

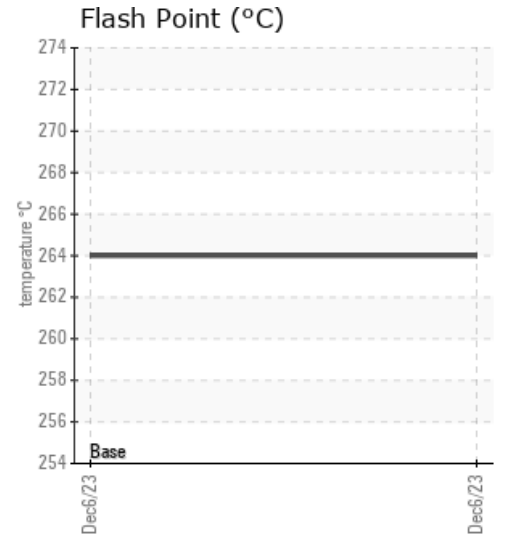
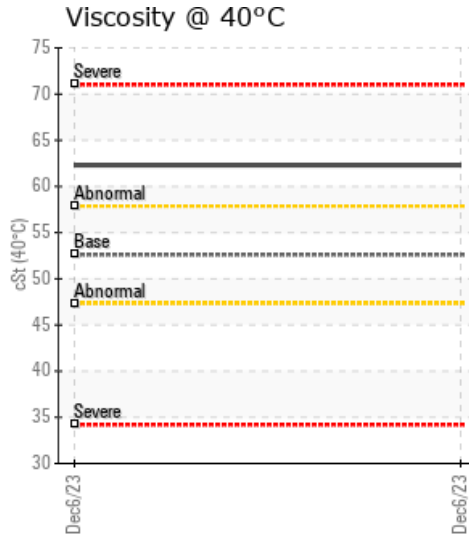
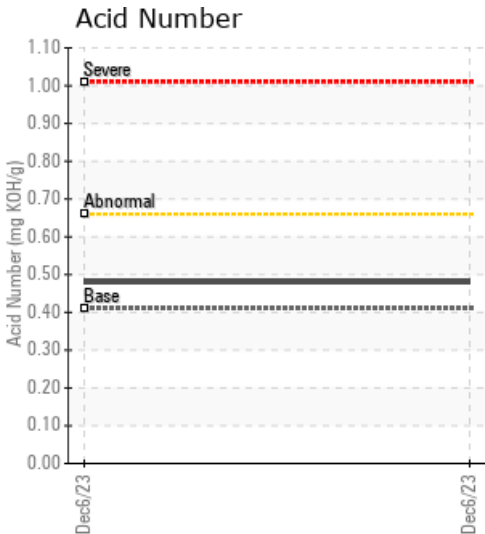
HINTON WOOD PRODUCTS ENERGY SYSTEM

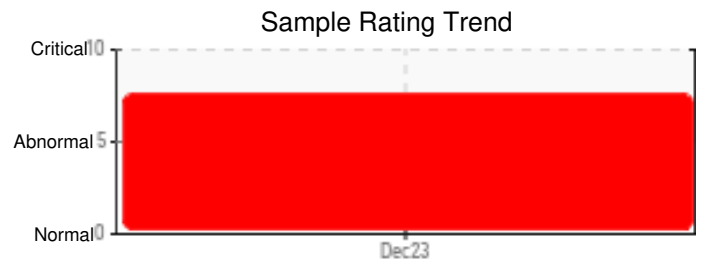
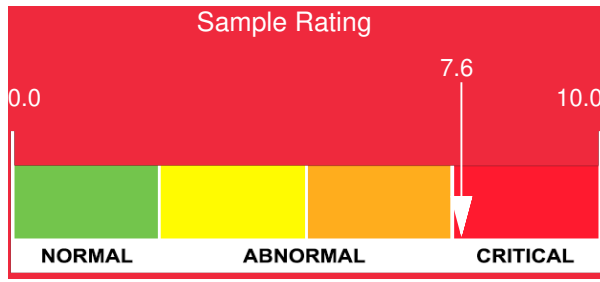
Customer: PTRHTF20045	System Information	Sample Information
WEST FRASER, HINTON WOOD PROD. 99 WEST RIVER ROAD HINTON, AB T7V 1Y7 CA Attn: Jeannot Desaulniers Tel: (780)865-8973 E-Mail:	System Volume: 1435 ltr Bulk Operating Temp: 510F / 266C Heating Source: Blanket: Fluid: HEAT TRANSFER FLUID ISO 68 Make: WELLONS	Lab No: 02604269 Analyst: Peter Harteveld Sample Date: 12/06/23 Received Date: 12/19/23 Completed: 01/02/24 Peter Harteveld peter.harteveld@HFSinclair.com

Recommendation: The brand name of the fluid is unknown and therefore shown as a generic ISO VG 68 fluid. It is assumed that the fluid in service is Petro-Therm. The fluid is in a reasonable condition and suitable for further use. The viscosity is high and not representative of Petro-Therm. This in combination with the contaminants Calcium, Zinc and potentially Phosphorus indicates contamination with an unknown higher viscosity oil. It has also resulted in elevation of the distillation curve and a slightly elevated AN. The concern is that the contaminants Ca and Zinc will form hard deposits on hot internal parts of the system, thereby insulating the surfaces from the fluid which leads to lower system efficiency in a best case scenario and failure in a worst case scenario. If the volume is 1435 ltr as reported, it is advised to replace the fluid. If the volume is larger, sweetening of the fill with Petro-Therm is recommended. Please re-sample in 12 months. When sending in the next sample please list: Fluid brand name, service life and system volume (if 1435 ltr is not correct)

Comments: (GCD) 10% Distillation Point is severely high. (GCD) 50% Distillation Point is severely high. (GCD) 90% Distillation Point is severely high. Zinc ppm levels are severely high. Visc @ 40°C is abnormally high. Calcium ppm levels are abnormally high.

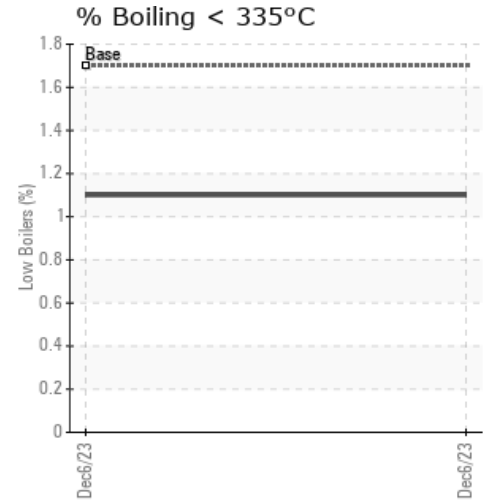
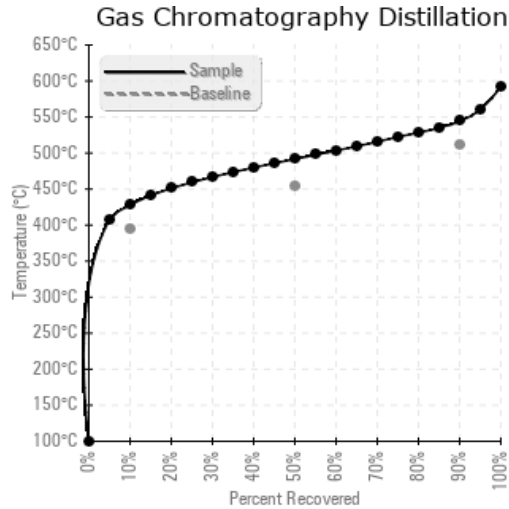
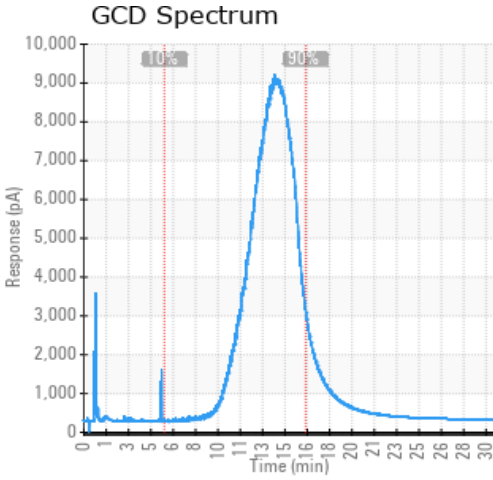
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/06/23	12/19/23	0.0h		507 / 264	88	62.3	0.48	0.142	802 / 428	917 / 492	1011 / 544	1.10
Baseline Data				437 / 225		52.6	0.41		741 / 394	849 / 454	952 / 511	1.7





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
12/06/23	9	2	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	36	0	329	425
Baseline Data			0	0						0			0	0					5				250	

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



Historical Comments

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