K2.2

DR QUINN & ASSOCIATES LTD.

VIA E-MAIL

November 19, 2016

Ontario Energy Board
Attn: Kirsten Walli, Board Secretary
P.O. Box 2319
27th Floor, 2300 Yonge Street
Toronto ON M4P 1E4

RE: EB-2016-0186 UNION GAS – Panhandle Replacement Project
FRPO Compendium and Advanced Question

Attached is a compendium of materials drawn from evidence submitted in the above proceeding that we may refer to during our examination of Union's witness panels. Although all of the information is drawn from sources in the hearing, we draw your attention to the last 13 pages of the compendium marked as Tab 2. We are providing a simple summary of the data and representations taken from Undertaking responses JT1.9 and JT1.10. We respectfully request Union's review for the purposes of confirming the data is correct allowing a discussion on the implications of combining the Undertaking responses (we attach also a Live Excel spreadsheet for easy of review).

In addition for the purposes of having calculations or simulations prepared in advance of the oral hearing, we respectfully request that Union complete one additional simulation and bring the results to the hearing to allow an informed exchange including the Board panel as they may desire. In JT1.8 Attachment 2, the schematic provided a summary of flows and pressures for the Panhandle system for the Winter of 2021/2022. Our request is that all of the forecasted system demands for that winter be held constant while increasing the available firm supply from Ojibway from 140 TJ/day to 175TJ/day. We would appreciate it if Union could file the resulting schematic showing the results for the simulation at the outset of the hearing.

Respectfully Submitted on Behalf of FRPO,

Dwayne Q

Dwayne R. Quinn
Principal
DR QUINN & ASSOCIATES LTD.

c. K. Hockin – Union Gas
S. Andison, K. Lauesen – FRPO,
A.S. Cheung
Interested Parties EB-2016-0186

• 130 Muscovey Drive • Elmira, ON • N3B 3P7 • drquinn@rogers.com • (519)-500-1022 •

FRPO COMPENDIUM

TAB 1

EB-2016-0186
PANHANDLE REINFORCEMENT PROJECT

REFERENCE MATERIAL

Greenhouse market in Leamington and Kingsville[2] but has not expanded or reinforced the Panhandle System. This growth has increased the utilization of the Panhandle System to move gas from the Dawn Hub to the Market and the Panhandle System is nearing capacity.

The Panhandle System also flows from Ojibway east to the Market. Approximately 10% or 60 TJ/d of the demand on the Panhandle System is served through Union's gas supply (to serve system customers) delivered at Ojibway on Design Day. Union relies on these firm deliveries in Design Day analysis of the Panhandle System to help reduce the physical transportation needs from Dawn. Ojibway provides some interconnectivity to the Dawn Hub, enables access to natural gas supplies shipped through the PEPL system in the U.S. and contributes to the security and diversity of supply to the Dawn Hub. Ojibway is not a liquid trading point (it has limited buyers and sellers), but is a trans-shipment point between two pipeline systems. Currently, two ex-franchise shippers (C1) have transportation contracts to transport natural gas from Ojibway to the Dawn Hub on a year round basis. Union must be able to transport these volumes on the Panhandle System on a firm basis as requested by the shipper. However, Union cannot rely on these volumes at Ojibway when designing the system.

The amount of natural gas Union can accept from PEPL and transport from Ojibway toward Dawn is limited by the minimum daily Windsor area consumption and the capacity of the Sandwich Compressor Station located in Tecumseh. Currently, Union has a maximum capability to accept imports of 115 TJ/d at Ojibway on a yearly basis (summer month limitation).

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[2] Leamington Expansion Phase I (2013) EB-2012-0431 and 2016 Leamington Expansion Pipeline Project (EB-2016-0013)

1. Panhandle System Design

Union models the capacity of the Panhandle System to meet firm in-franchise demand on Design Day. The flow of gas moves in a westerly direction from Dawn to the Market on Design Day. The Design Day weather condition for the Southern area of Union Gas is 43.1 Degree Days (43.1DD), which represents an average daily temperature of -25.1 degrees centigrade. This degree day is the coldest historical day based upon weather data from the London Airport. The Design Day model of the Panhandle System includes the following assumptions:

1. All in-franchise interruptible customers have been curtailed;
2. All in-franchise customers consume volumes equivalent to Design Day estimates, which are derived from firm contract demand, historical consumption, and forecast growth;
3. There are no supply failures of Union deliveries of 60 TJ/d arriving at Ojibway;
4. Ex-franchise C1 Ojibway to Dawn transportation contracts not assumed to be flowing;
5. System cannot operate above its maximum operating pressure;
6. Required pressure and supply are available from Dawn;
7. Minimum pressures for laterals and stations supplying in-franchise customers are met;
8. Must operate within station flow capacity constraints;
9. Minimum contractual delivery pressure at Brighton Beach Power Station ("BBPS") of 1724 kPag is met; and,
10. Minimum delivery pressure at Leamington North Gate Station of 2275 kPag is met.

This evidence assumes the 2016 Leamington Expansion Pipeline Project (EB-2016-0013) has been Board-approved, constructed, and in-service for November 1, 2016.

additional supply into Union's transmission and distribution system and meet the growing Design Day demands across the Market.

In evaluating the potential of incremental gas supply delivered at Ojibway, Union adhered to its Gas Supply Planning Principles[3] which focus on providing reliable, secure and diverse supplies to Union's customers at a prudent cost. These principles are applied when Union reviews transportation alternatives and makes decisions with respect to serving its customers.

For any commercial service to be considered viable, the commercial service must be firm with ongoing renewal rights and renewal notice of at least three years. This is to ensure that if a commercial service is no longer available in the future, Union has sufficient time to contract for other supply and/or construct required facilities.

For this alternative, Union took a balanced approach between a physical and commercial service to meeting an additional 106 TJ/d of Design Day demand and meet the evaluation criteria. When evaluating this alternative, the following need to be taken into consideration:

- Incremental Gas supply costs related to an incremental 34 TJ/d of supply at Ojibway and related risks;
- Cost of Required incremental Union pipeline and station facilities along the Panhandle System to serve the remainder of the demand from Dawn (outlined below);

[3] Refer to EB-2014-0182 Exhibit A, Tab 5

- The continued Integrity work costs on the segment of NPS 16 pipeline not being replaced; and,
- Longer term facilities requirements.

<u>Incremental Gas Supply Delivered at Ojibway</u>

Based on discussions with PEPL, PEPL is offering Union an additional 34 TJ/d of firm renewable capacity with an Ojibway delivery point contracted over a long-term (i.e. 10 years) period that would originate in the Panhandle Field Zone (long haul). PEPL has also provided indicative rates for firm service for the 34 TJ/d of long haul, long-term firm service.

Union also does not have specific renewal rights or any right of first refusal ("ROFR") on 21 TJ/d of its existing 60 TJ/d of PEPL capacity after October 31, 2017. PEPL has provided indicative rates for firm service over a long-term (i.e. 10 years) period on the total existing 60 TJ/d of capacity.

The total PEPL capacity offered to Union of 94 TJ/d is currently under negotiation. The current contract terms of the offering are limited by the term, price and availability. The PEPL offer expires on June 30, 2016 and Union is unaware if this capacity will be available in the future. Union cannot be guaranteed access to any PEPL capacity greater than the 39 TJ/d it currently holds that is subject to a ROFR.

Union has also estimated that, on a forecasted basis, the landed cost of PEPL Field Zone supply delivered to Union at Ojibway over a 10 year term (2016 to 2026) is approximately $0.30/GJ higher than the cost of Dawn sourced supply over the same period. Assuming the additional 34 TJ/d of supply, this would amount to an annual premium of approximately $3.7 million as compared to the Dawn supplied option, equating to a NPV premium of $22 million over the 10 year period.

These factors highlight the potential issues of having to rely on third party gas supply services to meet an in-franchise firm demand requirement in place of, or in supplement to, a Union facility option.

This alternative can carry a large degree of price, term and capacity uncertainty, and poses risk to the Market when relying on third party gas supply services at Ojibway to meet demand. The risks of term, price and availability are further described below:

Term Risk relates to the uncertainty on how long a shipper would have to commit to transportation capacity in the future related to having a ROFR. For example, when a contract has ROFR rights and renews, it means that once the primary term of the contract ends, if another party is willing to contract for a longer term, the original contract holder would have to match that term to retain the rights to the capacity. This would then reoccur each time the primary term ended. Therefore, you would not know what term you may need to contract for in the future to retain the capacity.

Price Risk is twofold. First the transportation capacity would have a risk around the level of the tolls on the pipeline going forward. To have renewal or ROFR rights, pipelines will require contracting at maximum tolls. These maximum tolls can change over time. Even if the maximum tolls were locked in for the primary term, the term following the renewal or ROFR period, would likely have different tolls. The second area of price risk is the gas commodity price. Gas prices will change from time to time based on the market factors at the time the purchase is made.

Availability Risk relates to whether or not transportation capacity is available from time to time. Should a contract not have renewal or ROFR rights (i.e. not be a term contract at maximum tolls) then the availability of the transportation capacity would be in question after the initial term of the transportation arrangement.

Based on these additional factors, this alternative is not preferred.

Cost of Required Incremental Facilities

The pipeline and station facilities required in addition to 94 TJ/d of firm deliveries at Ojibway are:

i. Replace (lift) 27 kilometres of the existing NPS 16 pipeline from Dawn to the Dover Centre Station and replace (lay) with a new NPS 36 pipeline plus upgrade Dawn, Dover Centre and Mersea stations along the Panhandle System;

ii. Install approximately 16 kilometres of NPS 12 pipeline from the existing NPS 20 pipeline into the Town of Kingsville and build a new station to serve the distribution network; and,

iii. Install approximately 12 kilometres of NPS 6 pipeline looping upstream of McCormick Station in the Municipality of Essex.

This alternative requires a significant amount of pipeline and station facilities to be constructed in addition to the increase in Ojibway deliveries. While Ojibway deliveries are well-suited to satisfy demands in the Windsor market, which is in close proximity to Ojibway, they are not efficient for satisfying demands further upstream on the Panhandle System. Incremental Ojibway deliveries yield diminished returns to serve demand beyond the Windsor market between Sandwich and Dawn (i.e. for each 1 GJ of incremental Ojibway deliveries, less than 1 GJ of capacity is created east of Sandwich). As a result, significant transmission and high pressure distribution reinforcement is also required. This alternative has an estimated capital cost of $235 million.

Continued Integrity work costs on NPS 16 pipeline

In addition, this alternative will also require 13 kilometres of NPS 16 pipeline to remain in place at a NPV cost for the ongoing integrity and maintenance of approximately ($3) million.

The NPV of this alternative, including the gas cost premium and ongoing maintenance is ($205) million compared to a ($212) million NPV of the Proposed Pipeline. Although this alternative is slightly less costly than the Proposed Pipeline on a NPV basis, it is not the preferred option due to the risk factors identified above and the higher costs associated with longer term growth. See Exhibit A, Tab 6, Table 6-1.

Longer Term Facility Requirements

The long-term demand (2022-2034) along the Panhandle System is expected to grow by a further 99 TJ/d. With further demand, additional pipeline and station facilities are required to meet long-term demand. In reviewing the long-term facility requirements, all alternatives will require the installation of the Proposed Pipeline. In addition, downstream reinforcement projects connecting into the

ENERGY TRANSFER

Chris Shorts
Director, Business Development and Upstream Regulation
Union Gas Limited

July 28, 2016

Chris,

Energy Transfer is pleased to offer the following proposal to Union Gas Ltd. for capacity to continue to serve your Windsor market utilizing the Panhandle and Trunkline assets. Under the proposal below, Energy Transfer Energy Transfer agrees to fix the tariff rate for the term of the contracts.

Proposal Details:

1. Union extends their current 57,000 Dth/d of capacity on PEPL and Trunkline until 10/31/32 as follows:
   - 25,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
   - 20,000 Dth/d – TGC FZ to PEPL/BRBN and PEPL/BRBN to Ojibway capacity is renewed as PEPL FZ to Ojibway on 11-1-2017 for a term of **15 years at tariff rates**
   - 2,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
   - 10,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
2. Energy Transfer contracts for Union C1 Ojibway to Dawn transport as follows:
   - 15,000 Dth/d with a term of Rover in-service (currently expected to be 11-1-2017) to 10/31/2019 at **C1 tariff rate**
   - 35,000 Dth/d with a term of 11-1-2019 to **15 years** from in-service at **C1 tariff rate**

Please call me at 713-989-7143 at your convenience to discuss this in more detail.

This proposal is valid through August 15, 2016 and is subject to available capacity and approval from Energy Transfer executive management. Fuel, commodity and other specifics are governed by the respective FERC GAS TARIFF's

Sincerely,

John Reid
Senior Director
Energy Transfer

Bechard, Shelley

From:	Piett, Patti
Sent:	August-07-15 3:47 PM
To:	Redford, Jim
Cc:	Mastronardi, Paolo; Montgomery, Jacquie
Subject:	Re: PANHANDLE MEETING TAKE AWAYS
Attachments:	image001.jpg

Thanks for the summary Jim. I was also going to send Beth/john information about Dawn (stats, index of customers, etc suitable for sharing with other shoppers/producers)

ET was going to confirm their requested capacity given our 35000 existing capacity limit and their interest to support a project beyond that. I don't believe they committed to a time for this but I will follow up in a week.

Sent from my iPhone

On Aug 7, 2015, at 9:29 AM, Redford, Jim <JRedford@uniongas.com> wrote:

Here are what I recorded as our take aways from yesterday's Panhandle Meetings:

- The Integrity Management Plan needs to be completed now and reviewed to ensure it covers decision tree and risk analysis. **PAOLO**
- Do we have the ability to offer a winter only service (above 35 TJ/d) and what would the terms of that service be (capacity, duration, etc.)? **PAOLO/PATTI**
- What is the capacity of one 12" line under the river (at 425 psig MOP = current conditions)? Does it exceed 115 TJ/d? **PAOLO**
- What is the cost and rate to provide 75 mmcfd of Ojibway to Dawn capacity for Panhandle? **PAOLO**
- What is the cost and rate to handle 175 mmcfd total deliveries at Ojibway (115 mmcfd Ojibway to Dawn plus ~60 mmcfd delivery at Ojibway for in-franchise)? **PAOLO**
- Is the river crossing replacement included in the expansion costs? Is the river crossing replacement maintenance capital under all circumstances? Can the river crossing replacement be a separate project from any work required to provide more than 35 TJ/d of firm capacity? **PAOLO**

We promised a response in September to these items. Paolo – I assume you will have Dale assist with the gathering and analysis of this information.

Jim Redford, P. Eng.
Director Business Development &
Upstream Regulation
Union Gas Limited | A Spectra Energy
Company
50 Keil Drive North | Chatham, ON N7M
5M1
Direct Tel: 519.436.4577 Cell: 519-365-
0510

ENERGY TRANSFER

Chris Shorts
Director, Business Development and Upstream Regulation
Union Gas Limited

May 17, 2016

Chris,

Energy Transfer is pleased to offer the following proposal to Union Gas Ltd. for capacity to continue to serve your Windsor market utilizing the Panhandle and Trunkline assets. Under the proposal below, Energy Transfer would commit to the following:

1. Energy Transfer agrees to fix the tariff rate for the term of the contracts.
2. Energy Transfer and Union execute an in-line inspection program on the 12" river crossing pipelines. The costs will be shared equally between Energy Transfer and Union ($2.2 Million total estimated).
3. If the results of the in-line inspections are conclusive and included a significant anomaly on either of the twin 12" river crossing pipelines that cannot be repaired, a new river crossing replacement pipeline would be required. The costs for the replacement River Crossing will be shared equally between Energy Transfer and Union ($24 Million total estimated).

Proposal Details:

1. Union extends their current 57,000 Dth/d of capacity on PEPL and Trunkline until 10/31/26 as follows:
   - 25,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **9 years at tariff rate**
   - 20,000 Dth/d – TGC FZ to PEPL/BRBN and PEPL/BRBN to Ojibway capacity is renewed on 11-1-2017 for a term of **9 years** at **tariff rates**
   - 2,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **9 years at tariff rate**
   - 10,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2016 for a term of **10 years** at **tariff rate**

2. Union signs up for an additional 38,000 Dth/d of PEPL FZ to Ojibway capacity starting on November 1, 2016 for a term of **10 years** at **tariff rate**. This will get total capacity commitment to 95,000 Dth/d.

I look forward to discussing this proposal in more detail. Please call me at 713-989-7143 at your convenience.

This proposal is valid through June 30, 2016 and is subject to available capacity and approval from Energy Transfer executive management. Fuel, commodity and other specifics are governed by the respective FERC GAS TARIFF's

Sincerely,

John Reid
Senior Director
Energy Transfer

UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

In the Matter of	§	
	§	Docket No. CP15- _____ -000
Rover Pipeline LLC	§	

APPLICATION OF ROVER PIPELINE LLC
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

VOLUME I

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UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

In the Matter of	§	
	§	Docket No. CP15-_____-000
Rover Pipeline LLC	§	

APPLICATION OF ROVER PIPELINE LLC FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

Rover Pipeline LLC ("Rover") hereby files this application ("Application") with the Federal Energy Regulatory Commission ("Commission" or "FERC") pursuant to Section 7(c) of the Natural Act ("NGA"),[1] as amended, and Parts 157 and 284 of the Commission's regulations,[2] requesting the following authorizations:

(1) A certificate of public convenience and necessity authorizing Rover to construct, own, and operate under Part 157, Subpart A of the Commission's regulations[3] a new interstate natural gas pipeline system with a total system capacity of 3.25 billion cubic feet per day ("Bcf/day") of natural gas, including: (a) approximately 711 miles of 24-inch, 30-inch, 36-inch and 42-inch diameter "Supply Laterals" and "Mainlines"[4] extending from the Marcellus and Utica shale supply areas in West Virginia, Pennsylvania, and Ohio to a point of interconnection with the Vector Pipeline, LP ("Vector") system in Livingston County, Michigan; ten new compressor stations (six on the Supply Laterals; and four on the Mainlines); nineteen metering and regulating

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1 15 U.S.C. § 717f(c) (2012).

2 18 C.F.R. Parts 157, 284 (2014).

3 *Id.* at Part 157, Subpart A.

4 The ten Supply Laterals are: the Sherwood Lateral; the Columbia Gas Transmission ("CGT") Lateral; the Seneca Lateral; the Berne Lateral; the Clarington Lateral; the Majorsville Lateral; the Cadiz Lateral; the Burgettstown Lateral; and Supply Connector Lateral Lines A and B. The three Mainlines are: parallel Mainlines A and B; and the Market Segment.

facilities; and other ancillary facilities (all facilities collectively referred to as the "Rover Pipeline" or "Project"); (b) approval of the *pro forma* FERC NGA Gas Tariff ("Tariff") submitted herewith, which includes the authority to enter into negotiated rate agreements; and (c) approval of the initial recourse rates for service; and

(2) Blanket certificates authorizing Rover to: (a) engage in certain self-implementing routine activities pursuant to blanket certificate authority under Part 157, Subpart F of the Commission's regulations;[5] and (b) transport natural gas on an open-access and self-implementing basis under Part 284, Subpart G of the Commission's regulations.[6]

Rover also requests any waivers that may be necessary for approval of the Application and the services proposed herein, including waiver of the Commission's shipper-must-have-title policy in order for Rover to acquire off-system capacity on third-party pipeline systems consistent with Commission policy.[7]

Rover respectfully requests that the Commission issue a final order approving the authorizations requested herein by no later than November 2015. Granting the requested authorizations by November 2015 will allow Rover to commence construction in a timely manner and place in service certain Supply Laterals and Mainlines A and B to a new market interconnection hub known as the "Midwest Hub" in Defiance County, Ohio, by December 2016 to meet the natural gas production schedules and delivery obligations of Rover's producer-shippers in accordance with the executed precedent agreements. As discussed below, Rover's contractual commitments further require that it construct and place in service by June 2017 the

5 18 C.F.R. Part 157, Subpart F.

6 *Id.* at Part 284, Subpart G.

7 *See Tex. E. Transmission Corp.*, 93 FERC ¶ 61,273 (2000), *reh'g & clarification denied*, 95 FERC ¶ 61,056 (2001).

remaining Supply Laterals and the Market Segment facilities commencing at the Midwest Hub and running to the pipeline terminus at an interconnect with Vector.

In support of this Application and pursuant to the Commission's regulations, Rover respectfully submits the following:

I.
EXECUTIVE SUMMARY

The Rover Pipeline originated as a result of discussions with producers in the Marcellus and Utica Shale supply areas of West Virginia, Pennsylvania and Ohio that were seeking a means to move their stranded natural gas production to markets in the Midwest and Canada as expeditiously as possible. As reflected in this Application, Rover proposes to meet the long-haul transportation needs of these producer-shippers through a combination of new greenfield pipeline construction and the acquisition of existing off-system capacity.

More specifically, Rover proposes to construct, own, and operate a new interstate natural gas pipeline system to include approximately 711 miles of Supply Laterals and Mainlines, and related compression and metering facilities, from the Marcellus and Utica shale supply areas in West Virginia, Pennsylvania, and Ohio to a point of interconnection with the Vector pipeline system in Livingston County, Michigan.

The Rover Pipeline is designed with dual 42-inch pipelines with the capacity to transport up to 3.25 Bcf/day of natural gas from the beginning of Mainlines A and B near the City of Leesville, in Carroll County, Ohio, to the Midwest Hub. Rover will install delivery meters at the Midwest Hub to deliver gas into Panhandle Eastern Pipe Line Company, L.P. ("Panhandle") and ANR Pipeline Company ("ANR"). To facilitate a seamless transportation path for its shippers in its Market Zone South in a cost-effective manner that minimizes duplication of facilities and environmental impacts, Rover has executed precedent agreements with Panhandle and Trunkline

Gas Company, LLC ("Trunkline Gas") for firm transportation capacity.[8] By using existing capacity on the Panhandle and Trunkline Gas pipelines, Rover will deliver approximately 750,000 dekatherms per day ("Dth/day") to Panhandle, which will redeliver volumes via backhaul to Trunkline Gas' Zone 1A.[9] Rover will also be capable of delivering up to approximately 1.7 Bcf/day to ANR.

From the Midwest Hub, the Rover Pipeline is designed with a single 42-inch pipeline—the Market Segment—with the capacity to transport up to 1.3 Bcf/day of natural gas to a proposed interconnection with the Vector system in Livingston County, Michigan. Rover has executed a joint precedent agreement with Vector and its interconnected affiliated pipeline, Vector Pipeline Limited Partnership ("Vector Canada"), for up to 950,000 Dth/day of firm transportation capacity in order that Rover may provide transportation service to those producer-shippers in its Market Zone North requesting deliveries in Michigan under Rover's Rate Schedules FTS and ITS, as well as deliveries to the Union Gas Dawn Hub in Ontario, Canada ("Dawn Hub"). Additionally, Rover has contracted with Panhandle to deliver additional volumes to the U.S./Canada International Boundary at the Union Ojibway interconnect for further redelivery to the Dawn Hub via the Union Gas Limited system.

Rover is also installing an interconnect in the Supply Zone that will be capable of making deliveries into the CGT system in Doddridge County West Virginia to allow for service to markets in the Gulf Coast, Southeast and East Coast.

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[8] All associated off-system transportation costs for transportation service rendered in the U.S. will be recovered by Rover through its recourse rates. Fuel costs will be a direct charge to the shipper. The precedent agreements executed by Rover for off-system transportation are being submitted as Privileged Information in Exhibit Z-2 hereto.

[9] Panhandle and Trunkline are filing applications concurrently for authorization to construct and operate compression modifications to allow for backhaul transportation. See Section XV. Also, see attached Trunkline Gas Tariff Map included in Exhibit Z-1 hereto.

In its pre-filing request filed in Docket No. PF14-14-000,[10] Rover had initially indicated its intent to build, among other facilities, a 42-inch pipeline from the Midwest Hub to the Dawn Hub. However, on January 27, 2015, Rover executed a precedent agreement with Vector and Vector Canada for firm transportation service of up to 950,000 Dth/day for deliveries in Michigan and at the Dawn Hub. Rover entered into this transportation arrangement with Vector and Vector Canada for several reasons. First, it enables Rover to avoid construction of approximately 110 pipeline miles in Michigan and approximately 14 pipeline miles in Canada, and the associated impacts to the regions' environmental resources, residences, and private property. Second, Rover's transportation of a portion of its shippers' gas on the Vector system maximizes the use of available and existing pipeline capacity, and enables Rover to take advantage of Vector's existing connections with local distribution companies, vast Michigan storage facilities, and other end users in Michigan and Chicago, as well as Vector Canada's interconnection with the Dawn Hub.[11] Finally, along with providing producer-shippers enhanced market outlets, Rover's use of capacity on Vector and Vector Canada will provide these regions with enhanced access to the abundant supply of natural gas originating from the Marcellus and Utica shale supply areas.

While natural gas deliveries in Canada are beyond the Commission's jurisdiction, in order to provide the Commission a complete picture of the wide-ranging benefits of the Project, Rover notes that producer-shippers taking their gas to the Dawn Hub will have multiple options

[10] Request to Initiate the FERC Pre-Filing Review Process, *ET Rover Pipeline Co. LLC*, FERC Docket No. PF14-14-000 (June 26, 2014).

[11] Vector's Michigan and Vector Canada's Ontario delivery points are as follows: Bluewater Gas Storage (Lenox, Michigan); Consumers Energy Company (Hartland, Michigan); Consumers Energy Company (Ray, Michigan); DTE Gas Company (Belle River Mills, Michigan); DTE Gas Company (Milford Junction, Michigan); Jackson, Michigan (550 MW); DTE Gas Company (Belle River Mills, Michigan); DTE Gas Company (Milford Junction, Michigan); Jackson, Michigan (550 MW); Washington 10 (Romeo, Michigan); Greenfield Energy Centre, Ontario (1010 MW); Union (Dawn, Ontario); Union (Courtright, Ontario); and Enbridge Gas Distribution (Sombra, Ontario).

concerning final placement and pricing of their gas. At the Dawn Hub their gas can be: (1) stored at multiple facilities in the area; (2) sold in the local Canadian market; (3) sent to U.S. Northeast markets on TransCanada Corporation pipelines; or (4) sent back into the local Michigan or Chicago markets on other pipelines from the Dawn Hub.

The Rover Pipeline represents an approximately $4.22 billion capital investment in much-needed U.S. energy infrastructure that: (1) responds to market demand for additional firm take-away capacity from the Marcellus and Utica shale supply areas, as evidenced by the significant long-term 15 and 20-year contractual commitments to the Project by producer-shippers; (2) supports overall development of domestic natural gas resources, thereby ensuring domestic energy supplies can grow to meet energy and related national security needs in the United States; and (3) enhances the reliability of the interstate natural gas pipeline grid in a geographic region that serves as a critical junction between sources of natural gas production from the Marcellus and Utica shale supply areas and market demand in the Midwest, Michigan, Gulf Coast, Canadian, and U.S. Northeast markets.

The proposed construction and in-service schedules for the Rover Pipeline are driven by the take-away capacity needs of Marcellus and Utica shale gas producer-shippers that have committed to the Project. In an effort to begin addressing these needs at the earliest date possible, Rover proposes to commence service on a portion of the Supply Laterals (the Seneca, Clarington, and Cadiz Laterals) and the entirety of Mainlines A and B to the Midwest Hub by December 2016. The second construction phase of the Project, which entails construction of those facilities from the Midwest Hub to the interconnection with Vector, as well as the remaining Supply Laterals, is scheduled to be completed and placed in service by June 2017. Significant resources have been expended to date and committed for future expenditure by Rover

Filed: 2016-10-17
EB-2016-0186
Exhibit JT1.8
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UNION GAS LIMITED

Undertaking Response
To Mr. Quinn

TO PROVIDE THE WINTER FLOW SCHEMATIC SHOWING THE MAXIMUM RECEIPT OF 140 TJS FOR BOTH 2017 AND 2021 USING FORECASTED DEMAND UNDERPINNING THE APPLICATION WITH EXISTING FACILITIES; IN OTHER WORDS, WITHOUT THE PANHANDLE REINFORCEMENT

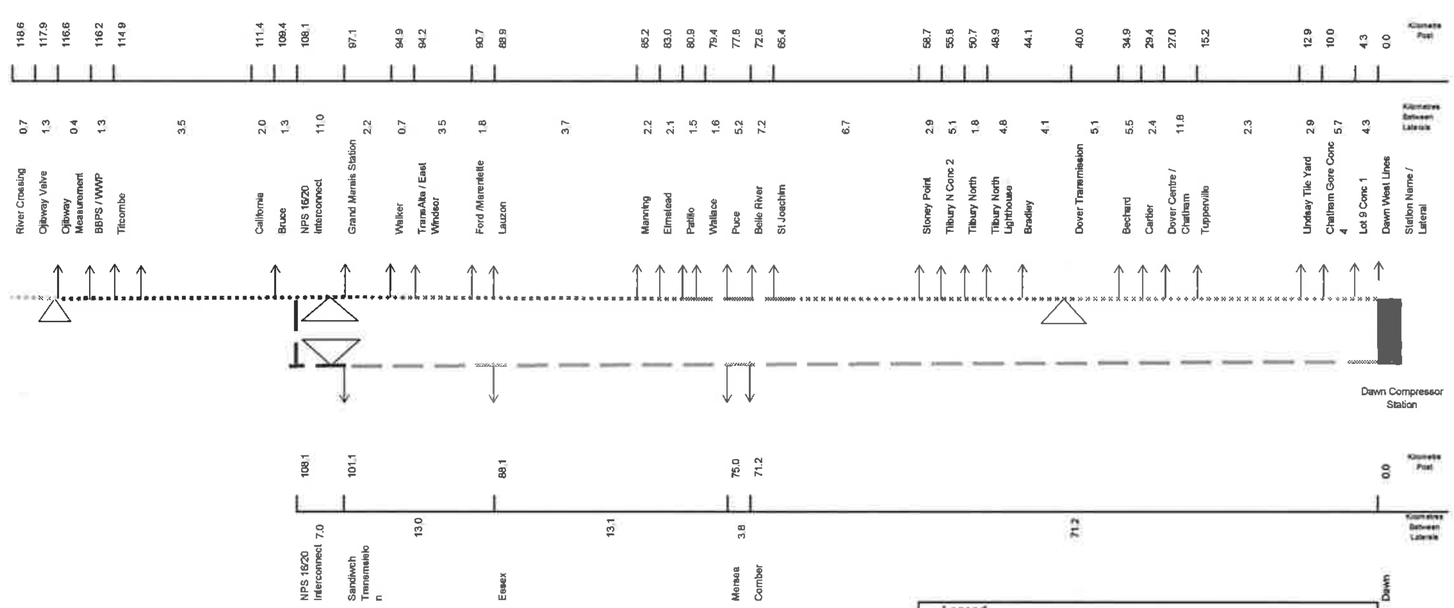
The attached schematics illustrate the Panhandle System capacity with a scenario of 140 TJ/d of firm supply available at Ojibway and no change to the existing Panhandle facilities (i.e. the Panhandle Reinforcement Project is not constructed).

Attachment 1 is a schematic that shows the forecast demands for Winter 2017/2018 Design Day and shows that the forecast demands can be served. This schematic also shows the corresponding pressures along the Panhandle System.

Attachment 2 is a schematic that shows the forecast demands for Winter 2021/2022 Design Day and shows that the forecast demands cannot be served. This schematic also shows the corresponding pressures along the Panhandle System. The pressure constraints into the Leamington/Kingsville market cannot be maintained in this scenario resulting in a system shortfall of 30.5 TJ/d.

As discussed in Exhibit B.Staff.3 a), Exhibit JT1.24 and Exhibit JT1.6, Union has attempted to secure incremental delivered firm supply at Ojibway or incremental firm pipeline capacity to Ojibway but has not been successful. Union cannot rely on being able to obtain this level of firm delivered supply to Ojibway.

Union Gas Panhandle System (Design Day)



Legend

·······	NPS 16		6040 kPag MOP
▬	NPS 20		4140 kPag MOP
△	Station		3450 kPag MOP
			2930 kPag MOP

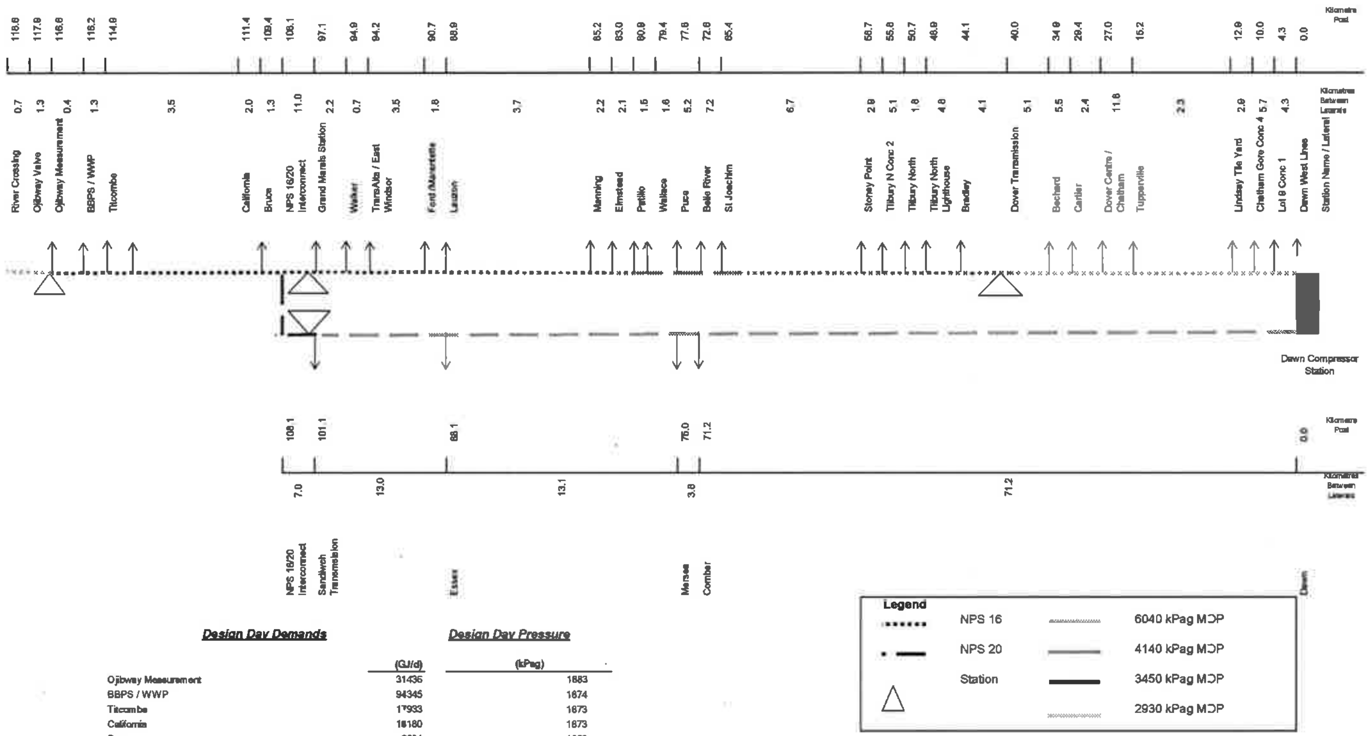
Design Day Demands	(GJ/d)	***Design Day Pressure*** (kPag)
Ojibway Measurement	30664	1858
BBPS / WWP	94345	1827
Titcombe	17817	1867
California	18102	1868
Bruce	6596	1869
Grand Marais Station	46132	1868
Walker	55044	1868
TransAlta / East Windsor	35466	1843
Ford /Marentette	1621	2012
Lauzon	25127	2065
Manning	11551	2246
Elmstead	1298	2247
Patillo	5146	2479
Wallace	57	2492
Puce	1827	2511
Belle River	4174	2632
St Joachim	668	2746
Stoney Point	1288	3084
Tilbury N Conc 2	10	3204
Tilbury North	3203	3481
Tilbury North Lighthouse	201	3553
Bradley	22	3744
Bechard	391	3907
Cartier	38	4150
Dover Centre / Chatham	50375	4630
Tupperville	2234	5290
Lindsay Tile Yard	19	5432
Chatham Gore Conc 4	19	5755
Lot 9 Conc 1	3	5919
Dawn West Lines	7558	6030
Comber	126318	3829
Mersea	42231	2620
Essex	18924	3383
Sandwich Transmission	14957	3760
Total	623426	

System Capacity	(GJ/d)
Total System Capacity including Ojibway Supplies	840,865 140,000
Fuel	
Total Requirements	823,426
Surplus	17,439

WINTER DESIGN DAY
PANHANDLE SYSTEM
WINTER 2017/2018
NO ADDITONAL FACILITIES BUILT

Filed: 2016-10-17
EB-2016-0186
Exhibit JT1.8
Attachment 1

Union Gas Panhandle System (Design Day)



Design Day Demands	(GJ/d)	***Design Day Pressure*** (kPag)
Ojibway Measurement	31436	1883
BBPS / WWP	94345	1874
Titcombe	17933	1873
California	18180	1873
Bruce	6604	1869
Grand Marais Station	46215	1867
Walker	63141	1866
TransAlta / East Windsor	35466	1836
Ford /Marentette	3934	1989
Lauzon	25127	2036
Manning	11551	2203
Elmstead	1298	2315
Patillo	5146	2422
Wallace	57	2441
Puce	1827	2453
Belle River	4174	2567
St Joachim	668	2676
Stoney Point	1288	2998
Tilbury N Conc 2	10	3135
Tilbury North	3547	3378
Tilbury North Lighthouse	201	3494
Bradley	22	3804.6
Bechard	391	4114
Cartier	38	4226
Dover Centre / Chatham	64210	4483
Tupperville	2234	5218
Lindsay Tile Yard	19	5341
Chatham Gore Conc 4	19	5496
Lot 9 Conc 1	3	5800
Dawn West Lines	7558	6029
Comber	144084	3055
Mersea	46599	3134
Essex	18942	3094
Sandwich Transmission	14957	2923
Total	671224	

System Capacity	(GJ/d)
Total System Capacity including	640,865
Ojibway Supplies	140,000
Total Requirements	671,224
Shortfall	30,359

WINTER DESIGN DAY
PANHANDLE SYSTEM
WINTER 2021/2022
NO ADDITIONAL FACILITES BUILT

secondary capacity.

I think it indicated there were two C-1 shippers, for instance, that delivered to Ojibway of which, I think -- if I understand, you have taken up some of that capacity.

MR. SHORTS: There is actually only one shipper after April 30th of 2017. And we have contract -- we have bought that supply at Ojibway from them.

MR. WOLNIK: So I think you have also indicated that Rover has reserved that capacity.

MR. SHORTS: Yes, that is to the best of our knowledge.

MR. WOLNIK: So why couldn't these new customers do some sort of commercial arrangement with Rover to receive volumes at Ojibway and provide them to you?

MR. SHORTS: Our understanding is that the Rover is not going to have Ojibway as a receipt point.

The predominant flow on the Rover will be through Vector, and they will not be offering a Ojibway receipt point, only a Dawn receipt point.

MR. WOLNIK: I am confused then. You have indicated that there is no capacity on Panhandle upstream of Ojibway because Rover has it all. But now you just told me most of the capacity is on Vector, which is - I understand that.

But you have introduced the issue that no capacity is available on Panhandle because Rover has it.

So you can't have it both ways, I don't think.

MR. SHORTS: No, what I said was Rover has contracted for the remaining capacity available on Panhandle to

Ojibway.

MR. WOLNIK: Right.

R. SHORTS: That will not be made available to their shippers. They will then be offering a bundled service to get volumes to Dawn, and the shippers will not have control over where that volume gets delivered, whether it gets delivered through the Ojibway path or whether it is delivered through the Vector path.

That will be Rover's call as to how they choose to deliver the volumes into Dawn.

MR. WOLNIK: How do you see that working then? Under what conditions would they or could they deliver through Ojibway in the winter time?

MR. SHORTS: It would be totally up to Rover to decide which path they were going to utilize, whether they were going to use their Vector path, or whether they were going to use their Panhandle eastern path.

MR. WOLNIK: Has union had discussions with Rover on this issue, because presumably you're the connecting pipeline. You would have to -- you would have to agree to move them downstream of Ojibway.

MR. SHORTS: Well, we have had conversations with Energy Transfer, not specifically with the -- with Rover.

MR. WOLNIK: So is Energy Transfer representing Rover in these discussions?

MR. SHORTS: I'm not exactly sure how they've delineated the responsibilities, but when we speak to the Panhandle person -- and sometimes I will say Energy

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Application Cover Letter, June 10, 2016, p.2, Paragraph 3; Exhibit A, Tab 3, p. 7, lines 13-18; Exhibit A, Tab 6, p. 1-6

Union expressed concerns over the significant uncertainty as a result of the introduction of the CCAP.

a) What other short term alternatives has Union considered compared to making significant investments in capacity enhancements that may not be required in the future? Please provide a detailed response.

b) If natural gas demand was to decline significantly after 2030 as a result of changes under the Province's CCAP, who would assume the risk of decline in capacity on the Panhandle System?

c) Under what conditions of deteriorating demand would Union's proposed asset fail to be used and useful?

d) Please provide in a matrix format a comparative assessment of all alternatives considered. For each alternative provide: incremental capacity, cost, in-service date, and any other assessment criteria used in the evaluation. Please include the short-term alternatives described in Union's response to the interrogatory #3 a).

Response:

a) As with any proposed facilities project, Union considered alternatives to infrastructure investment. The short-term commercial alternatives reviewed are insufficient to meet the forecasted demands expected by November 1, 2017.

As referenced at Exhibit A, Tab 6, pp.7-13, no commercial alternatives delivering incremental supply at Ojibway can meet the forecasted growth on a stand alone basis. Incremental facilities would also be required to meet the forecasted growth for November 2017 and beyond. Commercial alternatives delivering incremental supply at Ojibway would be provided either through firm transportation held by Union on the PEPL system or through contracted third party natural gas deliveries underpinned by firm transportation on the PEPL system. A combination of gas delivered to Ojibway from the PEPL system and new Union Panhandle System facilities has a similar 20 year NPV to the Proposed Pipeline recognizing costs over the first five years but would present significantly higher 20 year NPV costs with additional facilities in year six and beyond. In some cases, incremental deliveries at Ojibway would drive different facilities than the Proposed Pipeline which would not be available for service by November 1, 2017. As discussed in more detail below and as referenced at Exhibit A, Tab 6, pp.10-11, contracted deliveries at Ojibway are subject to availability, price and term uncertainty. In fact, Union was not able to secure incremental firm transportation on the PEPL system for November 1, 2017, as contemplated at Exhibit A, Tab 6, pp.7-9, limiting Union's delivered supply at Ojibway to 58 TJ/d at November 1, 2017. Please see response at Exhibit B.LPMA.11 a).

Purchasing natural gas supply in the limited market at Ojibway is also not a viable long term commercial option. Natural gas purchases at Ojibway will be subject to significant price and availability risk. Ojibway is not a liquid trading point. Ojibway is a trans-shipment point between two pipeline systems (PEPL in the United States and Union in Canada) with a limited number of counterparties holding transportation to and from Ojibway.

As identified in EB-2014-0182, Exhibit A, Tab 3, p.2 (Burlington Oakville Pipeline Project), Union generally looks to reduce the reliance on the secondary market to meet long term customer demands since it poses significant risk with respect to availability and price. Please see response at Exhibit B.BOMA.6 a).

Once the Project is in service, should the incremental demand not materialize as forecast, Union can reduce its reliance on gas supply deliveries to Ojibway from PEPL and replace those volumes with deliveries from Dawn. This would result in a higher utilization of the Proposed Pipeline and an efficient use of the asset.

Below is a summary of the commercial alternatives that were considered to both maintain existing firm requirements and meet incremental needs. Please see Attachment 1 for a table that outlines firm deliveries to Ojibway (C1 Ojibway to Dawn transportation contracted capacity, Union's Firm PEPL tranportation capacity and third party services delivered to Ojibway) as filed in evidence and as understood now, both effective November 1, 2017.

1. **Secure the portion of the 60 TJ/d of firm PEPL transportation contracts for which Union identified as not having renewal rights**

   Union recently participated in a PEPL transportation open season on July 13, 2016 and requested 22,000 MMBtu/d (23 TJ/d) of firm transportation capacity from the PEPL Field Zone to Ojibway for the term of November 1, 2017 to October 31, 2022 to include a right of first refusal ("ROFR") provision. This was in an effort to replace the firm transportation contracts that are expiring on PEPL and PEPL/Trunkline without ROFR rights. Union's bid for transportation capacity was not accepted by PEPL. PEPL indicated that sufficient capacity was not available at the Ojibway interconnect during the timeframe that Union requested the capacity. Please see Attachment 2 for correspondence with PEPL regarding this open season.

As a result, Union no longer has 60 TJ/d of firm PEPL transportation capacity to Ojibway effective November 1, 2017. Union now has only 37 TJ/d of firm PEPL transportation capacity to Ojibway effective November 1, 2017 (which includes renewal through ROFR rights). Exercising the ROFR will require Union to match any other offers to PEPL for the transportation capacity that Union is attempting to renew (as stated at Exhibit A, Tab 6, pp. 10-11). Accordingly, with respect to Exhibit A, Tab 6, p.9, line 6, neither the 23 TJ/d of firm transportation capacity discussed above is available on the PEPL system nor the 34 TJ/d of targeted incremental capacity.

Union has continued discussions with PEPL to attempt to secure additional firm transportation to Ojibway. These discussions have included the availability of a winter-only firm transportation service and the availability of annual firm transportation service. However, Union understands that PEPL has committed all remaining firm transportation capacity to Ojibway to the Rover Pipeline. At this point Union does not expect to be able to reach an agreement with PEPL on any additional firm transportation capacity to Ojibway. Please see response at Exhibit B.FRPO.7 a).

2. **Procure delivered firm supply from a third party at Ojibway and/or Dawn (must deliver utilizing firm transportation on PEPL)**

   Union issued an RFP on May 26, 2016 to secure incremental firm long-term transportation capacity on PEPL or to secure firm delivered supply at Ojibway through the PEPL system. The RFP was issued to a broad range of market participants, including current pipeline capacity holders, marketers and PEPL. Please see Attachment 3 for RFP details. Union received no interest from market participants in providing incremental firm long-term transportation on the PEPL system to Ojibway. Only one market participant responded to the RFP to provide a firm delivered service at Ojibway. This is not surprising given the number of counterparties holding transportation capacity to Ojibway on the PEPL system. On June 14, 2016, Union contracted for 20,000 MMBtu/d (21 TJ/d) of non-renewable firm incremental supply at Ojibway for the period November 1, 2016 to October 31, 2019. Therefore, effective November 1, 2017, the total amount of firm supply controlled by Union at Ojibway is 58 TJ/d (37 TJ/d + 21 TJ/d) with this number reducing to 37 TJ/d effective November 1, 2019. This total quantity (58 TJ/d) is similar to the original total quantity of PEPL transportation that Union held (60 TJ/d).

3. **Seek to reduce in-franchise firm obligations along Union's Panhandle System**

   i. Union conducted a reverse open season on May 11, 2016 that targeted in-franchise customers who hold firm capacity along Union's Panhandle System that were interested in: i) reducing or eliminating firm contract demand; or ii) converting firm contract demand to interruptible contract demand. This would allow Union to attach additional firm contract demand without incremental facilities. However, Union did not receive any reverse open season responses.

ii. Union has held discussions with in-franchise power customers located in the Windsor area that are served off of the Panhandle System to determine interest in reducing annual firm transportation demand or reducing firm transportation demand during peak days. Union has not been able to realize any incremental capacity as a result of these discussions but expects any quantity available to be much less than the 106 TJ/d required to meet the forecasted demand to 2021.

4. Union evaluated other commercial alternatives including:

i. Seeking an amendment to the existing firm C1 transportation contract still in effect at November 1, 2017 to obligate deliveries at Ojibway by negotiating a "must nominate" service - This is not currently a condition of Union's C1 firm transportation service. As a result of the RFP described above, Union secured 21 TJ/d of Ojibway deliveries from the sole remaining holder of firm C1 Ojibway to Dawn transportation capacity at November 1, 2017. Please see response at Exhibit B.APPrO.3 a).

ii. Seek a firm Ojibway to Dawn exchange service - This service would have Union receive natural gas at Ojibway when nominated and provide the counterparty the same amount of natural gas at Dawn. As a result of the RFP described above, Union secured 21 TJ/d of Ojibway deliveries from the sole remaining holder of firm C1 Ojibway to Dawn transportation capacity post November 1, 2017.

Union has entertained all of the above alternatives on a short-term basis. However, none of these alternatives will satisfy the five (5) year forecast growth of 106 TJ/d on the Panhandle System.

b) This will depend on the regulatory mechanism in place at the time for ratemaking, and the ability of rates to be charged and collected from customers in the future that recover costs.

Under the current framework losses in revenue as a result of decline in use per customer in the general service market are deferred and recovered from the ratepayer. Revenue lost as a result of the loss of customers or contract demand will reduce the return to the shareholder until rates are reset. Union in not adequately compensated through the current allowed return on equity, its current equity thickness or the period over which it recovers its investment to cover the uncertainty associated with Cap and Trade and the CCAP. In Union's view, it should not be exposed to any risk related to investments prudently incurred to meet the needs of customers.

c) Union submits the question should be worded to ask under what conditions of deteriorating demand would Union's proposed asset fail to be used **or** useful, rather than used and useful. Assets settle to rate base and are included in rates when they are used or useful. An asset does not have to be used to be included in rates.

The proposed asset is expected to be useful for more than 50 years with normal operations and maintenance. The proposed asset would no longer be used if customers leave the system opting to eliminate natural gas from their energy portfolio.
Given that Union has 58 TJ/d of transportation capacity to (and/or delivered supply at) Ojibway, Union could reduce the reliance on these supplies and replace them with supplies at Dawn, therefore increasing the utilization of the proposed facilities. Therefore demands would have to drop by more than 58 TJ/d just to reduce the usage of the pipe below 100%, let alone a level where the facilities were significantly underutilized.

d) Please see Attachment 4 as well as the discussion of short-term alternatives in the responses above.

storage and its gas supply all located.

Ten percent are served using Union's gas supply that arrives at Ojibway.

So that gas supply arriving at Ojibway is about sixty tJs a day, and it is relied upon and consumed in the Windsor market to support the design day condition of the pan-handle_ transmission system.

Reliance on that sixty tJs a day to date has allowed deferral of infrastructure investment reinforcement on the pan-handle system.

The Ojibway River crossing itself is composed of two NPS 12 pipelines, with a MOP of 2930 kPa, and they have a capacity of 210 tJs a day as per their presidential permit, which is federal government Of the United States stipulation for their border crossing.

The ability to import gas on to Union’s system from Ojibway, whether it is Union's gas supply or C-1 transportation, is limited by the ability of the market to burn that gas, and the ability of the existing transmission systems, or the compressor station at Sandwich and the other piping, to move the remainder back to Dawn.

So in the summertime, our import capability is 115 tJs a day, and in the winter time, it is 140 tJs a day.

There are two main pressure constraints on the pan-handle system. One is on the NPS 16 feeding the Brighton Beach power station, where we're contractually obligated to provide them with 1724 kPa.

The second is on the NPS 20 in Leamington area, where

FRPO COMPENDIUM

TAB 2

EB-2016-0186
PANHANDLE REINFORCEMENT PROJECT

JT1.10 OJIBWAY PHYSICAL DELIVERIES
NET OF
JT1. 9 TOTAL WINDSOR MARKET

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
11/1/2013	135,967	69,929	66,038
11/2/2013	141,931	71,705	70,227
11/3/2013	136,272	79,193	57,079
11/4/2013	136,591	77,982	58,609
11/5/2013	134,482	74,551	59,930
11/6/2013	133,828	75,707	58,121
11/7/2013	133,684	91,297	42,387
11/8/2013	133,128	71,563	61,566
11/9/2013	133,229	51,722	81,507
11/10/2013	132,738	67,120	65,618
11/11/2013	132,929	85,839	47,090
11/12/2013	128,958	107,356	21,603
11/13/2013	134,876	95,198	39,678
11/14/2013	118,946	79,688	39,258
11/15/2013	133,433	70,223	63,210
11/16/2013	138,730	63,135	75,596
11/17/2013	166,816	71,106	95,710
11/18/2013	127,670	82,628	45,042
11/19/2013	123,126	93,618	29,509
11/20/2013	123,261	79,787	43,474
11/21/2013	130,471	77,565	52,906
11/22/2013	118,576	91,667	26,908
11/23/2013	107,610	105,584	2,026
11/24/2013	107,841	107,043	799
11/25/2013	107,772	111,397	-3,625
11/26/2013	89,822	99,074	-9,252
11/27/2013	117,417	112,710	4,707
11/28/2013	118,578	109,420	9,158
11/29/2013	118,443	97,531	20,912
11/30/2013	118,406	87,589	30,817
12/1/2013	134,359	84,430	49,929
12/2/2013	138,330	103,029	35,301
12/3/2013	153,766	83,841	69,925
12/4/2013	161,340	71,748	89,592
12/5/2013	134,696	78,749	55,947
12/6/2013	91,732	98,821	-7,089
12/7/2013	91,533	105,106	-13,572
12/8/2013	95,373	100,781	-5,408
12/9/2013	97,708	107,202	-9,494
12/10/2013	48,625	111,930	-63,305
12/11/2013	65,525	148,292	-82,766
12/12/2013	107,915	123,544	-15,628
12/13/2013	128,840	139,300	-10,460
12/14/2013	138,255	116,952	21,303
12/15/2013	136,157	128,237	7,920
12/16/2013	123,484	166,881	-43,397

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
12/17/2013	121,614	132,209	-10,595
12/18/2013	133,679	107,215	26,464
12/19/2013	135,458	92,169	43,288
12/20/2013	124,847	87,638	37,209
12/21/2013	150,489	93,070	57,419
12/22/2013	145,865	92,745	53,120
12/23/2013	158,641	109,539	49,103
12/24/2013	161,147	114,957	46,190
12/25/2013	152,410	113,131	39,279
12/26/2013	145,087	102,925	42,162
12/27/2013	166,591	93,223	73,369
12/28/2013	171,857	87,608	84,249
12/29/2013	171,744	94,754	76,990
12/30/2013	172,022	110,320	61,702
12/31/2013	172,087	116,531	55,556
1/1/2014	171,740	126,536	45,204
1/2/2014	171,605	180,911	-9,306
1/3/2014	137,418	189,566	-52,148
1/4/2014	18,719	103,254	-84,535
1/5/2014	56,971	106,820	-49,849
1/6/2014	21,488	152,486	-130,998
1/7/2014	131,217	173,868	-42,651
1/8/2014	88,389	200,245	-111,856
1/9/2014	130,505	156,144	-25,639
1/10/2014	171,027	101,095	69,931
1/11/2014	171,954	99,957	71,997
1/12/2014	172,319	101,785	70,534
1/13/2014	173,024	94,884	78,140
1/14/2014	177,021	99,342	77,680
1/15/2014	178,111	114,054	64,058
1/16/2014	183,507	120,090	63,417
1/17/2014	181,663	117,906	63,756
1/18/2014	166,595	119,708	46,887
1/19/2014	166,554	115,610	50,944
1/20/2014	165,719	186,254	-20,536
1/21/2014	122,667	245,398	-122,731
1/22/2014	128,024	259,097	-131,073
1/23/2014	107,905	237,495	-129,590
1/24/2014	117,938	200,353	-82,414
1/25/2014	97,503	146,436	-48,933
1/26/2014	103,541	172,899	-69,358
1/27/2014	103,536	182,679	-79,143
1/28/2014	92,836	192,062	-99,226
1/29/2014	138,303	161,278	-22,975
1/30/2014	167,922	124,209	43,713
1/31/2014	170,841	114,405	56,436

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
2/1/2014	169,133	112,895	56,238
2/2/2014	163,961	123,200	40,761
2/3/2014	105,342	116,697	-11,355
2/4/2014	159,624	138,384	21,240
2/5/2014	148,470	143,405	5,065
2/6/2014	130,534	162,529	-31,996
2/7/2014	145,917	170,078	-24,161
2/8/2014	131,254	164,794	-33,540
2/9/2014	144,246	151,854	-7,608
2/10/2014	162,717	172,410	-9,693
2/11/2014	186,976	236,728	-49,752
2/12/2014	195,077	211,669	-16,592
2/13/2014	178,020	163,417	14,602
2/14/2014	184,391	111,005	73,386
2/15/2014	186,190	118,171	68,019
2/16/2014	195,183	146,961	48,222
2/17/2014	202,487	170,047	32,440
2/18/2014	194,881	147,332	47,550
2/19/2014	189,386	139,879	49,507
2/20/2014	180,774	109,184	71,590
2/21/2014	186,242	113,891	72,350
2/22/2014	119,002	89,084	29,918
2/23/2014	117,776	98,859	18,917
2/24/2014	117,685	115,860	1,826
2/25/2014	117,457	140,203	-22,746
2/26/2014	117,586	136,510	18,924
2/27/2014	141,827	149,632	-7,805
2/28/2014	137,182	128,188	8,994
3/1/2014	144,588	128,494	16,094
3/2/2014	148,364	170,029	-21,665
3/3/2014	128,947	166,764	-37,818
3/4/2014	140,857	185,206	-44,349
3/5/2014	137,879	181,371	-43,492
3/6/2014	144,803	159,864	-15,060
3/7/2014	171,184	116,949	54,235
3/8/2014	140,797	114,868	25,929
3/9/2014	146,805	89,112	57,692
3/10/2014	146,999	83,558	63,441
3/11/2014	146,663	81,315	65,348
3/12/2014	144,710	140,357	4,354
3/13/2014	143,478	141,093	2,385
3/14/2014	147,045	80,893	66,152
3/15/2014	146,405	90,346	56,059
3/16/2014	146,653	128,437	18,215
3/17/2014	146,819	157,806	-10,987
3/18/2014	146,555	110,217	36,338

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
3/19/2014	146,099	102,488	43,611
3/20/2014	146,304	100,371	45,933
3/21/2014	146,881	83,687	63,194
3/22/2014	162,096	92,563	69,532
3/23/2014	161,043	120,059	40,983
3/24/2014	163,500	153,518	9,982
3/25/2014	133,394	145,307	-11,913
3/26/2014	121,610	113,024	8,586
3/27/2014	123,147	100,059	23,088
3/28/2014	158,610	82,448	76,161
3/29/2014	172,329	95,119	77,210
3/30/2014	168,617	85,644	82,972
3/31/2014	168,209	?	#VALUE!
11/1/2014	125,202	78,237	46,966
11/2/2014	115,427	76,632	38,795
11/3/2014	112,524	64,787	47,737
11/4/2014	113,383	71,790	41,593
11/5/2014	115,981	65,404	50,577
11/6/2014	118,184	76,374	41,810
11/7/2014	147,531	79,939	67,591
11/8/2014	148,696	78,698	69,998
11/9/2014	148,408	71,595	76,813
11/10/2014	146,465	75,708	70,757
11/11/2014	148,605	82,588	66,016
11/12/2014	96,486	81,864	14,622
11/13/2014	125,647	93,149	32,497
11/14/2014	124,844	92,953	31,890
11/15/2014	127,047	90,904	36,143
11/16/2014	126,505	90,049	36,456
11/17/2014	158,825	109,378	49,447
11/18/2014	137,606	120,977	16,629
11/19/2014	106,742	108,984	-2,242
11/20/2014	113,183	106,892	6,291
11/21/2014	141,644	103,127	38,517
11/22/2014	142,059	82,090	59,969
11/23/2014	142,414	65,990	76,423
11/24/2014	143,016	80,212	62,804
11/25/2014	142,934	94,892	48,041
11/26/2014	142,592	103,253	39,339
11/27/2014	142,483	100,289	42,194
11/28/2014	142,557	97,463	45,094
11/29/2014	122,953	76,629	46,324
11/30/2014	113,570	69,490	44,080
12/1/2014	169,205	98,139	71,065
12/2/2014	168,223	98,304	69,919
12/3/2014	172,440	92,804	79,637

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
12/4/2014	165,912	98,873	67,039
12/5/2014	171,274	108,741	62,533
12/6/2014	174,793	92,877	81,917
12/7/2014	176,525	88,114	88,410
12/8/2014	178,533	93,220	85,314
12/9/2014	179,278	96,611	82,668
12/10/2014	178,828	101,417	77,411
12/11/2014	171,685	95,692	75,993
12/12/2014	178,863	92,439	86,423
12/13/2014	176,555	87,818	88,737
12/14/2014	169,780	68,670	101,110
12/15/2014	170,177	77,593	92,584
12/16/2014	166,253	81,545	84,707
12/17/2014	165,407	99,033	66,374
12/18/2014	169,257	90,122	79,135
12/19/2014	168,631	92,323	76,307
12/20/2014	169,234	88,092	81,142
12/21/2014	169,482	93,021	76,461
12/22/2014	162,299	87,320	74,979
12/23/2014	169,143	81,704	87,440
12/24/2014	167,736	61,085	106,651
12/25/2014	167,222	39,863	127,359
12/26/2014	164,554	43,920	120,634
12/27/2014	165,942	53,759	112,183
12/28/2014	167,157	68,456	98,701
12/29/2014	168,118	97,259	70,858
12/30/2014	128,999	145,423	-16,424
12/31/2014	121,520	114,339	7,181
1/1/2015	134,711	97,172	37,538
1/2/2015	153,991	123,995	29,996
1/3/2015	132,618	82,117	50,502
1/4/2015	132,818	101,545	31,273
1/5/2015	133,196	127,605	5,591
1/6/2015	131,800	138,722	-6,922
1/7/2015	55,529	198,013	-142,484
1/8/2015	64,804	155,845	-91,042
1/9/2015	59,641	126,690	-67,049
1/10/2015	64,671	121,793	-57,122
1/11/2015	64,691	99,039	-34,348
1/12/2015	66,166	144,911	-78,745
1/13/2015	81,402	228,546	-147,144
1/14/2015	96,302	157,380	-61,078
1/15/2015	141,259	114,541	26,719
1/16/2015	163,973	168,806	-4,834
1/17/2015	143,195	89,910	53,285
1/18/2015	148,106	89,922	58,183

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
1/19/2015	148,732	96,147	52,585
1/20/2015	149,078	128,022	21,056
1/21/2015	169,081	119,867	49,214
1/22/2015	172,976	109,660	63,316
1/23/2015	173,059	98,791	74,267
1/24/2015	174,100	98,268	75,832
1/25/2015	168,881	142,620	26,261
1/26/2015	169,055	146,920	22,135
1/27/2015	168,895	197,535	-28,640
1/28/2015	155,158	133,189	21,969
1/29/2015	165,683	121,921	43,762
1/30/2015	168,650	181,646	-12,997
1/31/2015	168,339	117,204	51,135
2/1/2015	68,529	107,707	-39,178
2/2/2015	71,917	136,878	-64,961
2/3/2015	71,847	129,123	-57,276
2/4/2015	71,629	123,870	-52,241
2/5/2015	61,038	130,387	-69,349
2/6/2015	70,534	119,675	-49,142
2/7/2015	73,648	84,099	-10,451
2/8/2015	70,606	106,306	-35,699
2/9/2015	70,893	148,394	-77,500
2/10/2015	144,098	135,922	8,177
2/11/2015	159,438	145,099	14,339
2/12/2015	106,729	153,908	-47,178
2/13/2015	131,385	152,958	-21,573
2/14/2015	105,073	124,586	-19,513
2/15/2015	104,194	167,405	-63,211
2/16/2015	104,414	175,940	-71,527
2/17/2015	103,382	158,601	-55,220
2/18/2015	96,201	165,663	-69,462
2/19/2015	79,449	211,360	-131,911
2/20/2015	87,137	216,276	-129,139
2/21/2015	81,182	160,086	-78,904
2/22/2015	102,039	137,777	-35,738
2/23/2015	98,407	199,895	-101,488
2/24/2015	92,203	217,871	-125,668
2/25/2015	92,083	158,900	-66,817
2/26/2015	115,808	167,323	-51,515
2/27/2015	106,892	186,400	-79,508
2/28/2015	106,454	111,942	-5,488
3/1/2015	155,652	107,354	48,298
3/2/2015	171,789	122,055	49,734
3/3/2015	174,049	105,408	68,641
3/4/2015	176,104	125,379	50,725
3/5/2015	164,364	180,139	-15,775

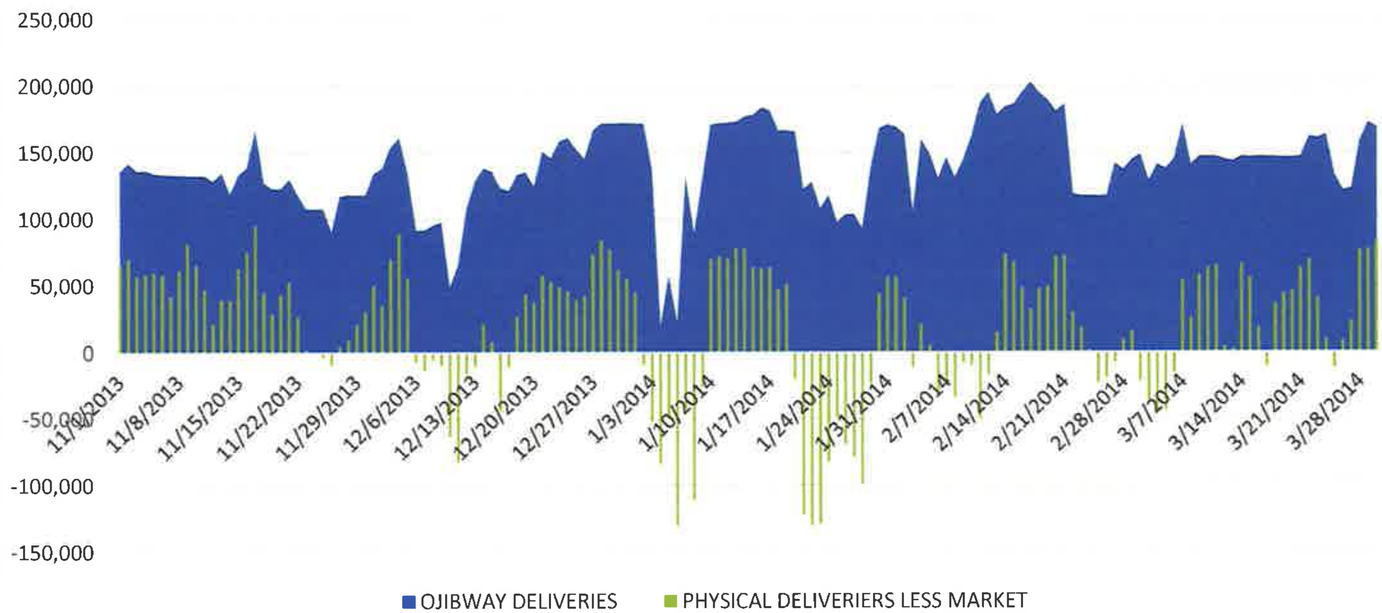
Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
3/6/2015	165,208	126,175	39,033
3/7/2015	161,190	81,947	79,244
3/8/2015	159,729	84,079	75,650
3/9/2015	147,564	78,366	69,198
3/10/2015	146,549	118,505	28,044
3/11/2015	147,482	80,911	66,571
3/12/2015	145,851	80,499	65,352
3/13/2015	150,854	108,403	42,451
3/14/2015	149,026	79,084	69,941
3/15/2015	145,699	75,951	69,747
3/16/2015	146,108	72,495	73,613
3/17/2015	145,927	88,792	57,135
3/18/2015	146,124	127,020	19,104
3/19/2015	146,557	93,652	52,905
3/20/2015	147,052	80,976	66,076
3/21/2015	146,854	93,184	53,671
3/22/2015	146,932	99,163	47,769
3/23/2015	143,803	113,288	30,515
3/24/2015	147,506	132,680	14,827
3/25/2015	147,576	85,941	61,635
3/26/2015	156,059	92,957	63,101
3/27/2015	157,827	149,875	7,952
3/28/2015	162,347	96,326	66,021
3/29/2015	166,669	89,368	77,301
3/30/2015	167,291	79,113	88,178
3/31/2015	166,432	?	#VALUE!
11/1/2015	152,671	58,260	94,411
11/2/2015	120,395	56,736	63,659
11/3/2015	120,168	97,429	22,739
11/4/2015	122,107	57,606	64,500
11/5/2015	139,396	59,590	79,806
11/6/2015	139,516	59,791	79,726
11/7/2015	138,960	65,914	73,046
11/8/2015	139,064	70,267	68,796
11/9/2015	124,485	46,710	77,775
11/10/2015	121,879	75,405	46,474
11/11/2015	140,280	109,081	31,199
11/12/2015	143,605	82,421	61,184
11/13/2015	143,308	83,764	59,544
11/14/2015	142,537	62,989	79,548
11/15/2015	121,325	38,062	83,264
11/16/2015	121,048	68,170	52,878
11/17/2015	120,867	96,246	24,621
11/18/2015	120,991	61,329	59,661
11/19/2015	101,132	76,490	24,643
11/20/2015	101,098	54,579	46,518

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
11/21/2015	100,925	88,399	12,525
11/22/2015	100,853	94,201	6,652
11/23/2015	101,131	91,418	9,714
11/24/2015	100,921	109,446	-8,525
11/25/2015	101,073	63,587	37,486
11/26/2015	101,259	70,910	30,349
11/27/2015	116,180	80,840	35,340
11/28/2015	115,832	93,130	22,703
11/29/2015	115,810	92,029	23,782
11/30/2015	109,695	86,741	22,954
12/1/2015	102,007	74,588	27,419
12/2/2015	103,576	85,315	18,261
12/3/2015	102,395	88,762	13,633
12/4/2015	102,092	70,745	31,347
12/5/2015	68,608	86,020	-17,411
12/6/2015	68,612	92,406	-23,794
12/7/2015	68,503	99,057	-30,555
12/8/2015	82,011	89,647	-7,637
12/9/2015	114,181	66,135	48,046
12/10/2015	116,969	81,946	35,023
12/11/2015	68,240	68,543	-303
12/12/2015	93,224	61,952	31,272
12/13/2015	103,210	66,450	36,760
12/14/2015	118,074	76,218	41,857
12/15/2015	80,024	77,596	2,427
12/16/2015	90,721	80,387	10,334
12/17/2015	99,102	99,628	-526
12/18/2015	101,275	93,733	7,542
12/19/2015	101,076	103,244	-2,167
12/20/2015	101,201	90,965	10,236
12/21/2015	101,104	78,913	22,191
12/22/2015	101,593	77,725	23,868
12/23/2015	97,884	60,033	37,851
12/24/2015	101,991	55,593	46,398
12/25/2015	102,008	41,024	60,984
12/26/2015	101,529	44,751	56,778
12/27/2015	101,604	54,288	47,316
12/28/2015	101,678	67,096	34,581
12/29/2015	101,623	80,317	21,306
12/30/2015	101,686	94,002	7,684
12/31/2015	101,658	99,187	2,471
1/1/2016	101,790	96,643	5,147
1/2/2016	102,030	99,097	2,933
1/3/2016	101,041	104,988	-3,948
1/4/2016	101,467	160,150	-58,683
1/5/2016	106,015	134,064	-28,048

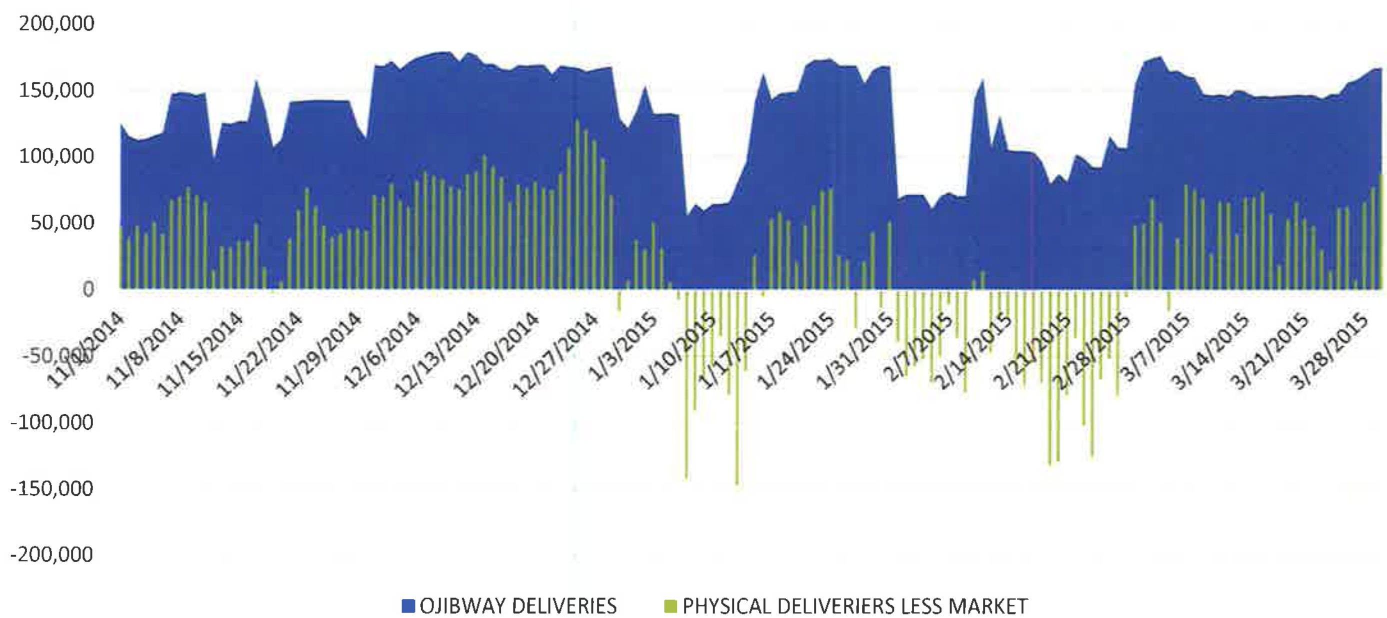
	FROM JT1.10		PHYSICAL
Date	OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL DELIVERIERS LESS MARKET
1/6/2016	100,188	100,094	94
1/7/2016	98,617	93,614	5,003
1/8/2016	104,397	90,350	14,046
1/9/2016	101,429	78,900	22,528
1/10/2016	101,180	115,479	-14,299
1/11/2016	101,718	116,943	-15,225
1/12/2016	91,269	122,744	-31,475
1/13/2016	91,424	118,406	-26,983
1/14/2016	91,390	103,494	-12,104
1/15/2016	90,817	91,187	-370
1/16/2016	95,310	105,922	-10,613
1/17/2016	101,411	123,090	-21,679
1/18/2016	101,555	137,990	-36,435
1/19/2016	101,332	119,111	-17,779
1/20/2016	101,063	139,219	-38,157
1/21/2016	100,938	112,997	-12,059
1/22/2016	100,936	112,411	-11,475
1/23/2016	100,404	100,454	-49
1/24/2016	100,554	100,784	-230
1/25/2016	100,808	93,254	7,554
1/26/2016	100,787	100,408	379
1/27/2016	100,857	110,973	-10,116
1/28/2016	100,777	106,867	-6,090
1/29/2016	100,842	104,173	-3,331
1/30/2016	100,723	75,406	25,317
1/31/2016	100,688	83,932	16,756
2/1/2016	100,887	83,959	16,927
2/2/2016	100,961	88,943	12,019
2/3/2016	100,341	64,497	35,844
2/4/2016	101,050	105,036	-3,986
2/5/2016	101,071	95,248	5,823
2/6/2016	101,342	92,161	9,181
2/7/2016	101,546	71,407	30,139
2/8/2016	102,015	88,806	13,209
2/9/2016	102,103	105,660	-3,557
2/10/2016	102,059	117,955	-15,897
2/11/2016	102,068	118,537	-16,468
2/12/2016	101,692	117,313	-15,622
2/13/2016	101,438	155,285	-53,847
2/14/2016	101,704	137,298	-35,594
2/15/2016	101,511	109,775	-8,264
2/16/2016	101,353	123,018	-21,665
2/17/2016	101,367	123,231	-21,864
2/18/2016	101,448	104,624	-3,176
2/19/2016	100,231	86,499	13,733
2/20/2016	101,407	107,246	-5,839

Date	FROM JT1.10 OJIBWAY DELIVERIES	TOTAL MARKET	PHYSICAL PHYSICAL DELIVERIERS LESS MARKET
2/21/2016	101,515	111,523	-10,007
2/22/2016	101,259	113,528	-12,269
2/23/2016	101,373	112,578	-11,205
2/24/2016	101,557	110,427	-8,871
2/25/2016	101,498	115,100	-13,602
2/26/2016	101,485	109,690	-8,205
2/27/2016	101,596	102,868	-1,272
2/28/2016	92,212	73,292	18,920
2/29/2016	101,474	97,848	3,627
3/1/2016	101,504	113,787	-12,283
3/2/2016	79,894	152,270	-72,376
3/3/2016	83,254	108,467	-25,212
3/4/2016	100,946	82,977	17,968
3/5/2016	104,132	76,716	27,416
3/6/2016	105,769	78,137	27,633
3/7/2016	99,259	72,309	26,950
3/8/2016	96,769	139,954	-43,185
3/9/2016	101,238	64,448	36,790
3/10/2016	106,945	74,254	32,691
3/11/2016	112,473	36,278	76,195
3/12/2016	108,044	32,605	75,439
3/13/2016	112,216	35,573	76,643
3/14/2016	112,073	55,943	56,131
3/15/2016	155,340	74,355	80,985
3/16/2016	163,124	92,411	70,713
3/17/2016	158,252	74,029	84,223
3/18/2016	159,386	85,446	73,940
3/19/2016	161,553	90,671	70,882
3/20/2016	158,442	69,159	89,283
3/21/2016	157,337	83,025	74,312
3/22/2016	153,183	52,403	100,779
3/23/2016	162,061	82,575	79,485
3/24/2016	165,211	62,386	102,825
3/25/2016	153,905	43,184	110,721
3/26/2016	157,631	44,845	112,786
3/27/2016	150,398	38,125	112,273
3/28/2016	173,988	81,634	92,354
3/29/2016	172,057	77,175	94,882
3/30/2016	170,780	61,667	109,112
3/31/2016	171,241		

WINTER 2013/14
OJIBWAY DELIVERIES LESS WINDSOR TOTAL MARKET
(TOTAL MARKET IS BLUE AREA to the tip of the Green Bar)
(POSITIVE GREEN VALUE MEANS GAS LEAVES WINDSOR MARKET)



WINTER 2014/15
OJIBWAY DELIVERIES LESS WINDSOR TOTAL MARKET
(TOTAL MARKET IS BLUE AREA to the Tip of the Green Bar)
(POSITIVE GREEN VALUE MEANS GAS LEAVES WINDSOR MARKET)



WINTER 2015/16
OJIBWAY DELIVERIES LESS WINDSOR TOTAL MARKET
(TOTAL MARKET IS BLUE AREA to the tip of Green Bar)
(POSITIVE GREEN VALUE MEANS GAS LEAVES WINDSOR MARKET)