

Condensate Blend (CRW) Pool Quality Specifications

Quality Specifications for Component Streams to the Condensate Blend (CRW) Pool						
Quality	Units	Min	Max	Referee Test Method	Test Frequency	Enbridge Response to Crude Not Meeting Quality
Existing Specifications						
Density (15C)	kg/m ³	600	775	ASTMD4052	Frequency: AR ²	Delayed shut-in ⁵
Viscosity	cSt		2	ASTMD445	Frequency: R ⁶	Delayed shut-in ⁵
Olefins, total ¹	wt%		<1	H NMR	Frequency: R ⁶	Immediate shut-in ⁴
Vapour Pressure (DVPE)	kPa		103	ASTMD5191	Frequency: MR ³	Monitoring Process ⁸
BS&W	vol%		0.5	ASTMD4007	Frequency: AR ²	Immediate shut-in ⁴
Organic Chlorides ¹	wppm		<1	ASTMD4929	Frequency: R ⁶	Immediate shut-in ⁴
Sulphur, total	wt%		0.5	ASTMD5453	Frequency: AR ²	Reclassification Process ⁵
Aromatics, total (BTEX)	vol%	2		PONAOX(U)ASTM D6729	Frequency: R ⁶	Reclassification Process ^{5,9}
Mercaptans, volatile (cumulative C1, C2, C3)	ppmw S		175	ASTMD5623	Frequency: R ⁶	Reclassification Process ⁵
H ₂ S (in liquid phase)	wppm		20	ASTMD5623	Frequency: R ⁶	Reclassification Process ⁵
Benzene ⁷	vol%		1.6	PONAOX(U)ASTM D6729	Frequency: R ⁶	Delayed shut-in ⁵
Mercury ¹	wppb		10	UOP 938 (CVAA)	Frequency: R ⁶	Delayed shut-in ⁵
Oxygenates	wppm		100	PONAOX(U) ASTM D6729	Frequency: R ⁶	Delayed shut-in ⁵
Filterable Solids	mg/L		200	ASTMD4807 with "Procedure C"	Frequency: R ⁶	Reclassification Process ⁵
Phosphorus, volatile	ppm		Per CAPP guidelines	ICP AES D86 (250 cut)	Frequency: R ⁶	CAPP Guidance. Refer to AEB Directive 058. Violating test results communicated to the AEB

Notes

- For these properties, blending should not occur.
- AR: All Receipts of CRW component streams tested using weekly composite.
- MR: Monthly Random testing of CRW component streams.
- Immediate shut-in upon identifying violation. Request third party Certificate of Analysis prior to subsequent receipt.
- Upon violation, notification to applicable party, increase monitoring. Consequence based on outcome of increased monitoring.
- R: Random composite testing per CRW component stream. 2015 – Twice per year; 2016 onwards – Annually.
- Benzene level of the CRW pool to be monitored and if a test result of 1.25 vol% is received the Enbridge CRW Committee will reconvene to discuss appropriateness of benzene spec on CRW component streams.
- Monitoring and reporting only.
- For BTEX values < 2.0 vol%, a component stream condensate can still be accepted through completion of a Wiehe compatibility analysis.