

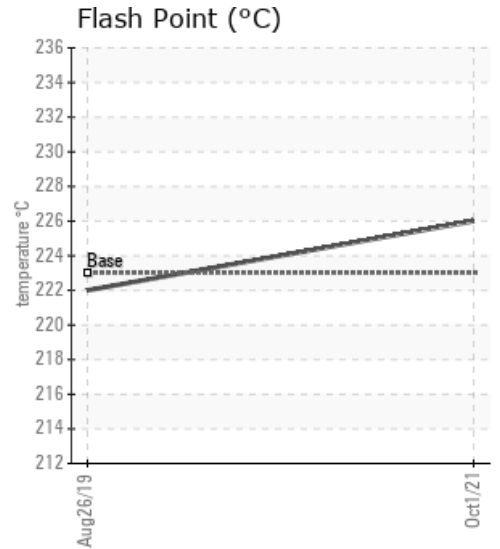
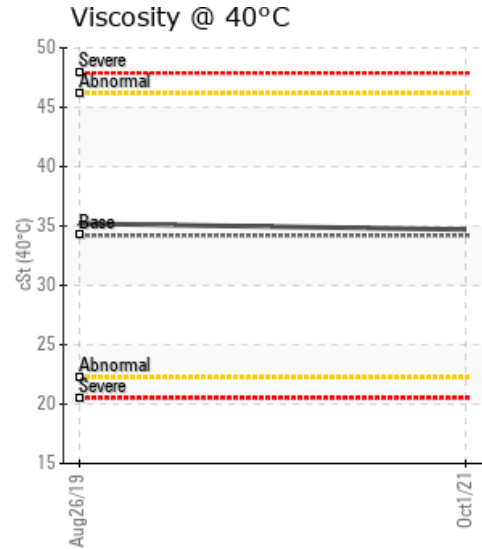
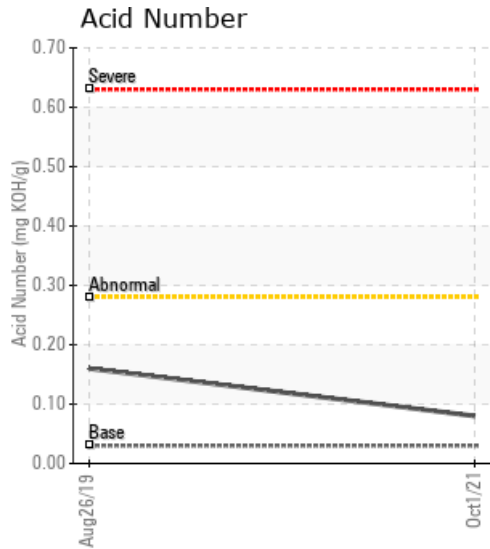
## CLEAVER BROOKS (BOILER ROOM)

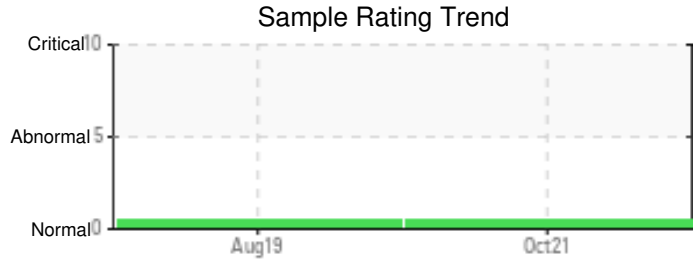
Customer: PTRHTF30020	System Information	Sample Information
IKO INDUSTRIES HAWKESBURY 1451 SPENCE ROAD HI-PARTS-HAWK YARD HAWKESBURY, ON K6A 3T4 Canada Attn: Adam Aubry Tel: E-Mail: adam.aubry@iko.com	System Volume: 10000 ltr Bulk Operating Temp: 491F / 255C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: CLEAVER BROOKS	Lab No: 02451164 Analyst: Jean Lacharite Sample Date: 10/01/21 Received Date: 10/20/21 Completed: 10/26/21 Jean Lacharite jean.lacharige@hollyfrontier.com

Recommendation: Elemental Analysis is OK, FE = 3 ppm, max = 99. The Water is ok, 27 ppm, max = 350 ppm. The Acid Number is ok at 0.08 and maximum is 0.29, for fresh oil we have <0.1. The Viscosity @ 40C is ok. A result to 34.7 cSt and a fresh oil is 35.8 cSt. decrease by 3.0 %. The COC flash point is ok. A result to 226 C and a fresh oil is 225 C. The insolubles or solids (%W) is good. A result to 0.076 and the maximum is 0.29. The GCD % 10% is ok and GCD 90% is a severity yellow, we will check for the next analysis, to do in one year. The graphic GCD is a good shape and we have not a large volume of low boiler and high boiler. Continue operation.

Comments:

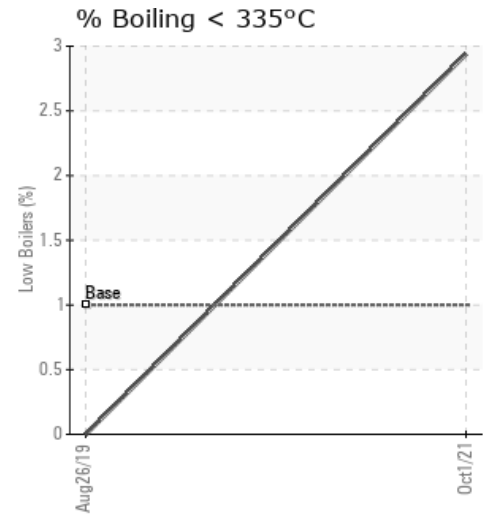
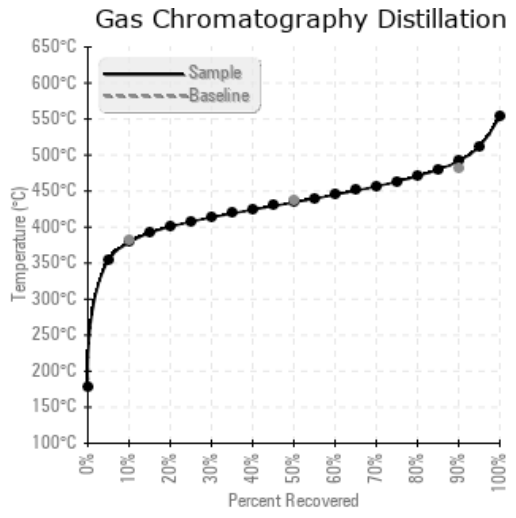
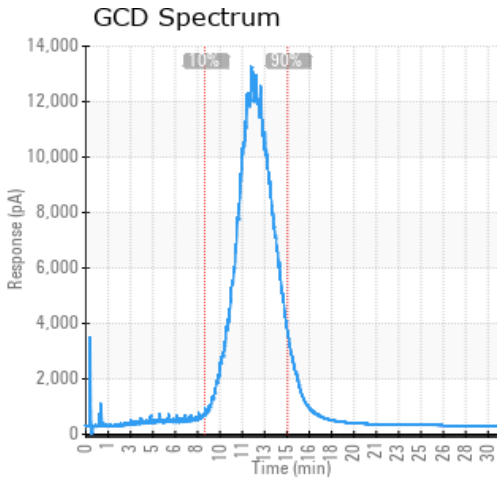
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/01/21	10/20/21	11.0y		439 / 226	26.6	34.7	0.08	0.076	713 / 379	814 / 434	917 / 492	2.94
08/26/19	09/09/19	10.0y		432 / 222	20.3	35.2	0.160	0.099	716 / 380	799 / 426	892 / 478	0.00
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
10/01/21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
08/26/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



### Historical Comments

08/26/19	The sample is OK for continuous use, resample at the next sample date

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