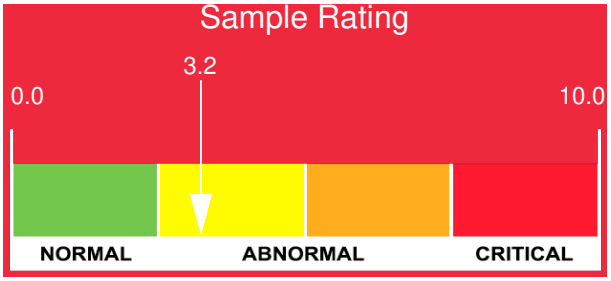
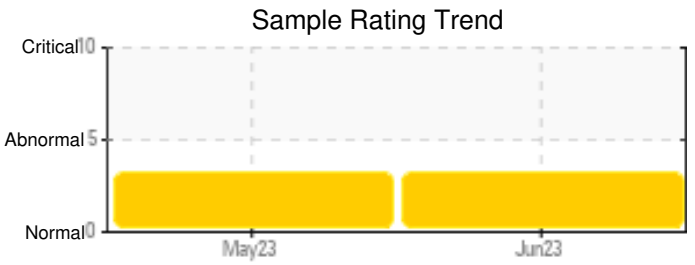




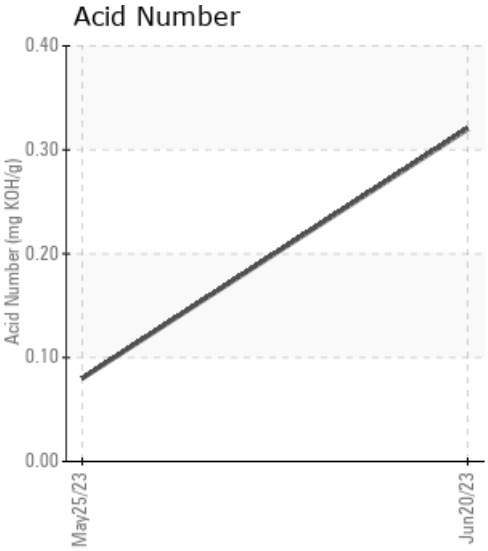
FT-0800-CU

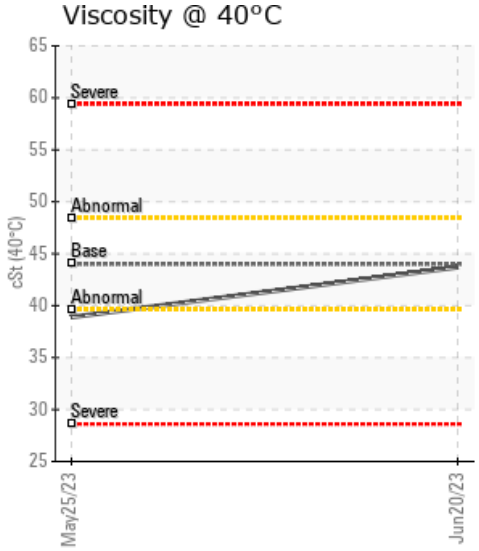
Customer: PTRHTF10255	System Information	Sample Information
MCCALL TERMINALS 5480 NW FRONT AVE PORTLAND, OR 97210 US Attn: Dustin Wilson Tel: (503)320-8886 E-Mail: dustin@mccallterminals.com	System Volume: 0 gal Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: MULTITHERM IG-4 Make: FULTON	Lab No: 02568099 Analyst: Ron LeBlanc Sample Date: 06/20/23 Received Date: 07/05/23 Completed: 07/25/23 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

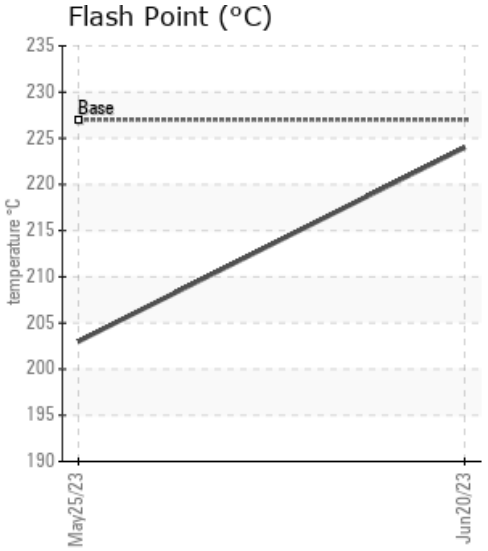
Recommendation: Pentane insolubles have decreased from previous sample. Acid Number is extremely high. Oxidation can cause the AN to increase. The viscosity has increased significantly from previous sample. If there is a strainer or filter in the system I would recommend inspecting to look for insolubles from varnish/sludge.

Comments: Acid Number (AN) is severely high.

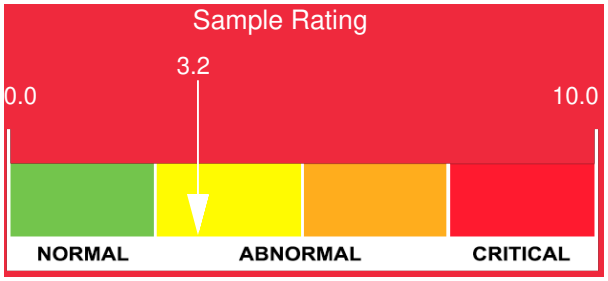
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/20/23	07/05/23	0.0m		435 / 224	17.5	43.7	0.32	0.243	734 / 390	838 / 448	937 / 503	0.66
05/25/23	06/13/23	0.0m	discharge side of pp	397 / 203	26.8	38.9	0.08	0.419	629 / 332	804 / 429	925 / 496	10.38
Baseline Data				441 / 227		44.0			725 / 385	820 / 438	936 / 502	5.7

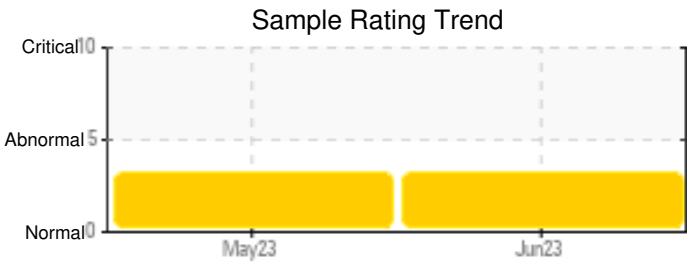






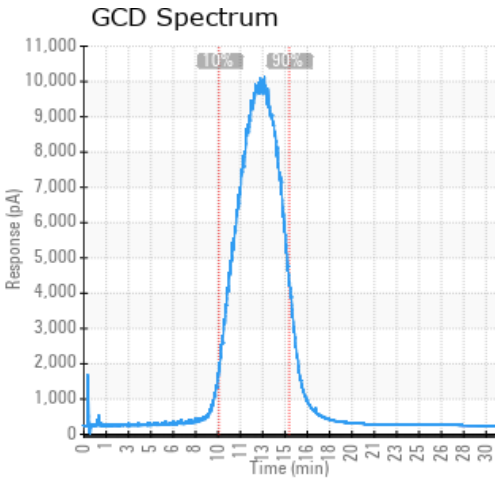
PETRO-CANADA LUBRICANTS

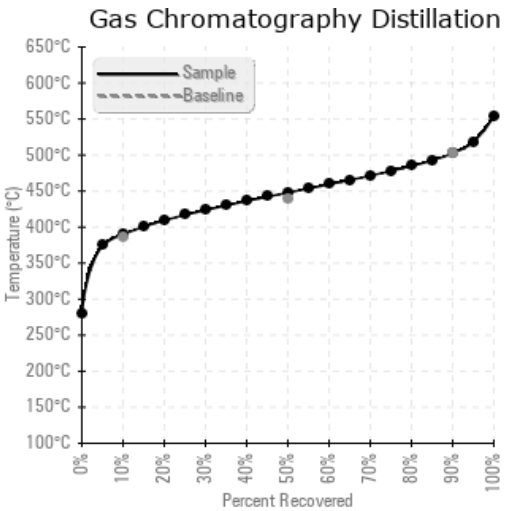


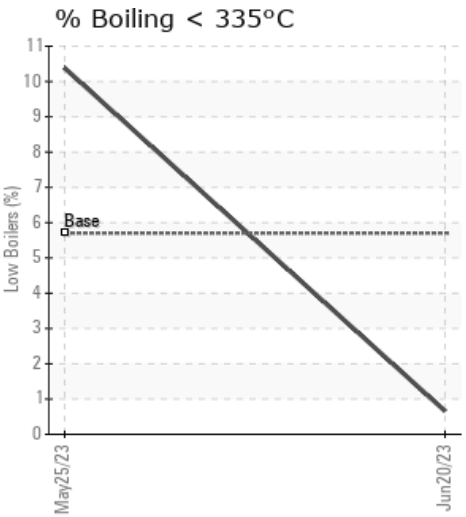


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
06/20/23	23	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2
05/25/23	16	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	2
Baseline Data			0	0						0			0	0					0				0	

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







Historical Comments

05/25/23	(GCD) 10% Distillation Point is severely low. Light end boilers are boiling below actual typical of the oil. Visc @ 40°C is abnormally low indication thermal breakdown.Pentane insolubles are abnormally high indicating sludge, varnish and possible byproducts of thermal degradation.It appears the system needs cleaned, flushed and refilled with new HTF. Pentane Insolubles levels are abnormally high. (GCD) 10% Distillation Point is severely low. Visc @ 40°C is abnormally low.

