



NGTL System and Foothills PipeLines Ltd.

Customer Operations Meeting

September 2, 2021



For information purposes only

Welcome and Thank You for Joining Us

Participating via WebEx:

- Please sign-in through WebEx application including your full name and company
- To reduce background noise and improve audio quality, all WebEx participants will be placed on mute
- Please submit your questions via the chat function and we will answer them at the best possible opportunity

Forward Looking Information

This presentation includes certain forward-looking information. Statements that are forward-looking are based on certain assumptions and on what we know and expect today and generally include words like anticipate, expect, believe, may, will, should, estimate or other similar words.

The information provided is for informational purposes only and is not to be relied upon for any other purpose whatsoever. The information is based upon certain assumptions that may or may not be accurate, and therefore is subject to various risks and uncertainties. TC Energy shall not be liable for damages sustained as a result of any use or reliance on such information.

The outages listed in this presentation are not an exhaustive list. Outage date, duration, and impact may be subject to change. Refer to the Daily Operating Plan (DOP) for all planned outages with potential service impact.

**No
impact to FT**

Refers to outage periods where FT impact is not expected

**Potential
impact to FT**

Refers to outage periods where there is potential of FT impact

**Partial
impact to FT**

Refers to outage periods where FT impact is expected

Important Notes



Outage information in this presentation may not be accurate beyond the September 2, NGTL/Foothills Customer Operations (WebEx only) meeting



For current outage information, please refer to the most recent Daily Operating Plan (DOP) on my.TC Customer Express



This meeting will only cover operational topics related to the NGTL and Foothills systems. For information on Commercial and Regulatory topics, please contact your Marketing Representative

Back To School



Signs and Signals

- Flashing **YELLOW** prepare to stop
- Flashing **RED** means **STOP!**
- Stop 20 meters/yards behind buses
- Never pass a school bus with flashing red
- Proceed once red lights no longer flashing
- Pass any school bus with caution



Know the Zones

- School zones are in affect
- Times may be different in your community
- When in doubt slow down

Watch for Low Visibility

School may start or finish during:

- Dawn or Dusk
- Fog or Cloud
- Rain or Shine



Note: Kids may be wearing masks that lower peripheral vision, so **YOU** need to spot **THEM**.



Agenda

- 1 Otter Lake Outage Review
- 2 Review Daily Operating Plan (DOP)
- 3 Customer Feedback
- 4 Operational Balancing Agreements (OBAs) 101



Otter Lake Outage Review

Guiding Principles for System Operations

System managed in accordance with NGTL guiding principles:

1. **Prioritize** availability of **firm service** – reduce IT availability first reducing flow to align with system capability
2. **Optimize throughput** – maximize system capability without incremental impact to FT availability



Managing system constraints

- Outages are **necessary** to facilitate **safe execution of maintenance** program to ensure **safety and reliability** of the system
- When restrictions are required, NGTL **consistently applies** the guiding principles to manage system flow and align the flow with throughput capability at the constraint
- Each system constraint is **unique and assessed specifically** based on the location and facilities involved in the outage, system load factor, linepack, supply and demand distribution, and other applicable factors
- The same facility outage at **different times** may result in **different restrictions** (services, areas, magnitude or duration)

Otter Lake Compressor Station Outage

NCC Outages:

- Outages on the NCC have the potential to drive both broad area and local area restrictions.
- If broad area restriction, it could impact receipts and potentially deliveries.
- If local area restriction, it could impact receipts or deliveries only.

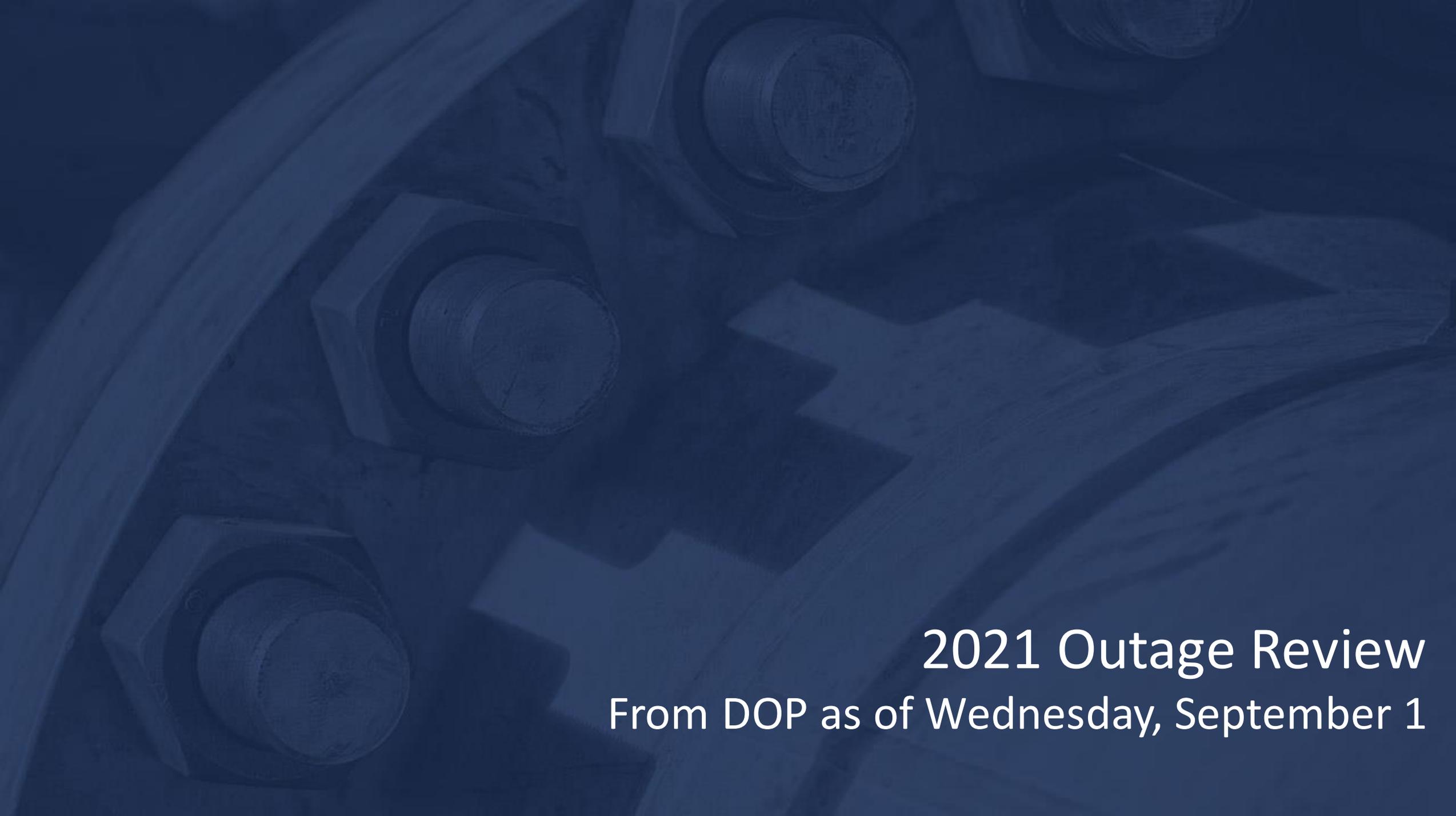
Broad Area Restriction:

- If USJR Flow > Capability, then outage is managed via broad area restriction protocol (IT-R → IT-D → FT-R).
- Since USJR Flows (receipts minus storage) < Capability, then USJR flows were fully authorized (Guiding Principle #2: Optimize Throughput)

Local Area Restriction:

- The Otter Lake outage (on NCC) reduced NCC flows.
- Increased NLAT flows were required to support firm northeast demand.
- This reduced EGAT capability.
- EGAT Nominations > EGAT Capability, resulting in a local area partial IT-D restriction.





2021 Outage Review

From DOP as of Wednesday, September 1

Publication:

Sep 01, 2021

Compared to:

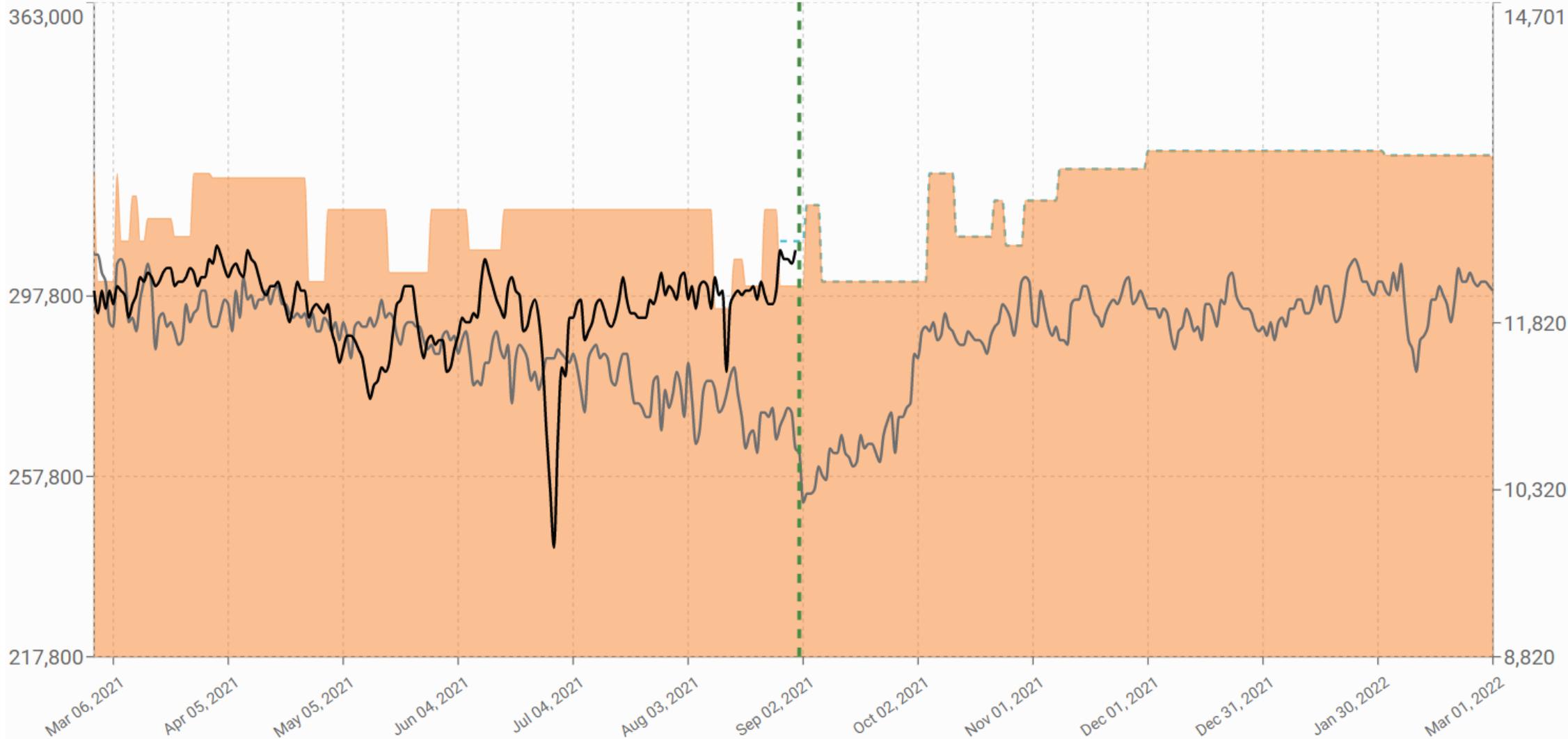
Aug 06, 2021

Upstream James River

Capability - Actual Flow - Historical Flow - - Compared to

10³m³/day

TJ/day



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Upstream James River Receipt Area (USJR)

No
impact to FT

Potential
impact to FT

Partial
impact to FT

Outage Description	Start	End	USJR Outage Capability (10 ⁶ m ³ /d)	USJR Impact (10 ⁶ m ³ /d)	Area Outage Capability (10 ⁶ m ³ /d)	Outage Area Typical Flows (10 ⁶ m ³ /d)	Service Allowable Location/Area
Otter Lake - Compressor Station Maintenance	27-Aug-21	2-Sep-21	310 300	17	191 182	145-180	Potential impact to FT-R (U/S Latornell)
Gold Creek - Compressor Station Modifications	7-Sep-21	4-Oct-21	301	17	175	145-180	Potential impact to FT-R (U/S Latornell) Potential impact to IT-D (D/S Latornell)
Clearwater - Compressor Station Maintenance	27-Sep-21	1-Oct-21	310	8	N/A	260-310	Potential impact to FT-R USJR
Latornell - Compressor Station Maintenance	12-Oct-21	16-Oct-21	311	14	N/A	260-310	Potential impact to FT-R USJR
Latornell A2 - Compressor Station Maintenance	12-Oct-21	21-Oct-21	311	14	222	170-210	Potential impact to FT-R USJR U/S of Knight & Berland
Hidden Lake – Compressor Station Maintenance	18-Oct-21	7-Nov-21	319	6	194	145-180	Potential impact to FT-R USJR U/S of Latornell
Alces River - Compressor Station Maintenance	25-Oct-21	29-Oct-21	309	16	N/A	260-310	Potential impact to FT-R USJR

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Sep 01, 2021

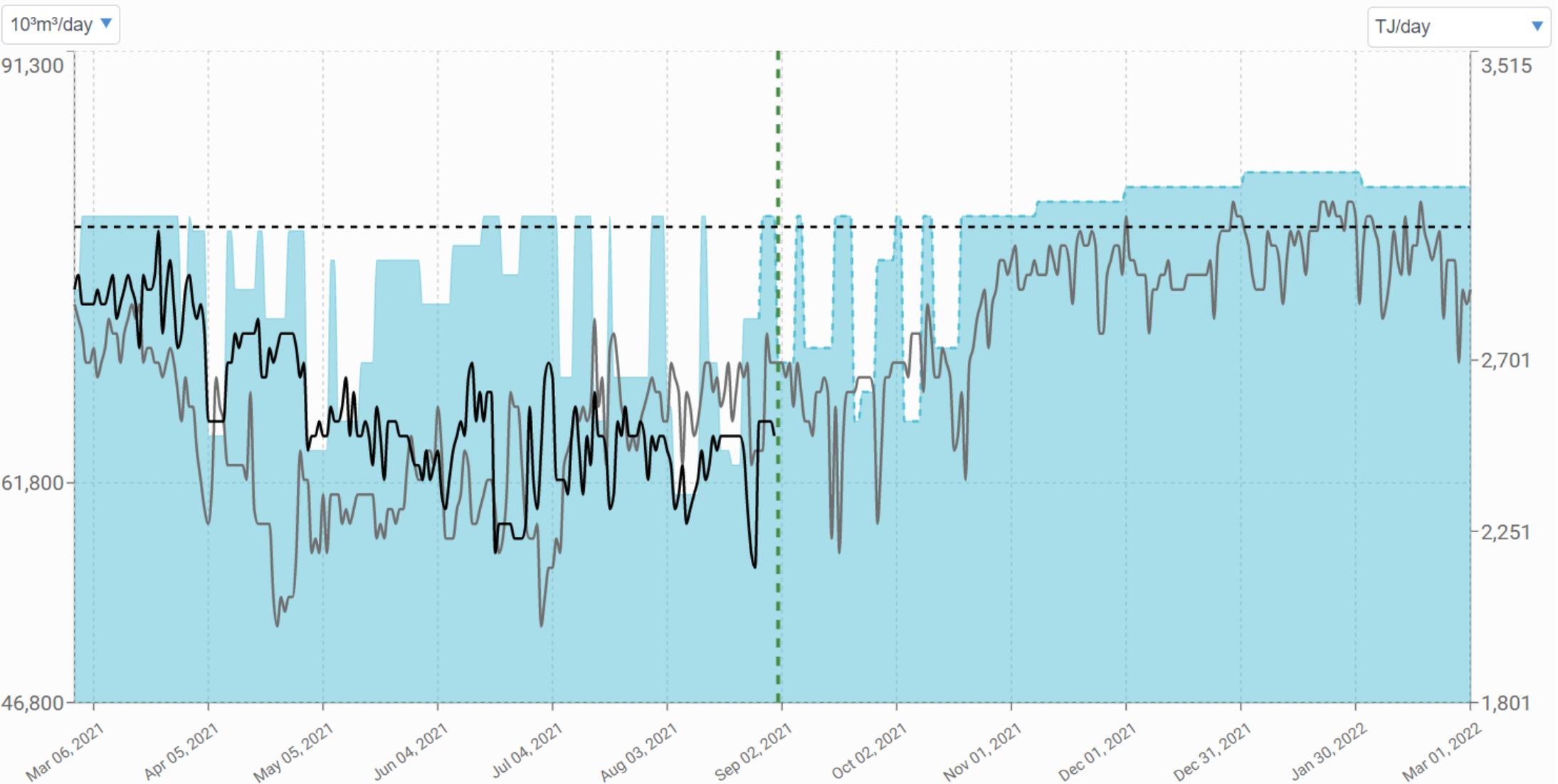
Compared to:

Aug 06, 2021

Alberta-B.C. Border

(includes both NGTL and Foothills BC outages)

■ Capability - Actual Flow - Historical Flow - - Contracts - - Compared to



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West Gate Delivery Area (WGAT)

Foothills Zone 8 (FHBC)

No
impact to FT

Potential
impact to FT

Partial
impact to FT

Outage Description	Start	End	Capability/ Allowable (10 ⁶ m ³ /day)	Impact (10 ⁶ m ³ /d)	System	Service Allowable Location/Area
NPS 36 Foothills Zone 7 Leg 1A – Pipeline Maintenance	1-Sep-21	5-Sep-21	70	10	NGTL	Potential Impact to FT-D: Segment 22 and partial 21
NPS 42 Western Alberta System Mainline Loop - Pipeline Maintenance	8-Sep-21	15-Sep-21	71	9	NGTL	Potential impact to FT-D: Alberta/BC and Alberta/Montana Borders
NPS 36 Western Alberta System Mainline - Pipeline Modification	21-Sep-21	26-Sep-21	68	12	NGTL	Potential Impact to FT-D: Alberta/BC and Alberta/Montana Borders
Clearwater – Compressor Station Maintenance	27-Sep-21	1-Oct-21	77	3	NGTL	Potential impact to FT: Segment 22 and partial 21
Elko - Compressor Station Maintenance	21-Sep-21	22-Sep-21	66	14	FH BC	Potential Impact to FT: Alberta/BC Border
Moyie – Compressor Station Maintenance	4-Oct-21	8-Oct-21	66	14	FH BC	Potential impact to FT: Alberta/BC Border
NPS 36 BC Mainline – Pipeline Maintenance	12-Oct-21	18-Oct-21	71	9	FH BC	Potential impact to FT: Alberta/BC Border

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Publication:

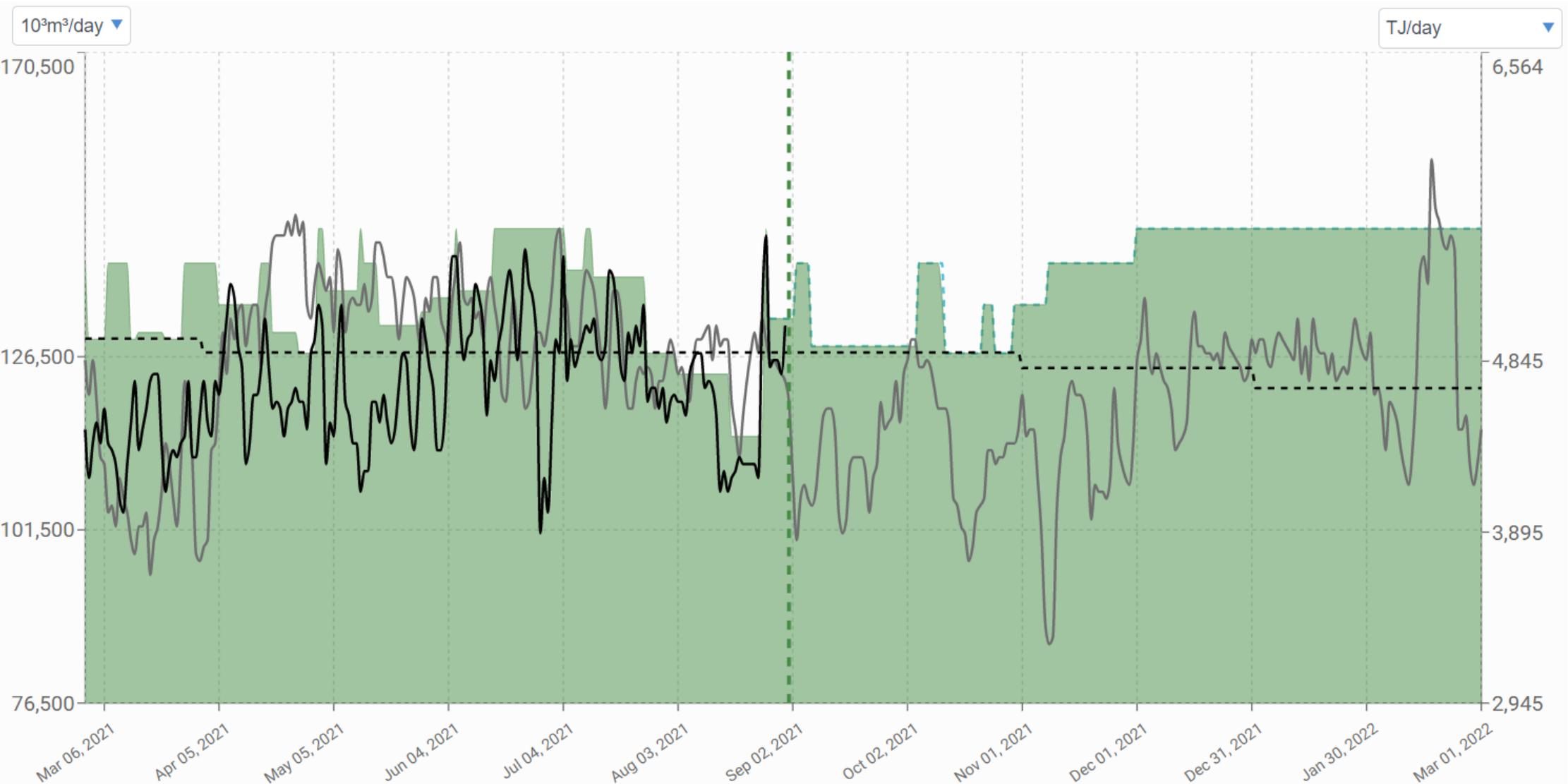
Sep 01, 2021

Compared to:

Aug 06, 2021

East Gate

■ Capability - Actual Flow - Historical Flow - - Contracts - - Compared to



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East Gate Delivery Area (EGAT)

Foothills Zone 9 (FHSK)

No
impact to FT

Potential
impact to FT

Partial
impact to FT

Outage Description	Start	End	Capability (10 ⁶ m ³ /day)	Impact (10 ⁶ m ³ /d)	System	Service Allowable Location/Area
NPS 42 Foothills Zone 9 – Pipeline Maintenance	16-Sep-21	22-Sep-21	130	10	NGTL	No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28
NPS 42 Foothills Zone 9 – Pipeline Maintenance	16-Sep-21	22-Sep-21	25		FH SK	Potential impact to FT: McNeill Border
Monchy 1 – Compressor Station Maintenance	4-Oct-21	Nov-26-21	69		FH SK	Potential impact to FT: McNeill Border
Princess – Compressor Station Maintenance	11-Oct-21	24-Oct-21	135	5	NGTL	No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28
Paul Lake – Compressor Station Maintenance	25-Oct-21	29-Oct-21	127	13	NGTL	No impact to FT-D anticipated: Empress/McNeill Borders Segments 6, 10 - 20, partial 21, 23, 24, partial 28

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Publication:

Sep 01, 2021

Compared to:

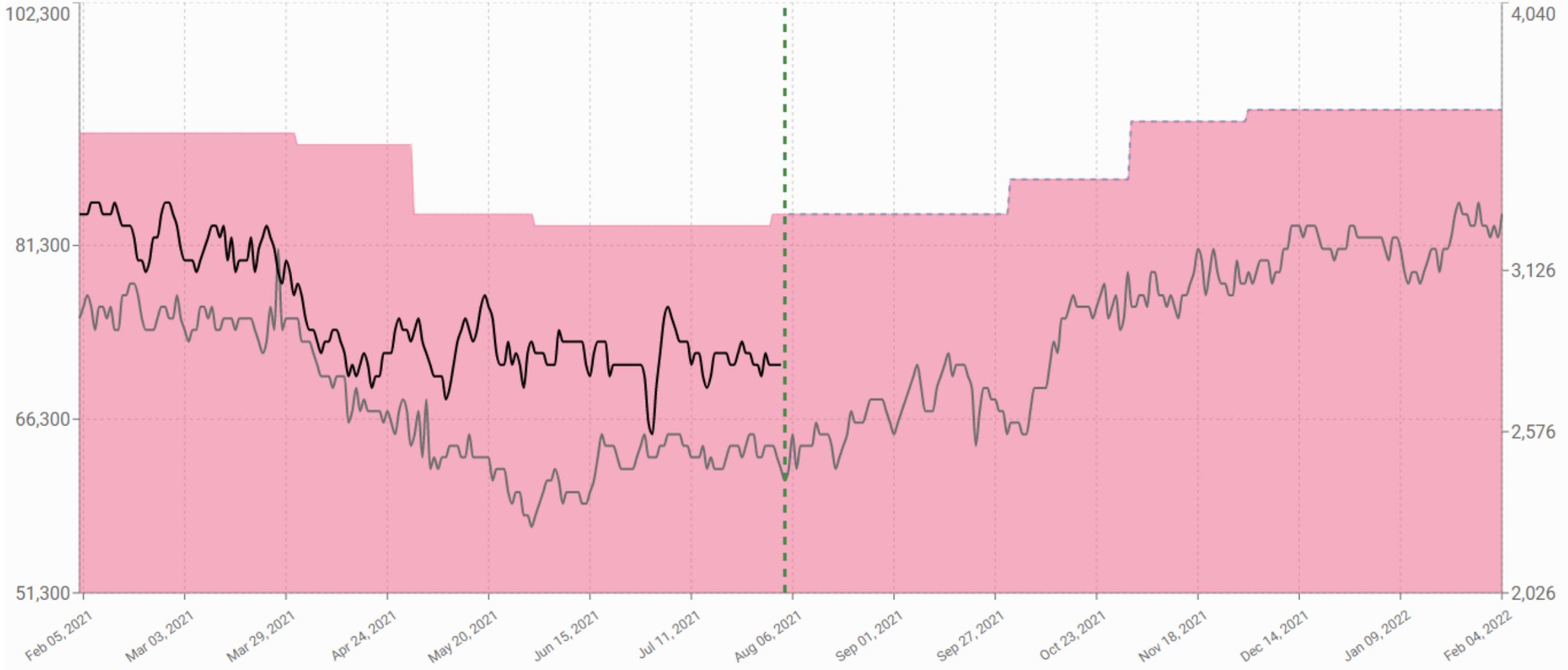
Aug 06, 2021

Oil Sands Delivery Area

■ Capability — Actual Flow — Historical Flow - - Compared to

10⁹m³/day

TJ/day



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Northeast Delivery Area (NEDA) Oil Sands Delivery Area (OSDA)

No
impact to FT

Potential
impact to FT

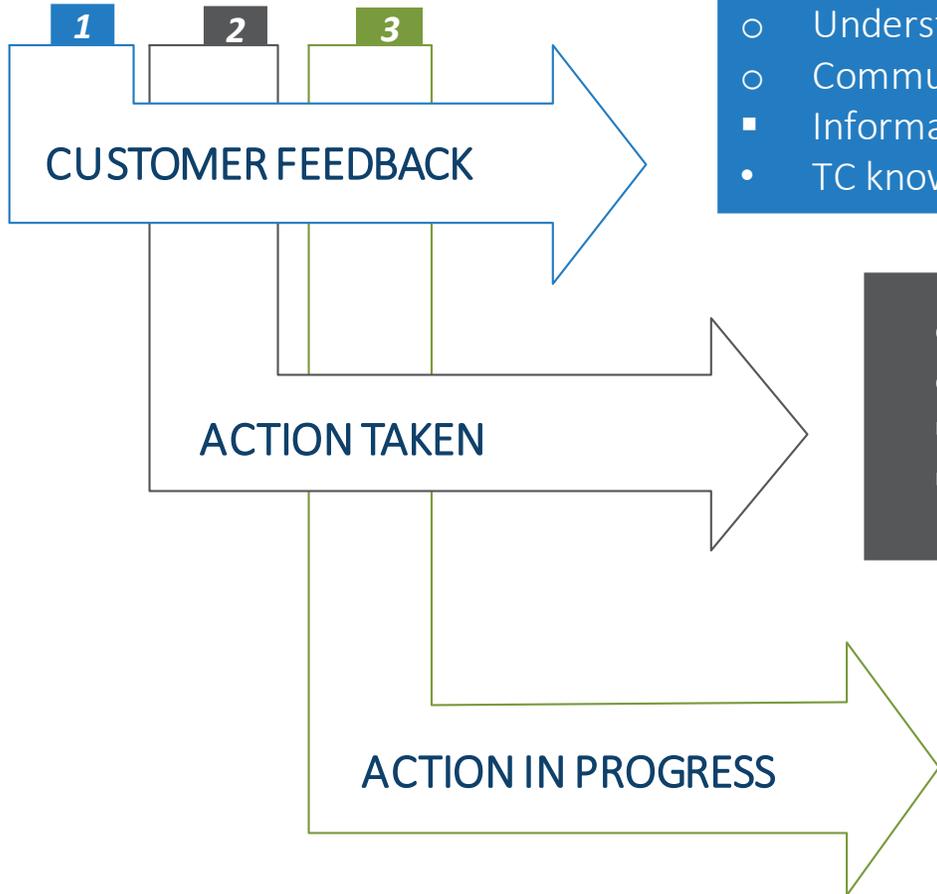
Partial
impact to FT

There are currently no outages planned that are specific to OSDA or NEDA



Customer Feedback

Customer Operations Meeting | Listen Act Feedback



- Understand outage decision process
- Communication and timing of outages
 - Information required to manage Customer's business – i.e. reporting, process
- TC knowledge transfer with new employees - plug the knowledge drain

- Operations Meetings including 101's based on feedback
- Marketing Representative Engagement
 - August 20th – posted QRG for Storage Transfers on Customer Express
 - August 30th – posted the enhancement to NGTL Transfers to Storage report

- Communications Protocol review.
 - Present a Customer Operations Action Team (COAT) Progress Report – October Customer Operations Meeting
- Continue to execute on Customer Experience Enhancements in the three key focus areas from our 2020 Customer Survey

We look forward to continuing to hear your feedback and enhancing your customer experience



Operational Balancing Agreements (OBAs) 101

What is an OBA?

- OBA stands for Operational Balancing Agreement (may also be referred to as Z accounts)
- Manages interconnect imbalances at a Border or Storage location:
 - If Physical Flow \neq Scheduled Quantity, customers are 'kept whole'
 - The difference is accounted for via an operational imbalance with the interconnect (OBA Account)
- Different than a Receipt or Delivery Meter Station
 - If Physical Flow \neq Scheduled Quantity, only the physical volume is allocated to customers (Supply Demand Account)



OR



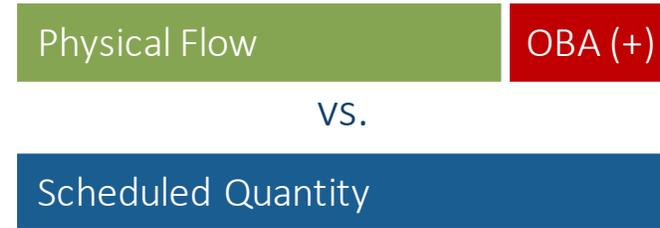
How does an OBA work?

1) Physical Flow < Scheduled Quantity

- NGTL holding linepack for Interconnect
- OBA Account = Positive



For Deliveries (opposite for receipts):

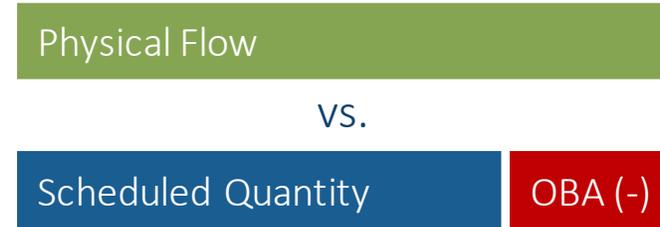


2) Physical Flow > Scheduled Quantity

- Interconnect holding linepack for NGTL
- OBA Account = Negative



For Deliveries (opposite for receipts):



Gas Day Summary Report:

Pipeline System:	NGTL	
Gas Day:	2021-Aug-30	
VOLUME SUMMARY	Prorated NOM	Extrapolated VOL
EMPRESS BORDER	3,218	3,108
MCNEILL BORDER	905	901
ALBERTA-B.C. BDR	2,243	2,326
Total OBA Account (TJ)		-436.5

How are OBAs used?



Reviewed daily and balanced with interconnects



Leverage when operational flexibility required



Preposition and management of linepack

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