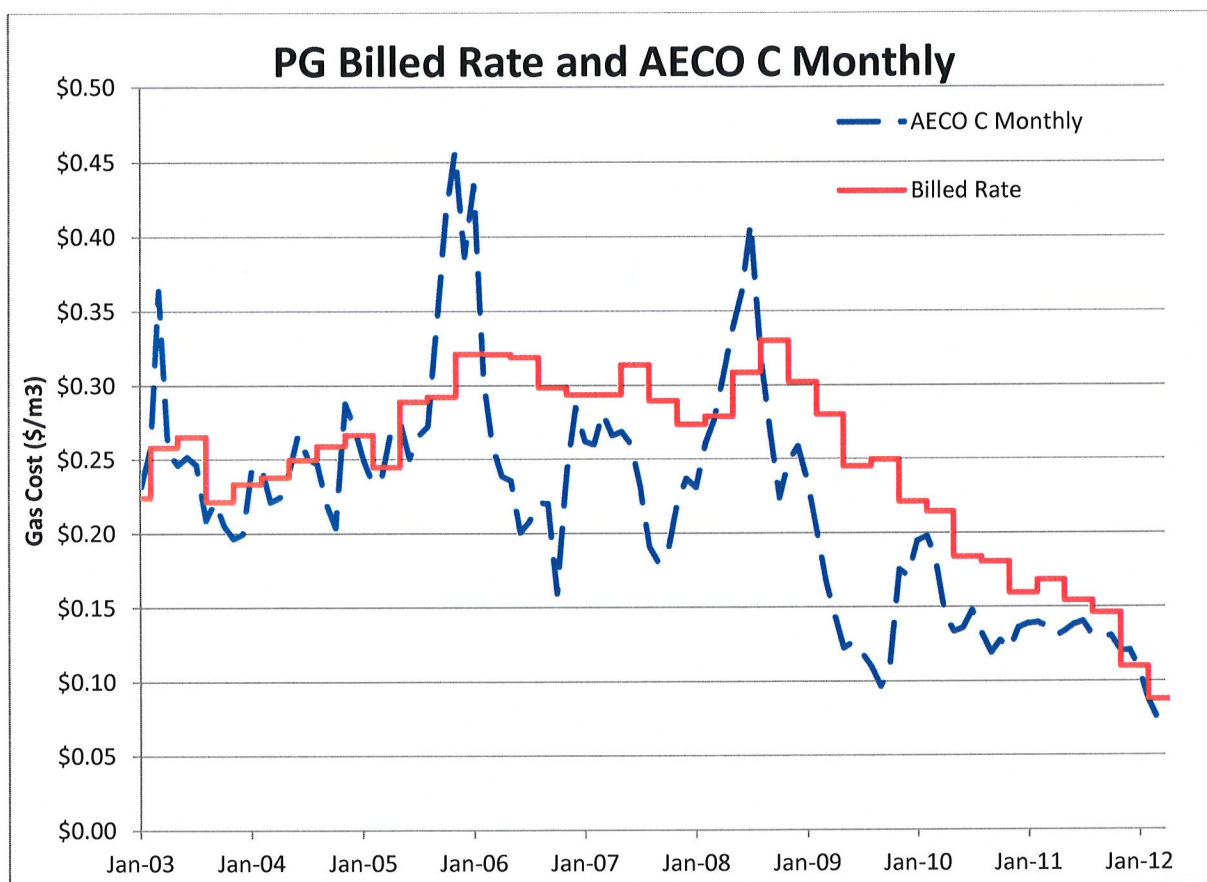
Most of the costs associated with the use of ANR and GLGT transportation and storage services are related to the rates for “reserving” Centra’s right to the capacity for the duration of the contracts. On a reservation rate basis, the proposed portfolio will reduce annual fixed costs for U.S. storage and transportation arrangements from \$17 million USD under the current portfolio to \$14 million USD, which is a reduction of 18%. Please refer to Attachment 5 to this Tab. Variable costs associated with the proposed portfolio are expected to be similar to those experienced under the current arrangements (approximately \$1 million USD per year).

9

#### Notes

1. The average annual bill above is based on the estimated annual consumption of a typical residential customer of 2,465 cubic metres with 97% from Primary Gas and 3% from Supplemental Gas.
2. Residential customers receiving Primary Gas from marketers and Centra's Fixed Rate Primary Gas Service would not have the same cost and bill experience as Centra's Quarterly Service customers. Primary Gas costs for customers on fixed rate contracts are in accordance with the contract with the supplier, generally fixed for one to five years at rates different than those charged by Centra as per the above quarterly rates.
3. The above table incorporates changes approved by the Board for both non-Primary Gas and Primary Gas from August 1, 2007 through to May 1, 2012.
4. The Board's RSM considers factors other than natural gas commodity prices including the cost of gas in storage and historical hedging results. Accordingly, the volatility in Primary Gas rates experienced by Centra's Primary Gas customers is reduced as overall rates also take into account operating, amortization, administrative and financial costs.

The information in the above table is graphically shown in the following chart.



# 10

## CENTRA GAS MANITOBA INC.

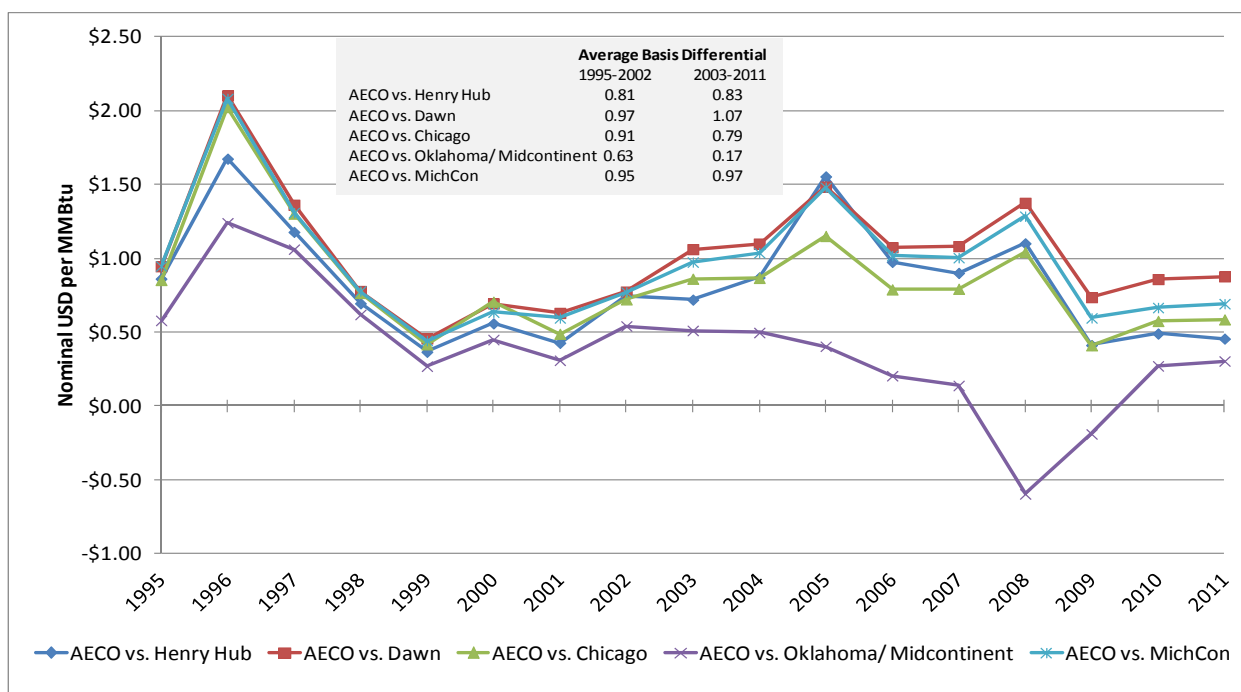
## TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**PUB/CENTRA 2*****Reference: Tab 4 Attachment 1 p. 35 of 117 – Basis Differentials***

Please provide a graph similar to the one shown in ICF's June 2011 report as Figure 13 that shows the historical basis differentials for AECO, Dawn, Henry Hub, Chicago, MichCon, and Oklahoma. Please structure the graph such that all bases are relative to AECO.

**Response provided by ICF:**

The attached graph shows the historical basis differentials for Dawn, Henry Hub, Chicago, MichCon, and Oklahoma relative to AECO.



11

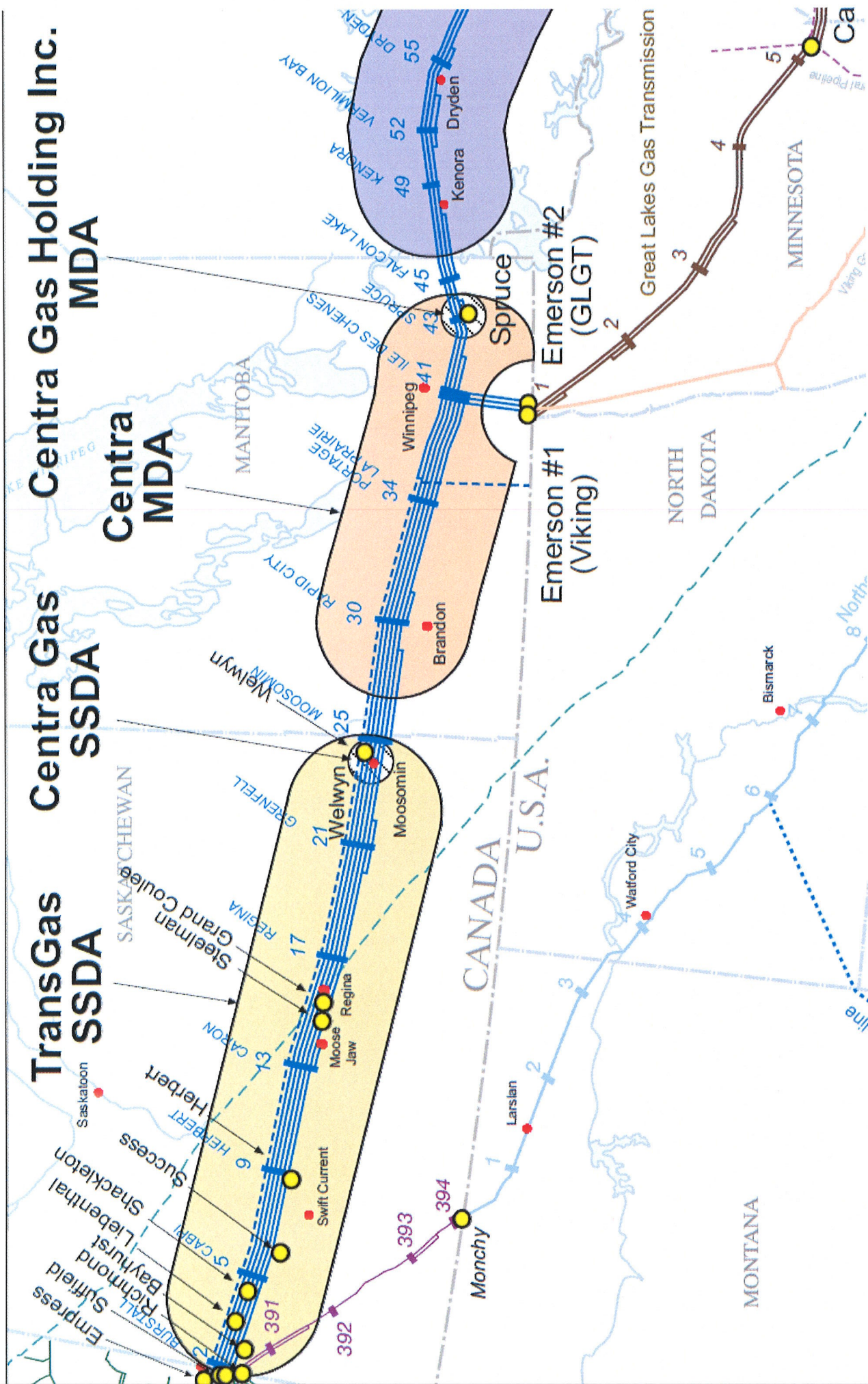


MARCH 23, 2012





**TransGas**      **Centra Gas**      **Centra Gas Holding Inc.**  
**SSDA**      **SSDA**      **MDA**





# 12

# Extent of the Problem

## Illustrative vs. Actual tolls for the 2007-2011 Mainline Settlement

	Illustrative Empress to Eastern Zone \$/GJ	Actual Empress to Eastern Zone \$/GJ	Actual Empress to Manitoba Zone \$/GJ
Proposed Test Year 2007	\$1.02	\$1.03	\$ .32
Test Year 2008	\$1.02	\$1.40	\$ .44
Test Year 2009	\$1.03	\$1.19	\$ .37
Test Year 2010	\$1.04	\$1.64	\$ .49
Test Year 2011	\$1.06	\$2.24	\$ .69

13

Transportation & Storage Portfolio Application

Rates, Capacities and Cost Comparisons

		Tariff Rate (USD/Dth)	Current ANR/GLGT Portfolio			Proposed ANR/GLGT Portfolio		
			Rate (USD/Dth)	Capacity (Dth)	Cost (USD)	Rate (USD/Dth)	Capacity (Dth)	Cost (USD)
1	ANR Storage - Seasonal							
2								
3								
4								
5								
6	Capacity	0.40	0.4000	14,700,000	\$ 5,880,000	0.3020	7,677,318	\$ 2,318,550
7	Deliverability	2.04	1.9160	200,310	\$ 4,605,528	1.6000	89,400	\$ 1,716,480
8								
9	ANR Storage - Annual							
10	Capacity	0.40	N/A	N/A	N/A	0.3125	7,013,846	\$ 2,191,827
11	Deliverability	2.45	N/A	N/A	N/A	1.6000	117,000	\$ 2,246,400
12								
13	Storage totals - Capacity			14,700,000			14,691,164	
14	- Deliverability			200,310			206,400	
15	- Cost				\$ 10,485,528			\$ 8,473,257
16								
17	ANR Transportation							
18	Crystal Falls to storage (summer)	4.25	4.0000	49,711	\$ 1,391,908	3.9250	50,200	\$ 1,379,245
19	Joliet Hub to storage (summer)	4.25	N/A	N/A	N/A	3.9250	7,000	\$ 192,325
20	Storage to GLGT (winter)	4.25	0.3000	197,706	\$ 296,559	0.3040	204,363	\$ 310,632
21	Joliet Hub to storage (winter)	4.25	N/A	N/A	N/A	0.3040	40,000	\$ 60,800
22	ANR SW (annual)	9.25	5.6000	7,450	\$ 500,640	N/A	N/A	N/A
23	ANR SE (summer)	9.75	9.7500	21,212	\$ 1,447,719	N/A	N/A	N/A
24								
25	GLGT Transportation							
26	Emerson to Crystal Falls (summer)	5.298	5.2980	50,567	\$ 1,875,328	3.0420	50,500	\$ 1,075,347
27	ANR to Emerson (winter)	9.456	0.9190	225,000	\$ 1,033,875	2.2800	224,363	\$ 2,557,738
28								
29								
30	Annual fixed costs:				\$ 17,031,556			\$ 14,049,344

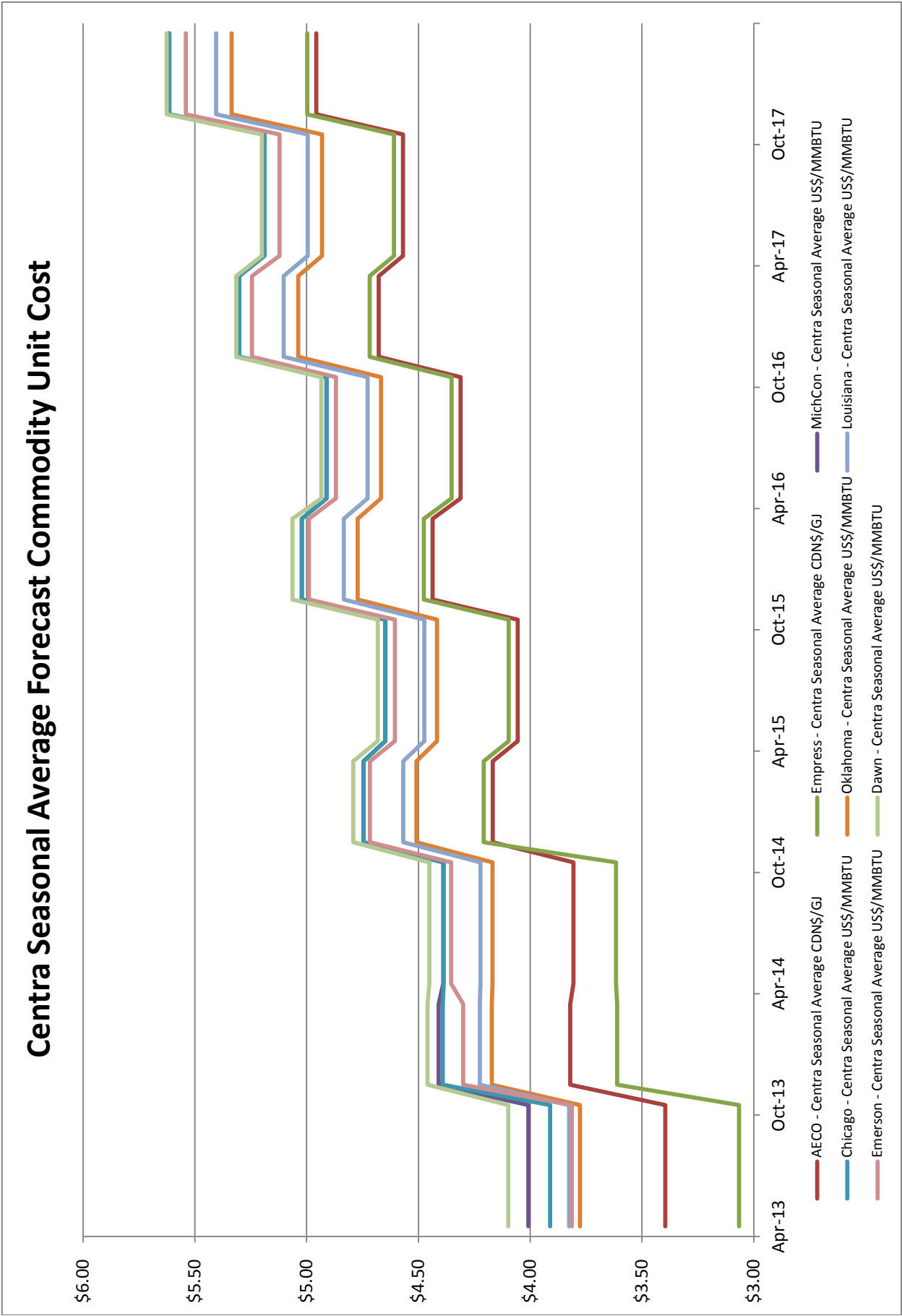
14

Centra Gas Manitoba Inc.  
Transportation & Storage Portfolio Application  
U.S. and Canadian Capacity Units

Tab 8  
Attachment 2  
March 23, 2012

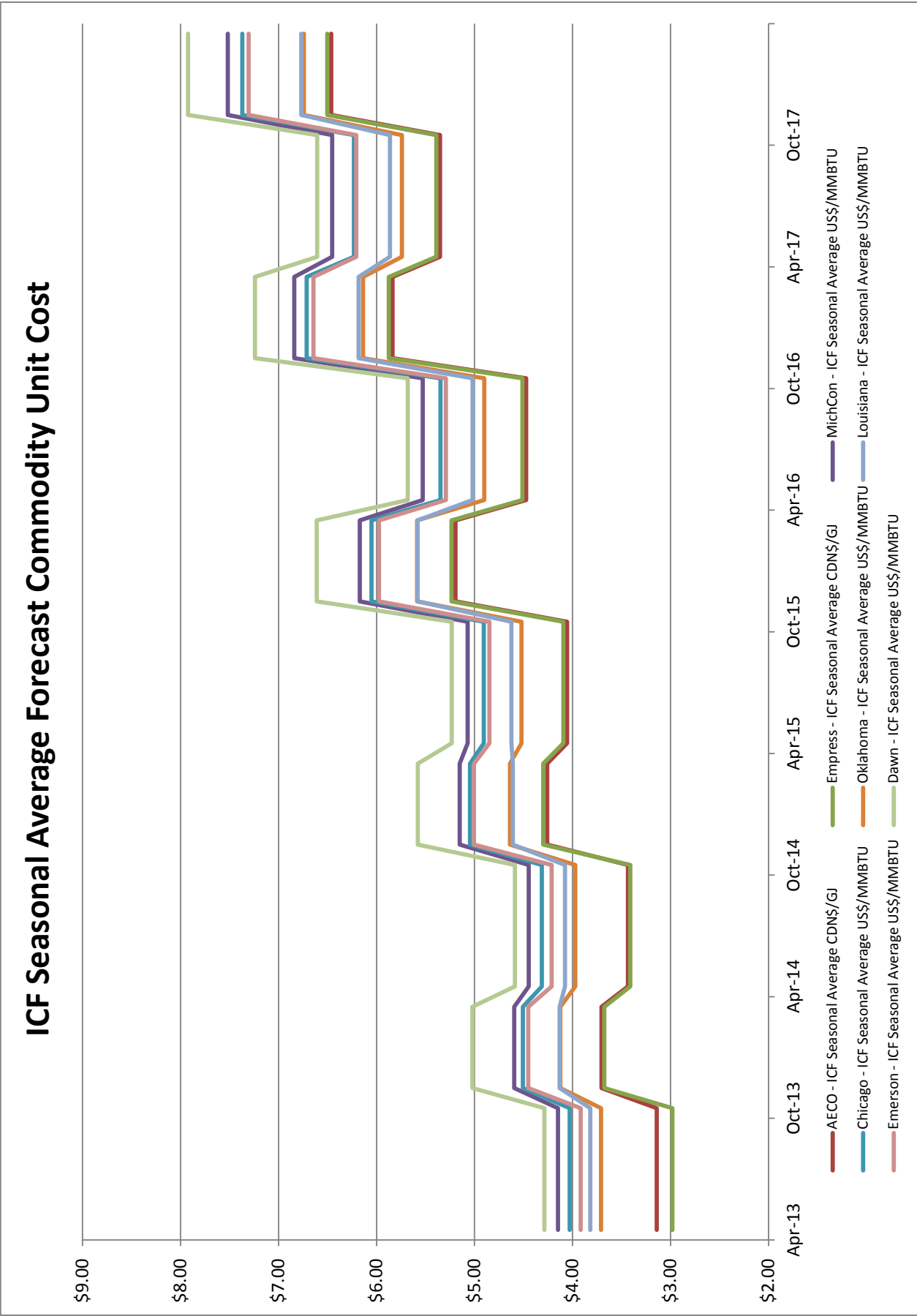
	Current Capacities		Proposed Capacities	
	Dth	GJ	Dth	GJ
<b>ANR Storage - Seasonal</b>				
Capacity	14,700,000	15,509,323	7,677,318	8,100,000
Deliverability	200,310	211,338	89,400	94,322
<b>ANR Storage - Annual</b>				
Capacity	N/A	N/A	7,013,846	7,400,000
Deliverability	N/A	N/A	117,000	123,442
Storage totals - Capacity	14,700,000	15,509,323	14,691,164	15,500,000
- Deliverability	200,310	211,338	206,400	217,764
- Cost				
<b>ANR Transportation</b>				
Crystal Falls to storage (summer)	49,711	52,448	50,200	52,964
Joliet to storage (summer)	N/A	N/A	7,000	7,385
Storage to GLGT (winter)	197,706	208,591	204,363	215,614
Joliet to storage (winter)	N/A	N/A	40,000	42,202
ANR SW (annual)	7,450	7,860	N/A	N/A
ANR SE (summer)	21,212	22,380	N/A	N/A
<b>GLGT Transportation</b>				
Emerson to Crystal Falls (summer)	50,567	53,351	50,500	53,280
ANR to Emerson (winter)	225,000	237,388	224,363	236,716

15





16



17

## CENTRA GAS MANITOBA INC.

## TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA

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**PUB/CENTRA 11*****Reference: Tab 7 p. 13 of 16 – Model Constraints***

(a) Please explain how the maximum capacities that are model constraints were derived or selected, in particular:

- 21,101 GJ/d of Emerson, ANR injection point, or Farwell capacity;
- 42,202 GJ/d of capacity from Joliet to storage;
- 52,753 GJ/d of MichCon supply;
- 54,000 GJ/d and 215,614 GJ/d of TCPL STS capacity; and
- 50,000 GJ/d of unserved capacity.

The following model constraints were embedded in SENDOUT to ensure the model employed robust assumptions regarding supply and transportation options.

Emerson, ANR injection point, and Farwell supply: Among these three transactional points, only Emerson is exchange-traded on electronic trading platforms. Compared to hubs such as AECO and Chicago, Emerson is significantly less liquid with respect to traded volumes and number of transactions, and is generally only supplied by one pipeline (deliveries from TCPL are received by GLGT and Viking pipelines at Emerson). Liquid trading points between interconnecting pipelines are generally supplied by more than one pipeline and are therefore less dependent upon the circumstances of a single pipeline. The

1 ANR injection point and Farwell are not exchange-traded points and cannot be easily  
2 measured with respect to traded volumes and number of transactions. However, as these  
3 points are close to ANR storage facilities in Michigan, it should be possible to acquire  
4 supply at these points from counterparties, albeit without the benefit of live electronic  
5 trading data or published indices to assist price discovery and transparency. For these  
6 reasons, Centra constrained available supply at these points to 20,000 Dth/day (21,101  
7 GJ/day) in the model to avoid over-reliance on these supply options.

8  
9 ANR winter Joliet-to-storage transportation: This transportation capacity was limited to  
10 40,000 Dth/day (42,202 GJ/day) by ANR for the agreed upon rate.

11  
12 MichCon winter supply: Winter purchases of MichCon supply under Option B were limited  
13 to 50,000 Dth/day (52,753 GJ/day) based on a specifically negotiated transportation  
14 service for this supply. Daily purchases of up to 50,000 Dth/day from the MichCon hub  
15 were deemed reasonable given the hub's greater liquidity relative to smaller hubs such as  
16 Emerson.

17  
18 TCPL STS capacity: This capacity is held under a long-term contract that cannot be  
19 readily modified. Due to the characteristics of the contract (rate structure, unequal seasonal  
20 capacities, and different seasonal direction of flow), it cannot be readily modeled in a  
21 manner in which the model freely selects capacity levels.

22  
23 Unserved demand: "Unserved" firm winter market demand of 50,000 GJ/day was specified  
24 in the model in order to emulate Centra's current practice of using firm winter peaking  
25 services to serve firm demand under very cold weather conditions. Rather than discretely  
26 embed peaking services of 50,000 GJ/day in the model that would provide for the last

1 dispatch option in Centra's portfolio, Centra simply specified that 50,000 GJ/day of firm  
2 winter market demand did not have to be "served". SENDOUT therefore only produced a  
3 portfolio that would serve Centra's forecast firm peak day of 470,000 GJ/day less 50,000  
4 GJ/day. 50,000 GJ/day was selected as a reasonable level to allow for the use of firm  
5 peaking services based on Centra's experience arranging these services year-to-year.

6  
7 **(b) Please provide the optimized arrangements and corresponding costs if these**  
8 **constraints are not imposed on the SENDOUT model.**

9  
10 Please see the attachment to this response for the model results. The constraints  
11 referenced in part (a) were removed with the exception of the 42,202 GJ/day ANR winter  
12 Joliet-to-storage transportation and the STS capacities for the reasons noted in part A. The  
13 constraint of 50,000 GJ/day unserved firm demand was removed such that the model could  
14 construct a portfolio that serves all firm demand.

	Futures Curves				ICF Curves			
	Case 1 - ANR		Case 2 - Option B		Case 3 - ANR		Case 4 - Option B	
	y01	y05	y01	y05	y01	y05	y01	y05
Average Annual Costs (CAD millions)*								
Supply	191.0	281.0	189.1	273.1	190.3	343.0	187.5	331.6
Storage	8.9	13.1	8.6	8.7	8.6	18.6	8.6	8.8
Transport	51.3	34.0	55.1	49.5	52.6	31.7	56.2	56.0
Total	251.1	328.0	252.8	331.3	251.5	393.2	252.2	396.3
Storage								
Capacity (PJ)	14.1	22.9	14.3	14.3	13.2	34.2	14.3	14.5
Deliverability (TJ/d)	221.2	279.0	238.2	238.2	223.5	374.1	238.2	242.4
Average Annual Supply (PJ)*								
Empress - Baseload	40.7	17.9	42.4	32.5	41.9	13.2	44.2	43.6
Empress - Swing	6.5	2.0	7.7	6.9	7.0	0.7	7.8	6.1
Emerson	2.3	5.0	1.8	2.7	1.9	6.3	1.4	1.9
MichCon	N/A	N/A	3.5	13.0	N/A	N/A	2.1	3.8
ANR inject point	2.2	22.8	N/A	N/A	1.2	34.3	N/A	N/A
Chicago	0.0	0.0	N/A	N/A	1.0	0.0	N/A	N/A
Farwell	3.8	7.5	N/A	N/A	2.5	0.7	N/A	N/A

\* Annual average over 20 weather years

# 18



- 1 WCSB supply will continue to be a cost effective source of supply for summer storage  
2 injections.

3

	Futures Curves				ICF Curves			
	Case 1 - ANR		Case 2 - Option B		Case 3 - ANR		Case 4 - Option B	
	y01	y05	y01	y05	y01	y05	y01	y05
<b>Average annual costs (CAD millions)*</b>								
Supply	188.5	268.6	187.2	271.6	188.4	330.0	186.8	329.9
Storage	9.2	9.3	9.0	10.0	9.1	11.1	8.3	10.0
Transport	49.2	48.7	51.3	44.8	49.5	47.7	52.3	49.4
Total	246.9	326.5	247.5	326.3	247.0	388.8	247.3	389.2
Incremental cost vs Case 1			0.6	-0.2				
Incremental cost vs Case 3							0.3	0.4
<b>Storage</b>								
Capacity (PJ)	15.6	15.4	14.8	16.5	15.2	19.9	13.9	16.5
Deliverability (TJ/d)	214.1	216.0	228.0	253.2	214.0	236.4	213.6	253.2
<b>Average Annual Supply (PJ)*</b>								
Empress - Baseload	42.9	42.3	44.2	31.4	43.1	39.7	44.6	42.3
Empress - Swing	6.5	6.4	6.9	7.4	6.6	4.2	7.4	5.2
Emerson	1.0	1.0	0.8	0.4	0.9	0.2	0.8	1.0
MichCon	N/A	N/A	3.2	15.7	N/A	N/A	2.4	6.7
ANR injection point	2.7	3.7	N/A	N/A	2.4	3.7	N/A	N/A
Chicago	1.1	0.6	N/A	N/A	1.3	6.9	N/A	N/A
Farwell	1.1	1.4	N/A	N/A	0.9	0.6	N/A	N/A

\*Annual average over 20 weather years.

4

19

## CENTRA GAS MANITOBA INC.

## TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA

---

**PUB/CENTRA 10**

***Reference: Tab 7 p. 7 to 10 of 16 – SENDOUT Modeling***

**Please provide responses in a format similar to Tab 8 Attachment 5.**

- (a) Please explain whether Centra modeled significant changes in the Canada-US exchange rate with the SENDOUT model. If so, please provide the results. If not, please confirm whether such a scenario could be modeled with an exchange rate of \$1.30 CAD/USD and the assumptions that would need to be made to prepare such a model. If such a scenario can be modeled, please provide the optimized arrangements and corresponding costs (in Canadian dollars) for ANR and Option B. If such a scenario will not produce valid output, then please explain the impacts that a large change to the Canada –U.S. dollar exchange rate will have on the total costs of all four options (ANR, B, C, and D) and whether the cost advantage of any option is reduced or enhanced.**

While it is technically possible to model the effect of changes in CAD/USD exchange rates on overall portfolio costs including that of commodity in SENDOUT, the outcomes would not be valid because the relationship between Canadian and U.S. natural gas prices in Canadian dollar equivalents is very complex and multi-faceted. In fact, very little of the historical change in basis differentials between Canadian and U.S. delivery points can be

1 explained by changes in CAD/USD exchange rates. To attempt to model overall portfolio  
2 costs in SENDOUT using CAD/USD exchange rate scenarios different from those  
3 underlying the futures prices from which the originals were derived, while assuming a linear  
4 relationship between the relative prices of Canadian and U.S. sourced commodity in  
5 Canadian dollar equivalents, may yield misleading results.

6  
7 The attachment to this response depicts the most recent 10-year history of monthly  
8 AECO/NYMEX basis differentials (the pre-eminent benchmarks for the market value of  
9 natural gas in Canada and the U.S. respectively) in CAD/GJ, relative to CAD/USD  
10 exchange rates. As the chart indicates, there is little correlation between movements in  
11 CAD/USD exchange rates and the relative cost of Canadian versus U.S. sourced natural  
12 gas denominated in Canadian dollars. During this period, the correlation coefficient  
13 between changes in CAD/USD exchange rates and changes in the relative prices of  
14 Canadian versus U.S. sourced natural gas in Canadian dollars was approximately minus  
15 0.23, indicating a very weak relationship between the two. The associated coefficient of  
16 determination, at approximately 0.05, indicates that only 5% of the change in the relative  
17 price of Canadian versus U.S. sourced gas denominated in \$CAD can be explained by  
18 changes in CAD/USD exchange rates.

19  
20 The effect of each 1% increase or decrease in the CAD/USD exchange rate on the  
21 proposed ANR option would be approximately \$150,000 per year including both fixed and  
22 variable transportation and storage costs. Therefore, an exchange rate of \$1.30 CAD/USD  
23 would have the effect of increasing the annual costs of the ANR storage and transportation  
24 assets by approximately \$4.5 million CAD, relative to CAD/USD exchange rates at parity.  
25 The impact would be similar with Option B.

26

Regarding Options C and D, and as discussed in CAC/Centra 7(g), these options were equal to or higher cost than Option B on all cost measures. One of Options C and D provided the option of having storage rates quoted in either USD/Dth or CAD/GJ. Under the assumption of a significant weakening of CAD relative to USD, storage costs quoted for this Option in CAD/GJ could become lower than Option B storage costs. However, the weakening of CAD cannot make this Option less costly than Option B with respect to any other cost measure. Conversely, any strengthening of CAD relative to USD, regardless of magnitude, would add further to the cost disadvantage of the storage costs for this Option, if quoted in CAD/GJ, relative to Option B.

**(b) Please explain whether Centra modeled significant changes in TCPL tolls – both increases and decreases – with the SENDOUT model. If so, please provide the reference TCPL tolls, optimized arrangements, and corresponding costs for the ANR and B options. If not, please provide the optimized arrangements and corresponding costs for these two options for a TCPL reference toll that is 50% above and 50% below the current EZT of \$2.24/GJ. Please state any assumptions and comment on changes to the optimized portfolio in response to the change in tolls.**

With respect to storage and transportation rate assumptions in PUB 10(b) through (f), Centra notes that the rates negotiated with transportation and storage providers were for specific portfolios. In particular, the discounted rates from ANR for annual storage and for winter Joliet-to-storage transportation included in the Tab 7 model results are specific to the proposed ANR/GLGT portfolio and cannot be assumed to be available in model scenarios that contemplate material deviations in storage and transportation capacities. Accordingly, ANR annual storage and winter Joliet-to-storage transportation were removed from the model in the PUB 10 scenarios, with the exception of PUB 10(d) and (e) which

specifically contemplate annual storage under different parameters than the proposed portfolio. While other rates in the term sheet also cannot be assumed to be available under different portfolio configurations, Centra has maintained the remaining rates in the model for discussion purposes only. Regarding the toll premiums for TCPL STFT used in the Tab 7 model results, these assumptions have been maintained in the PUB 10 scenarios. Please see the response to CAC/Centra 8(e) for model results that remove this STFT assumption.

Centra modeled TCPL toll increases and decreases of 35% relative to the tolls used in the model results reported in Tab 7, which were derived from a TCPL reference toll of \$2.24/GJ. The increased and decreased toll scenarios resulted in TCPL reference tolls of \$3.02/GJ and \$1.46/GJ. Please see the attachment to this response for the ANR and Option B model results using futures and ICF price curves.

In general, increases in TCPL tolls result in higher storage capacity and storage deliverability, while decreases in TCPL tolls result in lower storage capacity and storage deliverability. The exception is y05 of the ICF curves in which higher storage capacity is maintained despite the reduction in TCPL tolls, presumably to take advantage of the relatively wider summer-winter price differentials in y05 of the ICF curves. The reductions in storage capacity and storage deliverability in the other lower TCPL toll scenarios demonstrate two modeling caveats:

- 1) A reduction in TCPL tolls should increase the demand for gas from AECO and Empress, putting upward pressure on gas prices at AECO and Empress and thus offsetting the reduction in TCPL tolls with respect to the landed cost of WCSB gas in downstream markets. Due to the complex relationship between tolls and gas prices,

1 this effect cannot be readily modeled and is not considered in the model results, as  
2 Empress prices are held constant despite the toll changes.

3 2) As the model has perfect foresight of the weather and Manitoba gas load it needs to  
4 serve every day, the model has no need to make intra-day or 5 a.m. nomination  
5 changes to respond to intra-day weather-driven load swings. Accordingly, the model  
6 reduces storage capacity and storage deliverability in response to significant  
7 reductions in TCPL tolls (with no corresponding upward effect on AECO and  
8 Empress prices). Storage capacity and storage deliverability provide an LDC with  
9 reliable swing service in the winter months at all nomination cycles, including when  
10 gas markets are closed, in order to respond to weather-driven load swings, mitigate  
11 pipeline balancing fees, and serve the market requirement for natural gas. This  
12 important benefit of storage is not considered in the model.

13  
14 Also of note, in six of the eight cases in the attachment to this response, the ANR portfolio  
15 has a small total cost advantage over the Option B portfolio.

16  
17 **(c) Please model with SENDOUT optimized portfolio arrangements using the Alternate**  
18 **Market Scenario pricing (Tight Gas, Optimistic Mainline Drivers, Pessimistic Mainline**  
19 **Drivers) developed by ICF in its June 2011 report to Centra. Please provide the**  
20 **optimized arrangements and corresponding costs for the ANR and B options for**  
21 **each pricing scenario. Please state any assumptions and the TCPL reference tolls**  
22 **embedded into each Alternate Market Scenario.**

23  
24 Among ICF's alternate market scenarios, ICF modeled TCPL tolls ranging from EZT's of  
25 \$1.00/GJ to \$3.00/GJ on the Optimistic Mainline Drivers and Pessimistic Mainline Drivers  
26 scenarios. In response to this IR, Centra has performed SENDOUT modeling on two

bookend scenarios as follows: \$1.00/GJ toll on the Optimistic Mainline Driver scenario; and \$3.00/GJ toll on the Pessimistic Mainline Driver scenario. The price curves in these scenarios are based on ICF's October 2010 Base Case. Please see the attachment to this response for the model results.

**(d) Please model 100% annual storage for the ANR option, using the futures pricing and ICF base case pricing as price inputs, and provide the optimized arrangements and corresponding costs. Please compare this to the proposed portfolio.**

Centra notes that the rate agreed to with ANR for annual storage was specifically for annual storage capacity of 7.4 PJ. For the purpose of modeling 100% annual storage for this IR, Centra utilized a higher annual storage rate based on earlier negotiations. Please see attachment to this response for the model results.

In comparison to the ANR SENDOUT results in Tab 7 which assumed 7.4 PJ of annual storage, the 100% annual ANR storage scenario tends to reduce storage capacity and purchase more winter gas from Chicago to manage storage levels. Despite reducing storage capacity, overall portfolio costs are the same or slightly greater under this scenario, as the unit cost of storage has increased.

Centra also notes that due to the model's perfect foresight of commodity prices, weather, and the exact load it has to serve every day, the model can execute a winter buying strategy that may include winter purchases for injection into storage starting in early November if the model knows it will have to serve a cold winter, thus enabling the model to perfectly reduce the size of storage. An LDC would lack this perfect foresight, making cost



savings achieved through reduced storage capacity and early and frequent winter gas purchases to manage storage levels less feasible in reality.

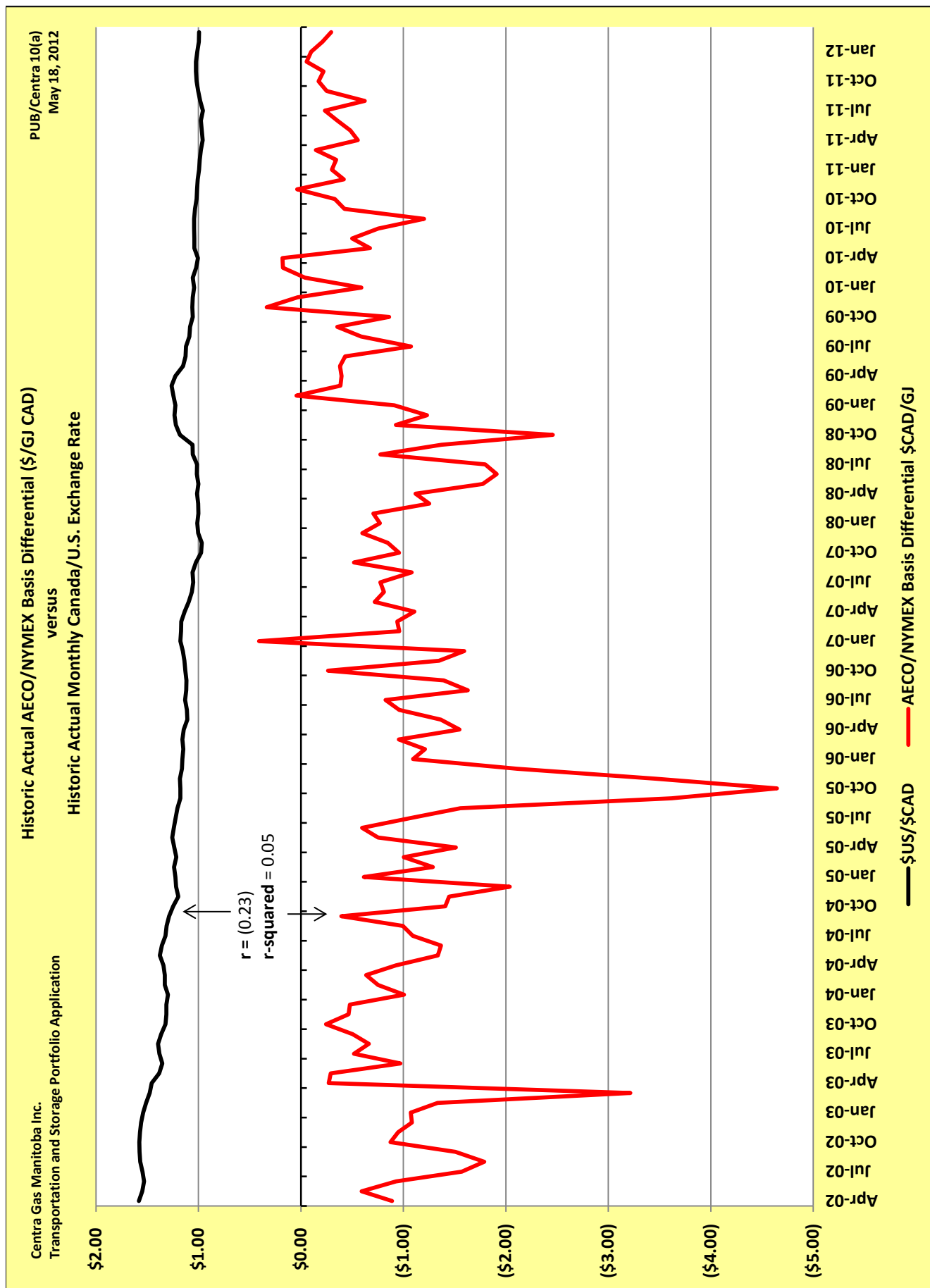
**(e) Please model the ANR portfolio but constraining the maximum effective capacity to 15.5 PJ and allowing for the maximum cyclability offered by ANR. Please use the futures pricing and ICF base case pricing as price inputs, and provide the optimized arrangements and corresponding costs. Please compare this to the proposed portfolio.**

Centra notes that the rate agreed to with ANR for annual storage was specifically for annual storage capacity of 7.4 PJ. For the purpose of modeling 100% annual storage for this IR, Centra utilized a higher annual storage rate based on earlier negotiations. Please see attachment to this response for the model results.

With storage fixed at 10.9 PJ (15.5 PJ / 1.42 cycles), the model relies more heavily on WCSB supply transported on TCPL from Empress than in the Tab 7 ANR SENDOUT results, as reflected in the Empress supply quantities and increase in transportation costs. Overall portfolio costs are somewhat higher than the ANR SENDOUT results in Tab 7. Presumably, this lower storage capacity requires the model to choose between more frequent cycling of winter US gas purchases to manage storage levels versus buying more winter WCSB supply transported on TCPL to avoid storage depletion.

**(f) Please model with SENDOUT both 50 and 60 day deliverability for ANR storage. Report the optimum storage and transportation configuration and corresponding costs for each deliverability option. Please compare these results to the proposed ANR portfolio.**

1  
2 The 50 and 60 day storage service model results tend to decrease storage relative to the  
3 Tab 7 ANR SENDOUT results, particularly the 50 day service. Reduced storage capacity  
4 appears to result in generally greater reliance on WCSB supply transported on TCPL from  
5 Empress, as reflected in the Empress supply quantities and increase in transportation  
6 costs. Overall portfolio costs are somewhat higher than the ANR SENDOUT results in Tab  
7 7. These effects are more pronounced for the 50 day service than the 60 day service.  
8 Please see the attachment to this response.



Centra Gas Manitoba Inc.  
 Transportation & Storage Portfolio Application  
 ANR and Option B model results with TCPL toll sensitivities

PUB/Centra 10(b)

May 18, 2012

TCPL tolls:	ANR - Futures Curves				ANR - ICF Curves			
	+35%		-35%		+35%		-35%	
	y01	y05	y01	y05	y01	y05	y01	y05
<b>Average Annual Costs (CAD millions)*</b>								
Supply	188.7	269.0	186.8	269.4	188.0	329.9	186.3	329.3
Storage	10.1	11.1	7.3	5.7	9.6	11.9	7.3	10.5
Transport	62.2	59.7	37.8	37.7	63.5	58.9	38.0	34.8
Total	261.0	339.7	231.8	312.7	261.1	400.7	231.5	374.5
<b>Storage</b>								
Capacity (PJ)	18.2	20.0	12.2	8.7	17.2	22.1	12.2	19.3
Deliverability (TJ/day)	221.6	236.2	174.1	149.3	214.7	245.5	174.2	216.0
<b>Average Annual Supply (PJ)*</b>								
Empress - Baseload	42.0	40.0	44.7	37.4	42.8	36.9	44.7	40.7
Empress - Swing	5.6	4.4	9.1	14.0	6.3	3.5	9.3	4.9
Emerson	1.1	1.4	0.5	0.4	1.0	0.3	0.3	0.2
ANR inject point	2.1	4.4	0.1	2.5	2.1	3.7	0.1	3.6
Chicago	3.3	3.1	0.3	0.0	2.2	9.4	0.2	5.5
Farwell	1.1	1.8	0.6	0.6	0.8	1.5	0.6	0.4
<b>Option B - Futures Curves</b>					<b>Option B - ICF Curves</b>			
TCPL tolls:	+35%		-35%		+35%		-35%	
	y01	y05	y01	y05	y01	y05	y01	y05
<b>Average Annual Costs (CAD millions)*</b>								
Supply	189.7	271.4	187.7	270.9	187.3	332.1	186.3	329.9
Storage	11.5	12.3	6.5	6.1	9.1	12.3	6.1	9.2
Transport	60.2	55.2	38.8	35.7	65.1	57.7	39.6	36.3
Total	261.3	338.8	233.0	312.6	261.5	402.0	232.0	375.4
<b>Storage</b>								
Capacity (PJ)	19.0	20.3	10.8	10.0	15.2	20.3	10.2	15.2
Deliverability (TJ/day)	253.2	253.2	165.9	167.5	253.2	253.2	170.1	253.2
<b>Average Annual Supply (PJ)*</b>								
Empress - Baseload	40.7	30.7	42.6	33.7	43.7	36.0	44.7	43.5
Empress - Swing	4.5	6.1	11.3	13.0	6.5	4.2	10.0	5.9
Emerson	1.3	0.4	0.5	0.3	0.9	1.3	0.3	0.8
MichCon	8.6	17.7	0.8	7.9	4.0	13.6	0.2	5.0

\*Annual average over 20 weather years.

Centra Gas Manitoba Inc.

PUB/Centra 10(c)

Transportation &amp; Storage Portfolio Application

ANR and Option B model results using ICF market scenarios

May 18, 2012

		ANR			
TCPL toll/scenario:		\$1.00 - Optimistic y01 y05			\$3.00 - Pessimistic y01 y05
<b>Average Annual Costs (CAD millions)*</b>					
Supply		246.3	332.6		207.0 329.1
Storage		6.3	6.2		8.5 9.5
Transport		29.1	29.2		66.2 63.5
Total		281.6	367.9		281.6 402.1
<b>Storage</b>					
Capacity (PJ)		11.0	10.8		14.6 17.6
Deliverability (TJ/d)		150.7	151.6		211.1 215.0
<b>Average Annual Supply (PJ)*</b>					
Empress - Baseload		44.9	44.9		43.9 42.9
Empress - Swing		9.4	9.6		7.8 6.3
Emerson		0.5	0.4		0.7 0.2
ANR injection point		0.0	0.0		1.1 0.3
Chicago		0.1	0.1		0.9 5.0
Farwell		0.3	0.3		0.7 0.6

		Option B			
TCPL toll/scenario:		\$1.00 - Optimistic y01 y05			\$3.00 - Pessimistic y01 y05
<b>Average Annual Costs (CAD millions)*</b>					
Supply		247.7	334.1		205.3 328.6
Storage		5.1	5.1		7.3 7.5
Transport		29.5	29.5		69.3 68.4
Total		282.2	368.7		281.9 404.5
<b>Storage</b>					
Capacity (PJ)		8.7	8.7		12.5 12.8
Deliverability (TJ/d)		145.2	145.1		208.8 213.1
<b>Average Annual Supply (PJ)*</b>					
Empress - Baseload		42.7	42.8		45.0 44.8
Empress - Swing		11.5	11.6		8.4 8.0
Emerson		0.7	0.6		0.5 0.6
MichCon		0.2	0.2		1.3 1.6

\*Annual average over 20 weather years.

Centra Gas Manitoba Inc.  
 Transportation & Storage Portfolio Application  
 Model results - All Annual Storage

PUB/Centra 10(d)

May 18, 2012

	100% Annual ANR Storage				
	Futures Curves			ICF Curves	
	y01	y05		y01	y05
<b><u>Average Annual Costs (CAD millions)*</u></b>					
Supply	189.1	269.8		189.0	330.3
Storage	8.8	9.2		8.6	11.4
Transport	49.1	48.0		49.4	47.8
Total	247.0	327.0		247.0	389.4
<b><u>Storage</u></b>					
Capacity (PJ)	13.3	14.0		12.7	19.1
Deliverability (TJ/d)	214.1	216.6		214.1	238.2
<b><u>Average Annual Supply (PJ)*</u></b>					
Empress - Baseload	42.7	40.5		42.9	40.4
Empress - Swing	6.7	6.7		6.8	4.4
Emerson	1.0	0.9		0.9	0.2
ANR injection point	1.1	3.9		0.7	3.7
Chicago	2.2	1.5		2.8	6.2
Farwell	1.6	1.7		1.1	0.4

\*Annual average over 20 weather years.

Centra Gas Manitoba Inc.

PUB/Centra 10(e)

Transportation &amp; Storage Portfolio Application

Model results - 10.9 PJ All Annual Storage

May 18, 2012

		10.9 PJ All Annual ANR Storage			
		Futures Curves		ICF Curves	
		y01	y05	y01	y05
<b>Average Annual Costs (CAD millions)*</b>					
Supply		188.1	270.2	187.9	332.8
Storage		7.7	7.9	7.7	7.9
Transport		51.9	49.8	51.9	51.3
Total		247.6	327.8	247.4	391.9
<b>Storage</b>					
Capacity (PJ)		10.9	10.9	10.9	10.9
Deliverability (TJ/d)		199.1	202.4	199.6	206.3
<b>Average Annual Supply (PJ)*</b>					
Empress - Baseload		43.7	38.6	43.9	43.5
Empress - Swing		8.3	9.2	8.3	7.7
Emerson		0.7	0.5	0.6	0.2
ANR inject point		0.0	4.0	0.0	0.0
Chicago		1.3	1.4	1.4	2.8
Farwell		1.3	1.4	1.0	1.1

\*Annual average over 20 weather years.

Centra Gas Manitoba Inc.

PUB/Centra 10(f)

Transportation &amp; Storage Portfolio Application

Model results - ANR Storage 50 day and 60 day Services

May 18, 2012

	ANR Storage - 50 Day Service			
	Futures Curves		ICF Curves	
	y01	y05	y01	y05
<b>Average Annual Costs (CAD millions)*</b>				
Supply	187.0	268.0	186.7	329.8
Storage	9.0	9.1	8.7	12.0
Transport	52.2	50.9	52.7	48.7
Total	248.2	327.9	248.1	390.4
<b>Storage</b>				
Capacity (PJ)	12.8	12.8	12.4	16.9
Deliverability (TJ/d)	255.9	255.5	248.7	337.3
<b>Average Annual Supply (PJ)*</b>				
Empress - Baseload	44.2	41.0	44.3	41.9
Empress - Swing	8.2	8.8	8.4	5.0
Emerson	0.8	0.7	0.7	0.2
ANR inject point	0.6	3.4	0.4	4.4
Chicago	0.6	0.2	0.5	3.1
Farwell	0.8	0.9	0.7	0.7

	ANR Storage - 60 Day Service			
	Futures Curves		ICF Curves	
	y01	y05	y01	y05
<b>Average Annual Costs (CAD millions)*</b>				
Supply	187.4	267.8	187.2	329.9
Storage	9.3	9.2	8.9	11.5
Transport	51.0	50.2	51.5	48.4
Total	247.6	327.1	247.5	389.7
<b>Storage</b>				
Capacity (PJ)	14.5	14.1	13.9	17.8
Deliverability (TJ/d)	241.6	235.8	232.1	295.8
<b>Average Annual Supply (PJ)*</b>				
Empress - Baseload	43.8	42.1	43.9	41.3
Empress - Swing	7.4	7.8	7.8	4.7
Emerson	0.8	0.8	0.8	0.2
ANR inject point	1.6	3.2	1.2	4.3
Chicago	0.7	0.2	0.7	4.1
Farwell	0.8	0.9	0.8	0.7

\*Annual average over 20 weather years.



20



## Conclusions of Supply Portfolio Optimization Analysis

Conducted For Centra Manitoba by ICF International

February 2012

Prepared By:

Michael Sloan: Msloan@icfi.com

Bruce Henning: Bhenning@icfi.com

### Overview of Analysis

As part of our engagement to review Centra Manitoba (Centra) supply portfolio options, ICF conducted a supply portfolio optimization analysis of potential future natural gas supply options. The analysis considered the range of reasonable Centra supply portfolio options for a set of potential price and weather conditions within the five year period starting April 2013. The analysis considered daily dispatch requirements, daily natural gas prices, design day capacity requirements, pipeline capacity options, and storage space and deliverability options, and optimized the supply portfolio on an annual basis for five years, for 30 different five year weather scenarios developed using the most recent 34 years of actual weather data.

The analysis focused on the following questions:

- 1) Should Centra continue to rely on U.S. storage to meet winter load requirements?
- 2) If Centra should continue to rely on U.S. storage to meet winter load requirements, which storage options would likely provide the best value, and how much storage capacity and deliverability would be needed to optimize the Centra supply portfolio?
- 3) What sources of natural gas supply are likely to be the most economic source of natural gas for meeting direct (e.g., not from storage) natural gas requirements?
- 4) What sources of natural gas supply are likely to provide the most economic source of natural gas for filling storage?

## Approach

ICF used two proprietary natural gas market forecasting models to conduct the analysis:

- 1) The ICF Proprietary Gas Markets Model (GMM) was used to provide monthly natural gas price projections for all of the potential natural gas purchase points considered viable by Centra. The GMM was run for 30 different weather scenarios based on actual North American Weather patterns to develop 30 different price forecasts reflecting the impact of weather on natural gas commodity prices by location. Monthly natural gas price forecasts from ICF's October 2011 Base Case were used to develop daily natural gas prices for each key market center based on daily HDD and natural gas price volatility.
- 2) The ICF proprietary Natural Gas Storage and Supply Portfolio Optimization Model (NGSSPOM) was used to optimize natural gas commodity and capacity requirements on an annual basis, based on daily load requirements and natural gas prices over a wide range of potential weather conditions. The optimization was based on lowest overall portfolio cost.

The daily dispatch requirements used in the NGSSPOM were developed based on an assessment of daily weather volatility, combined with 34 years of actual monthly weather data for the Centra service territory, with load projected based on algorithms developed from the Centra load forecasts.

ICF completed the optimization analysis considering two different storage options with different storage providers and for storage at different facilities. While a wide range of potential storage and pipeline options were considered, the number of storage options was narrowed to two primary options based on storage capacity availability, cost, and operational considerations before the comprehensive optimization analysis was conducted.

The two options are referred to as Storage Option A and Storage Option B. For each storage option, ICF evaluated three different levels of storage deliverability. These included 50-Day, 60-Day, and 70-Day storage deliverability.

The specific characteristics of the two different storage options were based on negotiated rates and services offered by the two different storage providers. Both storage providers developed specific proposals to provide service to Centra. The proposals were provided to Centra in confidence. Storage Option A has been selected by Centra as the preferred option, and can be identified as a renewal under renegotiated terms of the existing storage contract with ANR Storage. Because Storage Option B was not selected, we do not identify the specific storage provider associated with Storage Option B.

ICF relied on Centra to provide accurate cost and capacity availability data for all pipeline and storage capacity options considered.

## Interpretation of Optimization Modeling Results

It is important to recognize that no optimization modeling approach can consider all of the factors that should be considered by an LDC in determining its actual supply portfolio. Hence, the results of the optimization analysis should be viewed as one additional source of information during the portfolio development process.

Like all optimization analyses, this analysis includes several fundamental simplifications that must be considered when evaluating the modeling results. These simplifications include:

- 1) The optimization modeling approach relies on perfect foresight considering weather conditions and natural gas prices. This tends to increase the value of supply options that facilitate daily and seasonal flexibility in natural gas purchasing and storage utilization decisions relative to options that rely on longer term decisions such as monthly gas purchase contracts.
- 2) The optimization approach used in this analysis selected the least cost supply portfolio option. There is often a difference between the “least cost” and the “best” portfolio option based on factors, such as market risk, company operational guidelines, regulatory factors, environmental and sustainability concerns, and other issues that are difficult to define in strict economic terms.
- 3) The supply portfolio was optimized on an annual basis, and each different weather scenario considered in the analysis resulted in a different optimized portfolio. We have summarized the results of the analysis across the range of scenario results and provided the range of optimized solutions for key elements of the analysis. However, selection of final portfolio from among the range of optimized solutions depends on a range of factors including risk tolerance and other issues.

## Analysis Results:

- 1) The ICF optimization analysis indicates that Storage Option A (ANR Storage) is a slightly better value than Storage Option B. While the two options are very close in value, with about a one percent difference in average supply portfolio costs, Option A (ANR Storage) is preferred under most scenarios. (See Table 1 for numeric results).
  - a. For normal weather, Option A (ANR Storage) provides slightly higher value than Option B under all different space and deliverability scenarios.
  - b. When averaged across all of the different weather scenarios evaluated, Option A (ANR Storage) provides slightly higher value than Option B.

- 2) The ICF optimization analysis suggests a small economic benefit for higher (50 day) deliverability storage when compared to the 60-day or 70-day options. (See Table 1 for numeric results). The additional costs of higher deliverability storage are offset in part by lower space requirements, and by the ability to take greater advantage of daily changes in natural gas prices to optimize the mix of gas purchases, storage injections, and storage withdrawals on a daily basis.
- 3) The optimum level of storage capacity depends on the specific storage option considered, the amount of deliverability associated with the storage capacity, and the specific weather scenario being evaluated.

The distribution of optimum storage capacity for the six different storage options considered (Storage Option A with 50, 60, and 70 day deliverability, Storage Option B with 50, 60, and 70 day deliverability) is shown in Figure 1. As shown in Figure 1, extreme weather can have a significant impact on the optimum level of storage capacity. However, the optimum level of storage capacity for most of the weather cases fall within a fairly narrow range. For about 50 percent of all the weather cases evaluated for each storage option for 50 days of deliverability, increasing to about 70 percent of all weather cases evaluated for the 70-day storage options, the optimized level of storage capacity falls within a range of about two PJ of working gas capacity.

- 4) The ICF optimization analysis indicates that Canadian gas purchased to the west of the Centra system, and transported to the Centra Service Territory will remain the most economic source of gas for the Centra System for about 80 percent of Centra's commodity purchases. (See Table 3 for numeric results).
  - a. The ICF optimization analysis indicates that Canadian gas purchased to the west of the Centra system will remain the most economic source for the preponderance of natural gas purchased to meet direct (e.g., not injected into storage) customer requirements.
  - b. The ICF optimization analysis indicates that Canadian gas purchased to the west of the Centra system, and transported to storage in the U.S will remain the most economic source for the majority of the natural gas to be injected into storage.

**Table 1: Impact of Alternative Storage Options on Overall Supply Portfolio Costs (\$)**

	Impact of Portfolio Options on Overall Portfolio Cost Volatility					
<b>Average</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>5-Year Average</b>
Option A (ANR) 50-Day Storage	324,026,162	339,508,033	354,687,153	374,142,114	389,486,484	356,369,989
Option A (ANR) 60-Day Storage	324,888,222	340,438,246	355,708,563	375,656,876	391,568,115	357,652,005
Option A (ANR) 70-Day Storage	327,044,266	343,867,473	358,657,803	376,921,360	396,321,578	360,562,496
Option B 50-Day Storage	326,736,969	342,582,523	358,328,804	379,023,752	394,586,243	360,251,658
Option B 60-Day Storage	327,193,644	343,045,176	358,820,470	379,826,512	396,115,156	361,000,192
Option B 70-Day Storage	329,764,024	345,696,483	361,484,194	383,038,803	399,916,955	363,980,092
<b>Standard Deviation</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>5-Year Average</b>
Option A (ANR) 50-Day Storage	53,003,366	43,486,419	34,868,318	55,489,334	45,116,673	46,392,822
Option A (ANR) 60-Day Storage	52,670,383	43,674,552	34,477,010	55,660,476	45,610,700	46,418,624
Option A (ANR) 70-Day Storage	52,222,326	43,988,987	34,033,471	55,681,280	46,032,297	46,391,672
Option B 50-Day Storage	53,730,657	44,239,443	35,247,033	57,151,367	46,170,257	47,307,751
Option B 60-Day Storage	53,396,171	44,471,460	34,736,123	57,018,148	46,387,469	47,201,874
Option B 70-Day Storage	53,000,358	44,877,684	34,341,684	56,900,157	53,113,526	48,446,682
<b>Standard Deviation/Average</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>5-Year Average</b>
Option A (ANR) 50-Day Storage	0.164	0.128	0.098	0.148	0.116	0.131
Option A (ANR) 60-Day Storage	0.162	0.128	0.097	0.148	0.116	0.130
Option A (ANR) 70-Day Storage	0.160	0.128	0.095	0.148	0.116	0.129
Option B 50-Day Storage	0.164	0.129	0.098	0.151	0.117	0.132
Option B 60-Day Storage	0.163	0.130	0.097	0.150	0.117	0.131
Option B 70-Day Storage	0.161	0.130	0.095	0.149	0.133	0.133

**Table 2: Range of Optimized Storage Capacity Due to Weather and Price Variation**

Optimum Working Gas Storage Capacity (PJ)					
	<b>Average</b>	<b>Maximum</b>	<b>Minimum</b>	<b>Median</b>	<b>75th Percentile</b>
Option A (ANR) 50-Day Storage	15.61	30.00	10.39	13.15	19.88
Option A (ANR) 60-Day Storage	16.24	29.80	12.47	13.87	19.17
Option A (ANR) 70-Day Storage	17.03	29.28	14.54	15.09	18.09
Option B 50-Day Storage	14.10	21.85	10.78	12.41	17.99
Option B 60-Day Storage	15.65	22.64	12.94	12.94	17.76
Option B 70-Day Storage	16.79	26.27	15.09	15.09	16.98

Figure 1: Optimized Storage Capacity Distribution

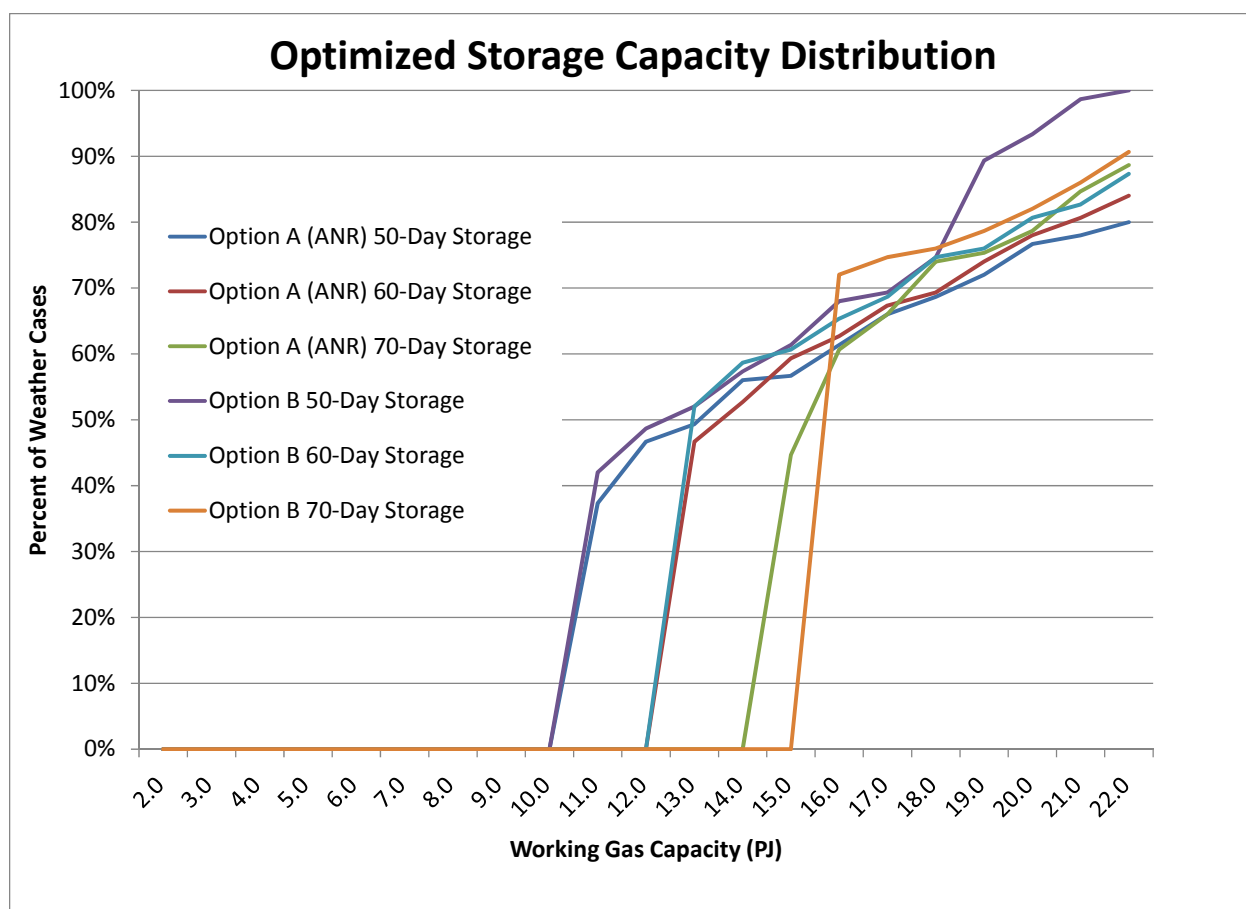


Table 3: Location of Optimized Natural Gas Commodity Purchases

Location of Natural Gas Commodity Purchases						
Average of Optimized Values for Five Years						
(April 2013 through March 2017)						
Average of 30 Years of Actual Weather						
	Storage Option A			Storage Option B		
	50-Day	60-Day	70-Day	50-Day	60-Day	70-Day
<b>WCSB Purchases</b>	79.7%	79.6%	79.3%	83.9%	82.7%	81.7%
<b>Direct Delivery to Centra Citygate</b>	1.1%	1.0%	1.0%	1.3%	1.2%	1.1%
<b>Emerson Purchases</b>	0.3%	0.4%	0.4%	0.9%	1.0%	1.1%
<b>U.S. Midwest Market Area Purchases</b>	11.0%	9.7%	8.4%	13.9%	15.1%	16.1%
<b>U.S. Supply Basin Purchases</b>	7.9%	9.3%	10.8%	0.0%	0.0%	0.0%

21



## CENTRA GAS MANITOBA INC.

## TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA

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**PUB/CENTRA 18*****Reference: PUB/Centra 17; Tab 8 – Western Transportation Service***

- (a) With the increased flexibility in the proposed portfolio to access different sources of supply, especially increased supplies from US markets, the proportion of Supplemental gas consumed by Centra's customers is expected to increase. Please explain how this will affect Western Transportation Service customers and Centra's Fixed Rate Primary Gas Service customers.**

Centra's current rate design considers U.S. gas purchases to be Supplemental Gas. An increase in the level of U.S. gas purchases in place of corresponding purchases of Western Canadian supply would result in a reduction in the percentage of a customers' annual consumption to be billed as Primary Gas and an increase in the percentage to be billed as Supplemental Gas.

Such an occurrence would require Centra to adjust billing percentages for all customers to reflect the respective Primary Gas and Supplemental Gas percentages. For customers under fixed-rate fixed-term arrangements, provided either through gas marketers or through Centra by way of its Fixed Rate Primary Gas Service, there would be proportionally less annual consumption to be billed at their contracted Primary Gas rate,

1 while proportionally more of their consumption would be billed at the Supplemental Gas  
2 rate.

3  
4 **(b) Please identify any changes that Centra is implementing or considering for the WTS**  
5 **or FRPGS, including in respect of billing percentages.**

6  
7 Centra recognizes that the adoption of a new gas portfolio may have impacts on both  
8 commodity rate design and the structure of WTS. However, it should be noted that the  
9 adoption of the proposed portfolio may not result in a substantial change to the annual  
10 Primary/Supplemental Gas split, and therefore the impacts of increased U.S. gas  
11 purchases may be relatively minor.

12  
13 Centra has not yet implemented any changes to commodity rate design or WTS, but it has  
14 begun preliminary work on examining the possible impacts of the proposed new  
15 arrangements on commodity rate design. As noted in the response to PUB/Centra 19(a),  
16 the impacts of the proposed portfolio on billing percentages will not materialize until after  
17 the start of the 2013/14 Gas Year on November 1, 2013. Centra is of the view that there is  
18 sufficient time between the approvals requested in this Application and the appearance of  
19 any impacts on billing percentages to facilitate an examination of the matter and a public  
20 review of possible alternatives.

22

2012-04-27 14:01:46

Submitted by user: cfoulkes

## Renewal Notification

**Centra Gas Manitoba Inc.** hereby requests, pursuant to Section 8 of TransCanada's FT Toll Schedule, that TransCanada accept this letter as notice of our election to exercise the Renewal Option for the above noted contracts which expire on **2012/10/31**. We have reviewed and understand the provisions of Section 8 of the FT Toll Schedule, including the requirement for this written notice to be received by TransCanada not less than six (6) months before the termination date specified in the FT Contract.

**Centra Gas Manitoba Inc.** herein requests that the following FT Contracts be renewed effective **2012/11/1** for the following periods and Contract Demand:

Shipper: **Centra Gas Manitoba Inc.**  
 Contact Person: **Christine Foulkes**  
 Email: **cdfoulkes@hydro.mb.ca**  
 Telephone: **204-360-5210**

MNEC	Contract #	Primary Receipt Location	Primary Delivery Location	Contract Demand (GJ/day)	Contract Demand Renewed* (GJ/day)	Current End Date	New End Date**
CENM	3036	Empress	Centram SSDA	1200	1200	2012/10/31	2013/10/31
CENM	37575	Empress	Centram MDA	110000	90000	2012/10/31	2013/10/31

\* Renewed amount cannot exceed Contract Demand.      \*\* Renewal term must be for a minimum of one year.

23

**CENTRA GAS MANITOBA INC.**  
**2010/11 COST OF GAS APPLICATION**  
**RESPONSE TO INFORMATION REQUESTS OF**  
**THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**PUB/CENTRA 4**

***Reference: Tab 3 Page 8 and 9 of 15 – Transportation Load Factor***

**(a) Please give Centra's transportation load factor on the Transcanada Mainline since 2003/04.**

Please see attachments 1 - 6.

**(b) Please explain whether a summer/winter price differential exists at the AECO hub. If possible, please demonstrate graphically as well.**

No systematic summer/winter price differential exists at the AECO hub. Attachment 1 provides the actual historical summer/winter price differentials at AECO 'C' for the past ten gas years for both monthly and daily spot price indices. Attachment 2 provides this same data in a graphical format as requested.

**(c) Please give Centra's under-contracted capacity relative to the firm peak day, if any exists. Please state the risk to Centra of not having this capacity contracted, how the risk will be addressed and the worst-case cost consequences.**

Centra does not have any uncontracted capacity relative to the design firm peak day. The risk of not having this capacity contracted is the potential inability to meet the Firm market

1 requirement and “draft” (provide less supply to the delivery area than is consumed) the  
2 TCPL Mainline. If TCPL issues an Emergency Operating Conditions notice, TCPL can  
3 charge penalties to shippers under its tariff of up to two times the highest price of gas on its  
4 system that day per GJ that the shipper is drafting the Mainline. AECO C has in the past  
5 traded in excess of \$17/GJ, while prices at points along the Mainline could be much higher.

6  
7 **(d) Please estimate how much more Firm Transport Centra could decontract from TCPL,**  
8 **and what impact this would have on its transportation load factor.**

9  
10 As part of Centra’s ongoing efforts to optimize its portfolio, Centra will continue to evaluate  
11 opportunities relative to its current load forecast and potential operational impacts with  
12 respect to meeting the Manitoba market requirement. If Centra were to further decontract  
13 TCPL FT, Centra’s load factor would improve provided the decontracted FT would not have  
14 to be replaced with another form of transportation.

15  
16 **(e) Please explain whether decontracting Firm Transport and utilizing more Delivered**  
17 **Service or Seasonal Delivered Service could be more economical than maintaining**  
18 **Firm Transport and purchasing gas from Centra’s Primary Gas supplier.**

19  
20 The relative economics of these services can only be determined on a case-by-case basis  
21 because these services may incorporate TCPL tolls and AECO hub pricing within their  
22 bundled transportation and commodity pricing, and are dependent upon the assets held by  
23 individual marketers. As outlined in the response to part (d) above, these opportunities will  
24 continue to be evaluated as part of Centra’s ongoing efforts to optimize its portfolio.

Centra Gas Manitoba Inc.  
2010/11 Cost of Gas  
TransCanada Transportation  
2003/2004 Actual Load Factors

PUB/Centra 4(a)  
Attachment 1 of 6  
February 19, 2010

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	29	31	30	31	30	31	31	30	31	
2													
3	204,784	204,784	204,784	204,784	205,647	205,647	205,647	205,647	205,647	205,647	205,647	205,647	
4	6,143,520	6,348,304	6,348,304	5,938,736	6,375,057	6,169,410	6,375,057	6,169,410	6,375,057	6,375,057	6,169,410	6,375,057	75,162,379
5													
6						54,418	54,418	54,418	54,418	54,418	54,418	54,418	
7						1,632,540	1,686,958	1,632,540	1,686,958	1,686,958	1,632,540	1,686,958	11,645,452
8													
9	6,047,800	6,345,384	6,055,202	5,875,426	6,059,977	5,604,572	4,838,227	3,393,967	3,105,057	3,293,358	3,327,097	4,907,834	58,853,901
10	88,000	0	293,102	19,646	288,600	514,142	1,403,250	2,685,375	3,036,833	2,719,764	2,665,083	1,377,813	15,071,608
11	6,135,800	6,345,384	6,348,304	5,895,072	6,328,577	6,118,714	6,241,477	6,079,342	6,141,890	6,013,122	5,992,180	6,285,647	73,925,509
12													
13	98.4%	100.0%	95.4%	98.9%	95.1%	90.8%	75.9%	55.0%	48.7%	51.7%	53.9%	77.0%	78.3%
14	99.9%	100.0%	100.0%	99.3%	99.3%	99.2%	97.9%	98.5%	96.3%	94.3%	97.1%	98.6%	98.4%
15													
16	0	0	0	0	0	1,303,173	1,538,740	1,632,300	1,686,958	1,686,594	1,626,960	1,025,764	10,500,489
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	1,303,173	1,538,740	1,632,300	1,686,958	1,686,594	1,626,960	1,025,764	10,500,489
19													
20						79.8%	91.2%	100.0%	100.0%	100.0%	99.7%	60.8%	90.2%
21						79.8%	91.2%	100.0%	100.0%	100.0%	99.7%	60.8%	90.2%



Centra Gas Manitoba Inc. 2010/11 Cost of Gas TransCanada Transportation 2004/2005 Actual Load Factors		PUB/Centra 4(a) Attachment 2 of 6 February 19, 2010												
		Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1		30	31	31	28	31	30	31	30	31	31	30	31	
2														
3	MDA/SSDA MDQ	205,647	205,647	204,784	204,784	204,784	204,784	204,784	204,784	204,784	204,784	204,784	204,784	
4	Total Capacity MDA/SSDA	6,169,410	6,375,057	6,348,304	5,733,952	6,348,304	6,143,520	6,348,304	6,143,520	6,348,304	6,348,304	6,143,520	6,348,304	74,798,803
5														
6	STS MDQ						54,418	54,418	54,418	54,418	54,418	54,418	54,418	
7	STS Capacity Available						1,632,540	1,686,958	1,632,540	1,686,958	1,686,958	1,632,540	1,686,958	11,645,452
8														
9	To MDA/SSDA/Storage	5,385,574	6,365,528	6,210,611	5,609,379	6,021,283	4,957,391	4,309,308	3,169,721	2,989,633	3,035,663	3,204,565	4,201,837	55,460,493
10	Capacity Management	761,612	8,229	134,913	119,381	314,534	1,186,039	1,934,564	2,973,799	3,358,643	3,312,641	2,938,955	2,124,689	19,167,999
11	Total MDA/SSDA Transport	6,147,186	6,373,757	6,345,524	5,728,760	6,335,817	6,143,430	6,243,872	6,143,520	6,348,276	6,348,304	6,143,520	6,326,526	74,628,492
12														
13	Load factor - excl Cap. Mgmt	87.3%	99.9%	97.8%	97.8%	94.8%	80.7%	67.9%	51.6%	47.1%	47.8%	52.2%	66.2%	74.1%
14	MDA/SSDA Total Load factor	99.6%	100.0%	100.0%	99.9%	99.8%	100.0%	98.4%	100.0%	100.0%	100.0%	100.0%	99.7%	99.8%
15														
16	TransCanada STS - Inventory	0	0	0	0	0	1,465,160	1,608,136	1,630,200	1,684,230	1,684,423	1,629,870	1,248,768	10,950,787
17	Capacity Management (C.M.)	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Total STS Used	0	0	0	0	0	1,465,160	1,608,136	1,630,200	1,684,230	1,684,423	1,629,870	1,248,768	10,950,787
19														
20	STS Load factor - excl. C.M.						89.7%	95.3%	99.9%	99.8%	99.8%	99.8%	74.0%	94.0%
21	STS Load factor						89.7%	95.3%	99.9%	99.8%	99.8%	99.8%	74.0%	94.0%

Centra Gas Manitoba Inc.  
2010/11 Cost of Gas  
TransCanada Transportation  
2005/2006 Actual Load Factors

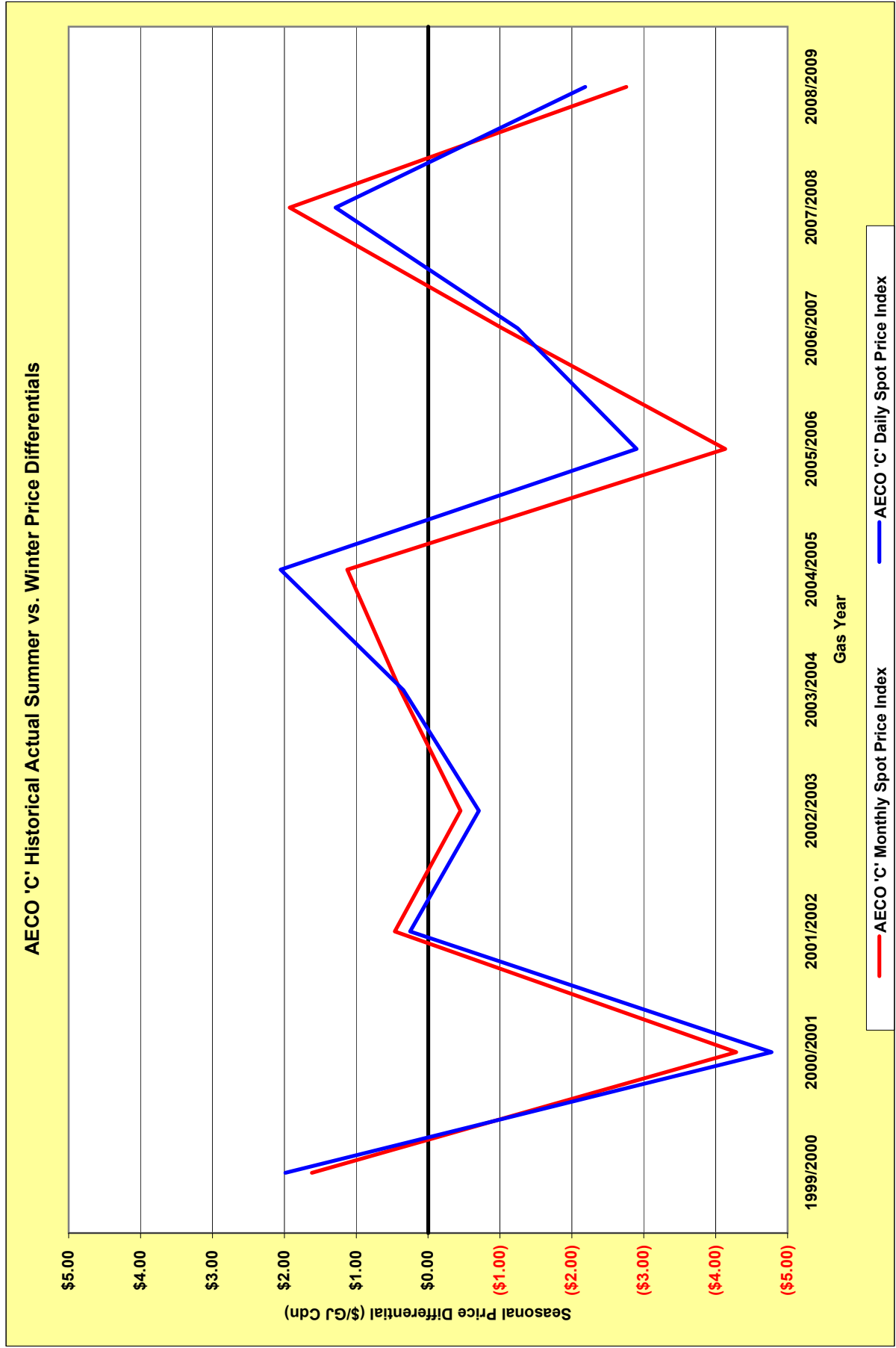
PUB/Centra 4(a)  
Attachment 3 of 6  
February 19, 2010

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	28	31	30	31	30	31	31	30	31	
2													
3	204,784	204,784	204,784	204,784	204,784	204,784	204,784	204,784	204,784	203,921	203,921	203,921	
4	6,143,520	6,348,304	6,348,304	5,733,952	6,348,304	6,143,520	6,348,304	6,143,520	6,348,304	6,321,551	6,117,630	6,321,551	74,666,764
5													
6													
7													
8													
9	5,271,442	5,929,011	6,342,187	5,654,428	6,001,265	3,872,634	3,380,937	2,963,961	2,866,556	2,678,868	3,233,543	5,173,025	53,367,857
10	872,078	403,106	6,012	78,224	346,801	2,250,292	2,967,362	3,179,559	3,481,364	3,642,682	2,771,410	1,138,875	21,137,765
11	6,143,520	6,332,117	6,348,199	5,732,652	6,348,066	6,122,926	6,348,299	6,143,520	6,347,920	6,321,550	6,004,953	6,311,900	74,505,622
12													
13	85.8%	93.4%	99.9%	98.6%	94.5%	63.0%	53.3%	48.2%	45.2%	42.4%	52.9%	81.8%	71.5%
14	100.0%	99.7%	100.0%	100.0%	100.0%	99.7%	100.0%	100.0%	100.0%	100.0%	98.2%	99.8%	99.8%
15													
16	0	0	0	0	0	1,093,777	1,245,494	1,261,369	1,342,131	1,317,927	951,653	841,537	8,053,888
17	0	0	0	0	0	11,921	0	358,355	341,000	106,988	578,190	0	1,396,454
18	0	0	0	0	0	1,105,698	1,245,494	1,619,724	1,683,131	1,424,915	1,529,843	841,537	9,450,342
19													
20						67.0%	73.8%	77.3%	79.6%	78.1%	58.3%	49.9%	69.2%
21						67.7%	73.8%	99.2%	99.8%	84.5%	93.7%	49.9%	81.2%









Centra Gas Manitoba Inc. 2010/11 Cost of Gas Application Historical Actual Summer vs Winter Price Differentials at AECCO "C"		PUB/Centra 4(b) Attachment 1 February 19, 2010									
1											
2											
3	AECCO 'C' Monthly Spot Price Index	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
4		<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>	<u>Gas Year</u>
5	AECCO 'C' Daily Spot Price Index	\$1.62	(\$4.29)	\$0.46	(\$0.45)	\$0.39	\$1.12	(\$4.13)	(\$1.03)	\$1.93	(\$2.76)
		\$1.99	(\$4.78)	\$0.25	(\$0.71)	\$0.35	\$2.05	(\$2.90)	(\$1.24)	\$1.29	(\$2.19)

24



**CENTRA GAS MANITOBA INC.****TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION****RESPONSE TO PRE-ASKS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**PRE-ASK/PUB/CENTRA 2**

**Provide a table of unit conversions.**

Please see the attachment to this response.

### **Unit Conversions**

<b>UNIT OF MEASUREMENT</b>	<b>FULL DESCRIPTION OF MEASUREMENT</b>	<b>EQUIVALENT TO</b>
Bcf	Billion Cubic Feet	1.07 PJ
Dth	Decatherm	1.055 GJ
GJ	Gigajoule	0.948 MMBtu
MMBtu	Million British Thermal Units	1 Dth; or 1.055 GJ
Tcf	Trillion Cubic Feet	
TJ	Terajoule	1 thousand GJ
PJ	Petajoule	1 Million GJ
Mcf	Thousand Cubic Feet	28.3 m <sup>3</sup> , or 1.07 GJ
m <sup>3</sup>	Cubic metre	0.0378 GJ (1GJ = 26.5 m <sup>3</sup> )

In rough terms, one GJ equals one Mcf, one MMBtu, or one decatherm. One PJ roughly equals one Bcf.

A typical home in Winnipeg uses 2465 m<sup>3</sup> or 93 GJ each year.

Note - conversions assume a heating value of 37.8 GJ/1000m<sup>3</sup>

**CENTRA GAS MANITOBA INC.  
TRANSPORTATION & STORAGE PORTFOLIO APPLICATION**

**UNITS OF MEASUREMENT AND ABBREVIATED TERMS**

<b>UNIT OF MEASUREMENT</b>	<b>FULL DESCRIPTION OF MEASUREMENT</b>
Bcf	Billion Cubic Feet
Dth	Decatherm
GJ	Gigajoule
MMBtu	Million British Thermal Units
Tcf	Trillion Cubic Feet
TJ	Terajoule
PJ	Petajoule

<b>ABBREVIATION OR TERM</b>	<b>FULL DESCRIPTION OF ACRONYM OR TERM</b>
AECO	Alberta Energy Company
ANR	ANR Pipeline
CAC/MSOS	Consumers Association of Canada/Manitoba Society of Seniors
CAD	Canadian Dollars
Centra	Centra Gas Manitoba Inc.
Emerson	Manitoba Delivery Point to/from the United States
Empress	Alberta Border
EZT	Mainline's Eastern Zone Toll
FERC	Federal Energy Regulatory Commission
FS	Firm Service
FSS	Firm Storage Service
FT	Firm Transportation
FTS	Firm Transportation Service
Gas Year	November 1 - October 31
GAC/TREE	Green Action Centre/Time to Respect Earth's Ecosystems
GLGT	Great Lakes Gas Transmission (Transportation)
GMM	Gas Market Model
GSVM	Gas Storage Valuation Model
HVF	High Volume Firm
ICF	ICF International
ID1	Intra-day 1
ID2	Intra-day 2
INT	Interruptible Class
IT	Interruptible Transportation on the TransCanada Mainline

**Centra Gas Manitoba Inc.**  
**Transportation & Storage Portfolio Application**  
**Units of Measurement and Abbreviated Terms**

**Tab 3**  
**Page 2 of 2**  
**March 23, 2012**

<b>ABBREVIATION OR TERM</b>	<b>FULL DESCRIPTION OF ACRONYM OR TERM</b>
LDC	Local Distribution Company
LTF	Long-Term Firm
Mainline	TransCanada Pipelines Limited Mainline (TransCanada Mainline)
Marketers	Natural Gas Marketers (Brokers)
MichCon	Supply hub in Michigan
MDA	Manitoba Delivery Area
MLF	Mainline Firm
NEB	The National Energy Board
NGTL	Nova Gas Transmission Ltd.
NGX	Natural Gas Exchange
NNG	Northern Natural Gas
NOVA	The intra-Albertan natural gas gathering and processing pipeline system
NYMEX	New York Mercantile Exchange
PUB	Manitoba Public Utilities Board
ROFR	Right of First Refusal
SSDA	Saskatchewan Southern Delivery Area
STF	Short-Term Firm
STFT	Short-Term Firm Transportation
STS	Storage Transportation Service
TCPL	TransCanada Pipelines Limited
TCPL Application	TransCanada Pipelines Ltd. Business and Services Restructuring and Mainline 2012-13 Tolls Application
TEP	TransGas Energy Pool
T-Service	Transportation Service
TransGas	TransGas Limited, a subsidiary of SaskEnergy
U.S.	United States
USD	US Dollars
WBIP	Williston Basin Interstate Pipeline
WCSB	Western Canadian Sedimentary Basin
WTS	Western Transportation Service