



## Commodity Testing Summary

Last Updated: April 1, 2023

## Table 6

## Table of Contents

Commodity Testing Summary .....	1
Commodity Testing Summary (Continued) .....	2
Table 6A – General Testing .....	3
Table 6B – Sweet Streams Testing .....	4
Table 6C – Sour Streams Testing.....	4
Table 6D – Condensate Sampling Procedures and Testing – Edmonton Terminal .....	5
Table 6E – Line 1 Synthetic Buffer Testing .....	5

### Commodity Testing Summary

Transport Commodity	Quality Category	Test
Refined Products (Gasoline and Distillate)	Products	2
Condensate Blend (CRW)	Condensate	3,6,7
Suncor (OSN)		3, 6, 7
Hardisty Synthetic Crude (HSC)	Light Synthetic	1, 2, 3
Newgrade Synthetic Blend (NSA, NSX)		1, 2, 3
Premium Synthetic (PSY)		1, 2, 3, 8*
Synthetic Sweet Blend (SYN)		1, 2, 3, 8*
Suncor C/D/M (OSC, OSD, OSM)		1, 2, 3
Shell Synthetic Light (SSX)		1, 2, 3
Mixed Blend Sweet (MSW)	Sweet	1, 2, 3, 4
U.S. Sweet – Clearbrook (UHC)		1, 2, 3, 4
U.S. Sweet – Lewiston (UHL)		1, 2, 3, 4
U.S. Sweet – Mokena (UHM)		1, 2, 3, 4
Light Sour Blend (LSB)	Light Sour	1, 2, 3, 5
Medium Sour Blend (MSB)	Medium Sour	1, 2, 3, 5
U.S. Sour - Mokena (UOM)		1, 2, 3
Midale (M)		1, 2, 3, 5

**General Notes:**

Crude tests referenced in Table 6 are detailed in Tables 6A through 6E respectively.

\*Test only performed when commodity used as Line 1 buffer.

### Commodity Testing Summary (Continued)

Transport Commodity	Quality Category	Test
Albian Heavy Synthetic (AHS)	Heavy	1, 2, 3
Canadian Blended Heavy (CBH)		1, 2, 3
Canadian Heavy Sweet (CHS)		1, 2, 3
Cold Lake (CL)		1, 2, 3
Conventional Heavy (CHV)		1, 2, 3
Premium Conventional Heavy (PCH)		1, 2, 3
U.S. Heavy - Mokena (UVM)		1, 2, 3
Western Canadian Select (WCS)		1, 2, 3
Western Heavy Blend (WHB)		1,2,3
Albian Muskeg River Heavy (AMH)	Heavy High Tan Dilbit	1, 2, 3
Access Western Blend (AWB)		1, 2, 3
Borealis Heavy Blend (BHB)		1, 2, 3
Canadian Blended Dilbit (CBT)		1,2,3
Christina Lake Dilbit (CDB)		1,2,3
Canadian Heavy Dilbit (CHT)		1,2,3
Canadian Natural High-Tan (CNX)		1, 2, 3
Fort Hills Dilbit Blend (FRB)		1, 2, 3
IOL Kearl Heavy (KDB)		1, 2, 3
Long Lake Dilbit Blend (PDH)		1, 2, 3
Seal Heavy (SH)		1, 2, 3
Surmont Heavy Dilbit (SHD)		1, 2, 3
Western Canada Dilbit (WDB)		1, 2, 3
Canadian Heavy Synbit (CHY)	Heavy High Tan Synbit	1, 2, 3
Surmont Mix A (SMA)		1, 2, 3
Synbit Blend (SYB)		1, 2, 3
Albian Vacuum Blend (AVB)	Heavy Low Resid	1, 2, 3
Suncor H (OSH)		1, 2, 3
Suncor Cracked C (OCC)	Cracked	1, 2, 3
Pine Bend Special (PBS)		1, 2, 3
Sarnia Special (SSS)	Other	1, 2, 3

**General Notes:**

Crude tests referenced in Table 6 are detailed in Tables 6A through 6E respectively.

\* Test only performed when commodity used as Line 1 buffer.

**Table 6A – General Testing**

Test	Frequency	Crude Types	Tests	Reporting
<b>1</b>	On Receipt	All	S&W, density	Reported by receipt ticket to feeder pipeline.
	Weekly: Random	All heavy crudes	Viscosity	Reported to feeder on exception basis only on violation of tariff quality specifications.
		Select light and medium crudes	Viscosity – tested during winter months to determine tariff category	Reported to feeder on exception basis only if viscosity exceeds classification category
<b>2</b>	On Delivery	All	S&W, density	Reported by delivery ticket to delivery facility.
	On Receipt and Delivery	Refined products and NGL	Testing and reporting are in accordance with Enbridge’s Book 5 Operations Manual.	
<b>3</b>	Annual Crude Characteristics	All (not spot commodities)	Density, Vapor Pressure, sulphur, viscosity (10°C, 20°C, 30°C, 40°C, 45°C), pour point	Annual crude characteristics report.
<b>3A</b>	Annually	Random	Organic Chloride	Reported to feeder on exception basis only on violation of quality specifications.
	Annually	Random	Olefinic content	

**Table 6B - Sweet Streams Testing**

Test	Location	Frequency	Test	Comments	Reporting
4	Receipt	Weekly: Random	Density, sulphur	Selected batch receipt composite for MSW components	<ul style="list-style-type: none"> <li>Reported to feeder on exception basis only on violation of stream quality specifications per MSW Receipt Quality Standard procedures</li> </ul>
		1 Annually	Phosphorus	Random Composite per MSW component stream	
		Selected receipt batches	Density, sulphur	U.S. Sweet (UHC, UHL)	Reported to feeder on exception basis only on violation of stream quality specifications per MSW Receipt Sulphur Standard procedures
		All receipt batches	Density, sulphur	U.S. Sweet (UHM)	Reported to feeder on exception basis only on violation of stream quality specifications per MSW Receipt Sulphur Standard procedures

**Table 6C - Sour Streams Testing**

Test	Location	Frequency	Test	Comments	Reporting
5	Receipt	Weekly: Random	Density, sulphur	Selected batch receipt composite for feeder components to MSB, M, LSB	Enbridge issues monthly Crude Equalization Program report by the 20 <sup>th</sup> day of the following month

**Table 6D - Condensate Sampling Procedures and Testing – Edmonton Terminal**

		Composite Sample		Monthly Testing		Annual Testing <sup>1</sup>		
Test	Location	Collection Frequency	Tests	Sample Type	Test	Sample Type	Test	Reporting
6	Receipts	Each batch - continuous & batched feeders	S&W, Density	1 spot/month	Vapor pressure	Random Composite per CRW component stream	Viscosity, Olefins, Organic Chlorides, Aromatics, Mercaptans, H <sub>2</sub> S, Benzene, Mercury, Oxygenates, Total Suspended Solids, Phosphorous (Volatile)	Enbridge issues monthly Condensate Equalization Program report by the 20 <sup>th</sup> day of the following month
		Weekly: Random - per feeder:	Light ends (Butane), Sulfur					
7	Deliveries at Edmonton	Each batch - continuous & batched feeders	S&W, Density	1 spot/month	Vapor pressure			S&W and density reported by delivery ticket to delivery facility
		Weekly: Random - per delivery facility	Light ends (Butane), Sulfur	1 spot/month				S&W and density reported by delivery ticket to delivery facility

Note 1: Additional random testing will occur at Enbridge's discretion based on results.

**Table 6E – Line 1 Synthetic Buffer Testing**

Test	Location	Frequency	Test	Reporting
8	Edmonton	Batch pump out	Density, copper strip and particulates	Reported to feeder on exception basis only on violation of Line 1 Quality Guidelines in accordance with Enbridge's Book 5 Operations Manual