

TRANS MOUNTAIN PIPELINE ULC

Service Standards

Regarding the Transportation of Petroleum

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Introduction

These Service Standards provide general information regarding Trans Mountain's calendar year 2006 system operation and service levels that are applicable for deliveries through the Company's mainline system and the Corporation pipeline in Washington State. System operations and service levels may vary as throughput and commodity mixes vary. Actual system operations and service levels will however fully conform to the Company's obligations as a common carrier under the National Energy Board act, and where required, the Company's subsidiary obligations as filed with FERC.

Carrier is obligated to provide transportation service pursuant to the terms and conditions specified by the Tariff Rules and Regulations on file with the NEB, in the case of Company's subsidiary pipeline, the FERC tariff, and the 2006 - 2010 Incentive Tolling Settlement. Service Standards described are not intended to amend tariff Rules and Regulations or the Incentive Toll Settlement.

The Trans Mountain system operations and Service Standards described here are broken out into five sections:

1. Operations
2. Procedures
3. Communications and
4. Disputes between Shippers.

The operations section describes general movements associated with the referenced throughput forecast. For the commodities shipped on the pipeline system these service levels generally describe normal routing and batching, ratability, predicted transit times, tank utilization, batch sizes, line fill, quality and interface management issues.

The procedures section outlines scheduling events, supply management and other general delivery information.

The communications and reporting section provides a statement on Carrier's general principles regarding communication to Trans Mountain's customer base.

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1. Operations

a. Description of "System"

Trans Mountain operates as a common carrier pipeline system. The system consists of a pipeline transporting crude oil, semi-refined and refined products from receipt locations in Edmonton and Edson, Alberta and Kamloops, British Columbia to delivery locations in Washington State and Burnaby, British Columbia. Refined products are also delivered into Kamloops, British Columbia from refineries in Edmonton, Alberta. A 100% wholly owned subsidiary pipeline, Trans Mountain Pipeline (Puget Sound) LLC ("Puget Sound Pipeline"), transports crude oil from Sumas, British Columbia to the refineries at Cherry Point, Ferndale, and Anacortes in Washington State.

b. Normal Line Routings

Trans Mountain provides a batch transportation service whereby light, synthetic and heavy crude oil and refined and semi-refined products are transported, or batched, through the pipeline. These varying materials are sequenced in a specific order established to minimize quality impacts and interface handling. Since the Trans Mountain pipeline is a continuous 24-inch diameter pipe, with the exception of two 50 mile segments of 30-inch diameter pipe from Edson, Alberta to Hinton, Alberta and from Darfield, British Columbia to Kamloops, British Columbia, and a 100 mile segment of 36-inch diameter pipe from Hinton, Alberta to Rearguard, British Columbia, the batch configuration generally follows established limits. The fact that Trans Mountain's system is comprised of a single pipeline does not allow for the ability to segregate volumes by assigning commodities to distinct and separate pipelines. In the Trans Mountain system all commodities travel down the same pipeline.

At Edmonton, Alberta, volumes are received into tankage from feeder pipelines. Batches are accumulated for mainline injection and transportation to delivery destinations at Kamloops, Sumas, and Burnaby, British Columbia. This originating station has the capability of injecting neat batches from tankage or through direct injection from Edmonton area terminalling facilities. Capability also exists for commingling or blending up to four different commodities in a single batch through Carrier's custom blend header.

At Edson, Alberta, volumes are received into the mainline from truck off-loading facilities owned by others. These volumes are either injected into a passing batch or as operating conditions permit a distinct batch may be injected at line rate.

At Kamloops, British Columbia, refined products are delivered to Petro-Canada's distribution terminal and crude oil from Pembina West Pipeline is received into the system. Crude received at Kamloops is either injected into a passing batch or, pumped as a distinct batch during refined product deliveries. During times of reduced throughput the mainline can be diverted into tankage to provide a pumping window for a distinct BC crude batch. The diverted mainline batch is subsequently pumped back into the mainline following completion of the Kamloops pumping.

At Sumas, British Columbia, light sweet, synthetic, sour and heavy crude is transferred to the Puget Sound Pipeline for delivery to Washington State refineries. Prior to transfer to the Puget Sound Pipeline these volumes may be broken out in tankage at Sumas.

At Burnaby, British Columbia deliveries are made to either the Chevron refinery or the Petro-Canada products terminal. Volumes are also aggregated at the Burnaby tank farm for subsequent export deliveries via Westridge dock.

c. Batch Train Configuration

The Trans Mountain system is unique in that crude petroleum, refined and semi-refined products (Iso-octane and alkylate) and synthetic crude oil are all transported through the same pipeline in a process known as batching. Specific batching configurations have developed over time as the proportion of refined products and crude types being transported have changed. Originally, the Trans Mountain system was entirely a crude oil pipeline but has since evolved with the needs of its shippers and currently transports a diverse range of commodities.

Individual batches in the pipeline are carefully organized into a batch train with consideration for quality issues, interface handling and ratability. When possible compatible crude types are pumped adjacent to one another, with refined product batch trains pumped at regular intervals over the month. There are generally 5-6 product trains pumped per month. Limitations on product train sizes and batch configurations in general are intended to satisfy deliveries to all shippers while taking account of each downstream consignees' specific handling capabilities.

d. Commodity Allocation

Nominated volumes from shippers are received each month and scheduled through the system to the identified delivery locations. The ownership of batches within the system is allocated to shippers dependant on delivery destination and batch composition.

Refined product deliveries typically move entirely for the account of the downstream delivery consignee. Deliveries into Burnaby for both the refinery and dock movements move so as well.

Generally batches destined for Washington State refiners are blended to the refinery's specifications, using available commodities from aggregated nominations of all shippers nominating to that refiner. Delivery batches therefore may contain multiple commodities purchased from a multitude of shippers. In this regard a batch moving to a Washington State refinery may have more than one shipper of record, the percentage of ownership being dependant upon the individual shippers' nomination of a particular crude type relative to the entire volume of that crude type to the destination refinery.

At the close of the month when actual feeder pipeline splits are known, adjustments to delivery allocations may be necessary. This process of allocating ownership based on actual receipts and deliveries provides the carrier with the ability to balance shipper positions before finalizing their delivery allocations. The allocation of multiple shippers and commodities within each delivery batch also mitigates over / short positions created through the delivery of individual shipper batches.

e. Ratability Statement

Carrier's objective is to operate its system such that nominations are pumped and deliveries are made on a ratable basis. Due consideration is given to the unique requirements of the diverse delivery locations. In addition quality, handling issues and system throughput levels influence ratability.

f. Tankage Utilization

The efficient transportation of commodities within the system is reliant on effective management of system tankage. The following table of Retention Limits illustrates the maximum time allotted for each commodity (or batch) to reside in tankage at each location on the system. Retention targets along with throughput forecasts, commodity segregation requirements and batch size are important aspects for determining the appropriate tankage required at locations throughout the system. To insure each shipper and commodity has access to the segregation and accumulation services described within these Trans Mountain Service Standards access to system tankage will be regulated as per the table below.

Greater retention times may be provided to shippers as operating conditions permit, however, the Carrier will use the provisions of these Service Standards and the Rules and Regulations to enforce Retention Limits as defined below whenever system throughput is threatened or undue pressure is being placed on other shippers' movements due to a commodity residing in tankage beyond its retention limit.

Retention Limits

Maximum Retention Time (Days)

Location	Batch Accumulation	Breakout Tankage	Delivery Tankage
Edmonton	5	N/A	N/A
Edson	5	N/A	N/A
Kamloops	N/A	2	N/A
Sumas	N/A	2	N/A
Burnaby	9*	N/A	5

*** Batch Accumulation for Tanker Export Only**

g. Batch Sizes

i. Minimum Batch Size

Minimum batch sizes are generally restricted to 8,000 m3 for delivery to one consignee and destination. In general, minimum batch sizes are necessary due to the level of interface generation while transiting through the mainline. Injections of individual commodities of less than the minimum batch size are permitted if the commodity is part of a larger batch train as is the case with refined product trains or heavy crude buffers.

ii. Maximum Batch Size

Maximum batch sizes are dictated by ratability concerns for all commodities moving through the system and also influenced by reasonable power requirements. In addition tankage availability and other operational considerations will limit batch sizes.

iii. Maximum Batch Train

Maximum batch trains, typically made up of refined products, are necessary in order to ensure ratable deliveries to other consignees and to allow for normal maintenance activities.

h. Predicted Transit Times

Transit times are dependent upon the level of nominations for the month. The following table indicates expected transit times for various throughput levels.

Indicative Transit Times												
(number of days between locations)												
Originating Locations												
	Edmonton						Kamloops					
Flow Rate (bbl / day * 1,000)	165	190	210	235	260	300	165	190	210	235	260	300
Destinations:												
Kamloops	9.3	8.0	7.3	6.5	5.9	5.1	N/A	N/A	N/A	N/A	N/A	N/A
Sumas	12.0	10.4	9.4	8.4	7.6	6.6	2.7	2.4	2.2	1.9	1.7	1.5
Anacortes / Ferndale	12.7	11.0	10.0	8.9	8.1	7.0	3.4	3.0	2.7	2.4	2.2	1.9
Burnaby	12.7	11.0	10.0	8.9	8.1	7.0	3.4	3.0	2.7	2.4	2.2	1.9

i. Line Fill

Line Fill is a term used to describe the specific volume in the pipeline system for a particular Shipper at a particular point in time. It is typically measured at month end for inventory control purposes and shipper balances. Line fill is comprised of the Shipper's volume held in the pipeline, station lines, tank bottoms and can include working stock.

j. Commodity Approval Process

Carrier requires all new commodities requesting system access to undergo an approval process. The New Commodity Approval process will provide orderly system preparation for handling the new commodity including, analysis of required facilities, system impact, special handling requirements and quality implications. Attached to this Service Standards Document is the procedure for requesting a new commodity including the New Commodity Approval process, its associated information requests and forms.

List of Approved Commodities

Commodity Name	Commodity Identifier	Commodity Name	Commodity Identifier
CONDENSATES		HEAVY CRUDES	
Bonnie Glen Condensate	BGC	Suncor Synthetic P	OSP
Cardline Condensate	CCA	Suncor Synthetic S	OSS
Peace River Condensate	PCON		
Ft. Saskatchewan	FSC	SUPER HEAVY CRUDES	
Pembina Condensate	CPM	Albian Heavy Synthetic	AHS
		Albian Residual Blend	ARB
		Cold Lake Blend	CL
		Wabasca Crude	WBH
LIGHT SWEET CRUDES		HIGH TAN SUPER HEAVY CRUDES	
BC Light Crude	BCL	Albian Vacuum Gas Oil	AVB
Bonnie Glen Crude	BOG	Access Western Blend	AWB
Peace River Crude	PCR	Long Lake Heavy Blend	PSH
Pembina Crude	PEM	Peace River Bitumen	PH
Pembina North	PNC	Seal Heavy	SH
Rainbow Crude	RBW	Suncor Synthetic H	OSH
		Summont Heavy Blend	SHB
LIGHT SOUR CRUDES		REFINED PRODUCTS	
Bonnie Glen Sour	BGS	Alkylate	ALK
Boundary Lake Crude	BLK	Diesel - Heavy	DHT
Drayton Valley Light Sour	LSO	Diesel - Low Pour	DLT
Koch Alberta	KOC	Diesel - Regular Sulphur	DRS
Peace River Sour	PCSR	Diesel - Ultra-Low Seasonal	DSL
		Gasoline - Premium	G91
LIGHT SYNTHETIC CRUDES		Gasoline - Regular	G87
Horizon Synthetic	CNS	Gasoline - RBOB	G85
Premium Albian Synthetic	PAS	Iso-Octane	ISO
Premium Synthetic	PSC	Jet A Turbine Fuel	JET A
Shell Synthetic Light	SSX		
Suncor Synthetic A	OSA		
Suncor Synthetic C	OSC		
Syncrude	SYN		

k. Commodity Segregation

Segregation is achieved through special handling of commodities through tank allocation and mainline batch management. Carrier will provide reasonable efforts to ensure that only compatible commodities use the same tank. Carrier will notify shipper if tank allocations deviate from the standard as outlined in the table below. Changes will not be made to the table below without consultation with shippers. Significant changes will require support of the majority of shippers.

		MAJOR COMPONENT							
MINOR COMPONENT		CONDENSATES	LIGHT SWEET	LIGHT SOUR	LIGHT SYNTHETIC	HEAVY	SUPER HEAVY	HIGH TAN SUPER HEAVY	REFINED PRODUCTS
	CONDENSATES	C	B	B	S	B	B	B	S
	LIGHT SWEET	B	C	B	B	B	B	B	S
	LIGHT SOUR	B	B	C	S	B	B	B	S
	LIGHT SYNTHETIC	B	B	B	C	B	B	B	S
	HEAVY	S	B	B	S	B	B	B	S
	SUPER HEAVY	S	B	B	S	B	B	B	S
	HIGH TAN SUPER HEAVY	S	S	S	S	S	S	B	S
	REFINED PRODUCTS	S	S	S	S	S	S	S	S

Note: S = Segregated, C = Commingled, B = Bottom

I. Quality Control and Interface Management

To manage the interface and quality between the various batches traversing the system, Carrier employs a variety of handling techniques. Batches of adjacent similar crude are typically cut at a mid-point interface, though alternate handling techniques are possible with concurrence between the affected shippers. Interfaces with heavy crude, or those material types which may degrade the preceding or proceeding batch, will typically be cut on density and the prevailing increase in interface volume will be the responsibility of the shipper receiving such volume. Arrangements for interface handling are determined and agreed upon between affected parties and Carrier prior to the batch entering the pipeline.

m. Quality Testing and Sampling

Petroleum sampling is undertaken in accordance with API Standards and accepted practices in order to confirm the quantity and quality of petroleum received and delivered. Representative samples are collected over the entire batch through automatic line sampling devices. Testing of these samples is then undertaken to determine the levels of Sediment (S) and Water (W) contained within the batch. This information is used to calculate the net cubic metre volume of merchantable petroleum and to ensure that the tariff requirements for no more than 0.5% S&W are met.

In addition to regular testing for S&W, Carrier also performs routine oil analysis, consisting of up to 11 different physical and chemical tests, for each crude type at least once per year. More frequent testing is undertaken on an as-needed basis.

The following table illustrates the parameters and frequency of Carrier's testing program as it relates to individual commodities:

	BS&W	Density	Total Sulphur	H2S in Liquid	Viscosity	Pour Point	TAN	Olefins	C30+
CONDENSATES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually		R - Annually	R - Annually
LIGHT SWEET CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually		R - Annually	R - Annually
LIGHT SOUR CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually		R - Annually	R - Annually
LIGHT SYNTHETIC CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually		R - Annually	R - Annually
HEAVY CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually
SUPER HEAVY CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually
HIGH TAN SUPER HEAVY CRUDES	R, D	R, D	R - Monthly	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually	R - Annually
REFINED PRODUCTS		R, D			R - Annually	R - Annually		R - Annually	R - Annually
Note: R = Receipt, D = Delivery									

2. Procedures

Trans Mountain scheduling procedures commence for a given calendar month with Notices of Shipment provided by the shippers on dates as set out on the Carrier's website. If Apportionment is called on the system or on a portion thereof, Carrier will verify the Nominated volumes submitted. If following Nomination verification, apportionment still exists then Nominations will be apportioned according to the rules and regulations in affect at the time.

Once nominations are submitted, the compiling of the next months schedules commences. The building of the next month's schedule will be complete within 5 business days following the close of Nominations. Revisions to pipeline schedules occur daily throughout the month when conditions or nominations are revised.

3. Communications and Reporting

a. Delivery Schedules

Carrier will provide monthly delivery schedules at the start of each month and provide regular updates at a minimum of once per week throughout the month. Carrier will also provide updates as required when significant changes occur.

b. Supply and Management of Stock

Carrier reports to shippers on a regular basis regarding the supply and management of stock within the Trans Mountain system. The following table is indicative of the reporting involved.

Supply Management Activities		
Process	Activity	Reporting
Nominations	Due on a specific date and time as specified in Carrier's tariff	Nomination due date issued to all shippers within last month of year preceding nomination calendar
Apportionment	All nomination information is compiled to determine if apportionment required. If required, announced the afternoon of the day after nominations are due (as outlined in the COLC forecast-reporting calendar). Revised N.O.S.'s due back 24 hours from time of announcement.	Carrier issues letter to all shippers, feeder pipelines and interested parties
Weekly Splits	A weekly volume report is produced in accordance with the COLC forecast reporting calendar to reconcile weekly splits from Feeder Pipelines	No reporting
Month-end Splits	Feeders notified of month-end total deliveries to Trans Mountain by the end of the 2nd working day of the new month for the previous month Feeders provide to Trans Mountain month-end splits by 3rd working day	No reporting
U.S delivery schedule allocated by shipper	Estimated and actual delivery data for Washington State deliveries by shipper	Sent to consignees and shippers by request every Tuesday
Refined product report	Indicates anticipated delivery times and volumes for refined product deliveries following consultation with shipper	Sent to affected shippers twice weekly
Monthly shippers balance	Issued on the 9th working day of each month	Carrier issues monthly shippers balance statement
Tariff invoicing	Issued on the 4th working day after the 15 th and the 4 th working day after the last working day of the month	Carrier issues tariff invoices

c. VISTA Communication Enhancements

Carrier's new scheduling software will provide online access to current and historical nominations; real-time injection and delivery schedules; upstream / downstream nomination verification; consignee delivery reports and; electronic message board.

d. Planned or Unforeseen Events

Planned or unforeseen events which will materially affect or disrupt schedules to the extent that deliveries will be impacted will be discussed with the relevant parties within two business days or sooner if deliveries are planned to occur. If disruptions are anticipated to be of sufficient magnitude to have the potential of affecting the Shipping community at large then an "All Shipper and Interested Parties" bulletin will be issued within two business days.

Significant changes to Trans Mountain's operations can have a material impact on oil markets and, in turn, on producers, marketers, shippers and refiners. As such, Carrier will strive to provide impacted parties with timely access to information.

Unscheduled or unplanned events that impact, or have potential to impact Trans Mountain operations will be communicated to producers, marketers, shippers and refiners and CAPP, as quickly as possible. Ideally, changes to planned or scheduled events will be communicated with prior notice. Generally and where feasible, the objective will be to inform impacted parties of events or circumstances so that there are "no surprises" regarding system operations.

It is also recognized that Carrier has a reciprocal dependency on its customers to provide accurate and timely information in order to fulfill the above

4. Disputes between Shippers

A common carrier batched pipeline system with shippers and commodities sharing the same facilities it is inevitable that shippers and commodities will be impacted by the operations of the pipeline and/or other shippers. Carrier will endeavor to maintain segregation of commodities and services such that disputes between shippers are held at a minimum. However conflicting priorities may ultimately result in a dispute between shippers.

In these circumstances Carrier will endeavor to resolve the dispute quickly while taking into account the operational impact to other shippers and to the system operation as a whole. The carrier will make operating decisions based on the greater good of all system users and the system operation while minimizing further impact from the condition that gave rise to the dispute. Since shipper confidentiality is a significant aspect influencing the resolution of most disputes the Carrier will endeavor to provide all required information to resolve the dispute provided however that it will not be required to violate shipper confidentiality.

To minimize the escalation of disputes the Carrier will first look to the offending shipper to resolve any operational impact and to have that shipper correct the situation so as not to impact any other shipper(s).

In a case where the offending shipper cannot correct the situation in sufficient time and impact to another shipper(s) results the carrier will endeavor to first minimize the impact to the third party shipper(s) and then working with the shippers involved attempt to resolve the situation through direct negotiation.

If an attempt to negotiate a resolution fails the Carrier will use any and all provisions at its disposal whether at law or provided to it within the Rules and Regulations to rectify the situation and return the system to a normal operating condition as quickly as possible.