

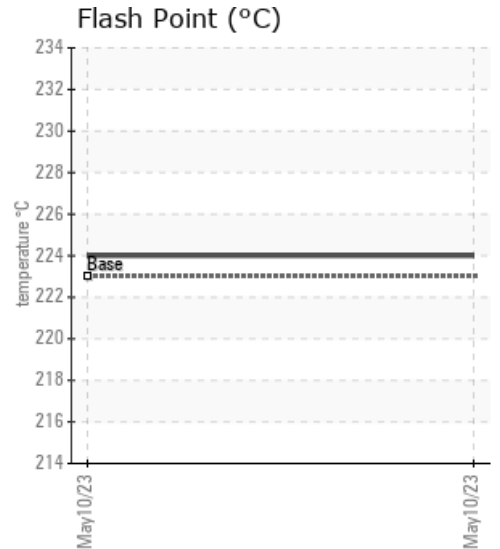
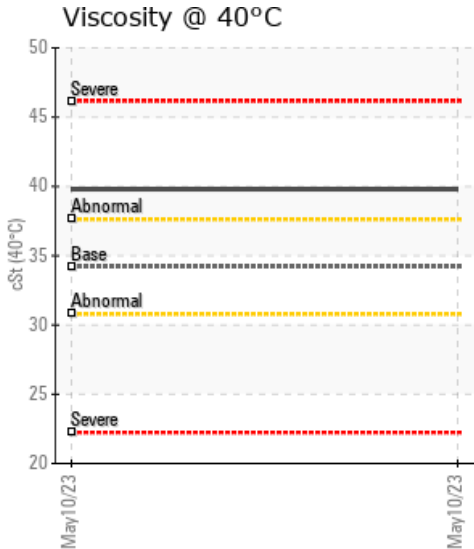
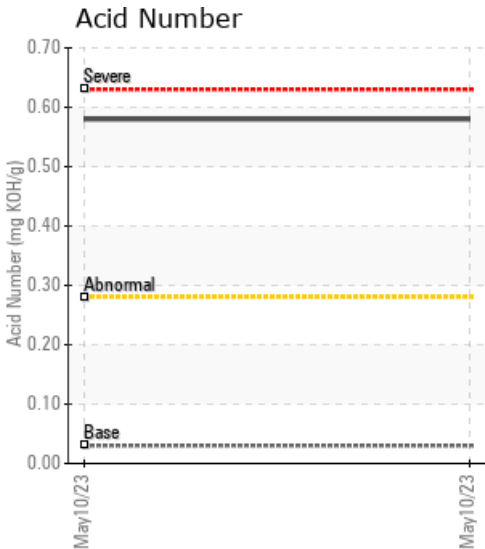
Portable System

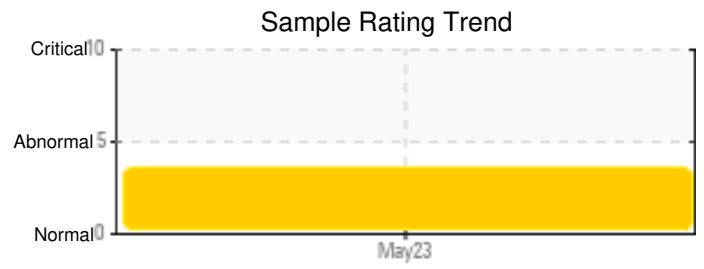
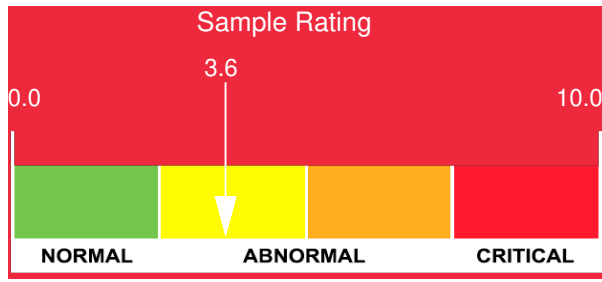
Customer: PTRHTF10266	System Information	Sample Information
Kartechner Brothers W12250 Reeds Corners Road Ripon, WI 54971 US Attn: Joab Homan Tel: (920)324-2874 E-Mail: joabh@kartechnerbrothers.com	System Volume: 300 gal Bulk Operating Temp: 325F / 163C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: Hy-Way Heater	Lab No: 02558214 Analyst: Yvette Trzcinski Sample Date: 05/10/23 Received Date: 05/17/23 Completed: 06/02/23 Yvette Trzcinski yvette.trzcinski@HFSinclair.com

Recommendation: Showing signs of severed oxidation of the fluid viscosity increased by 16% as well as the acid number. The solids is at 0.746 which means there is oxidation material and solids in the oil which can plate out in the system and cause issues with proper operation, the warning limit is > 0.5% The flash point is still at an acceptable level. Filtering of the oil can help with removal of the solids which can help provide longer time to operate. I would consider changing the fluid by the end of the year

Comments: Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is abnormally high.

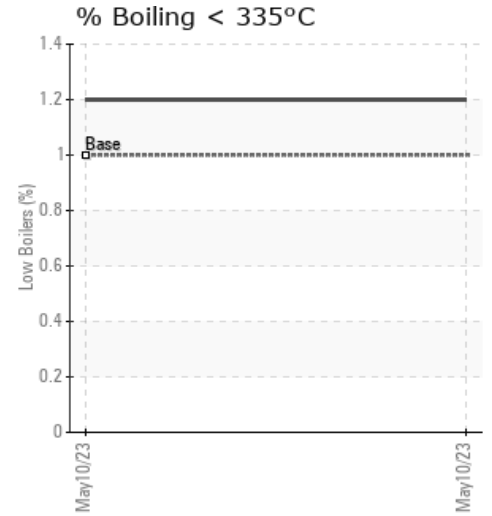
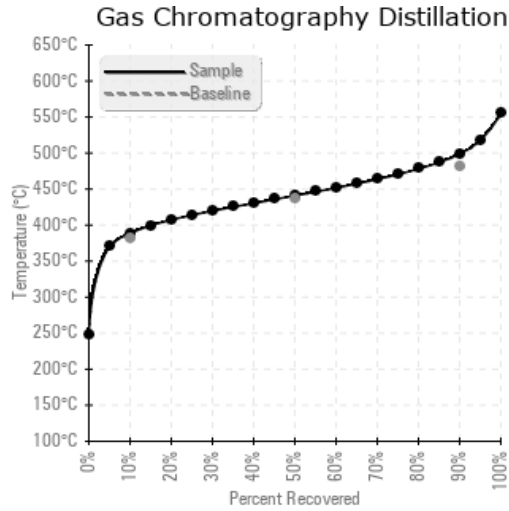
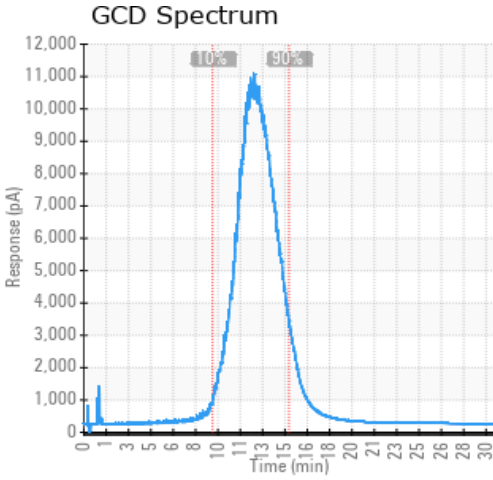
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/10/23	05/17/23	48.0m		435 / 224	62.4	39.8	0.58	0.746	731 / 389	826 / 441	930 / 499	1.20
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
05/10/23	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	1	2
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

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