

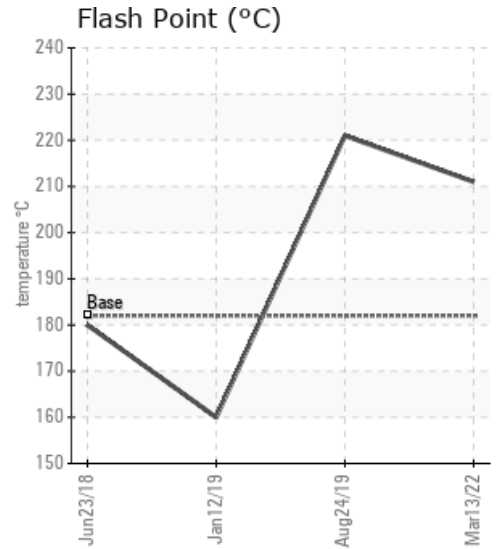
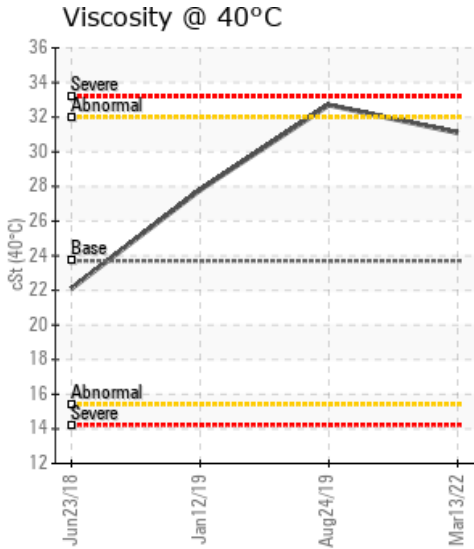
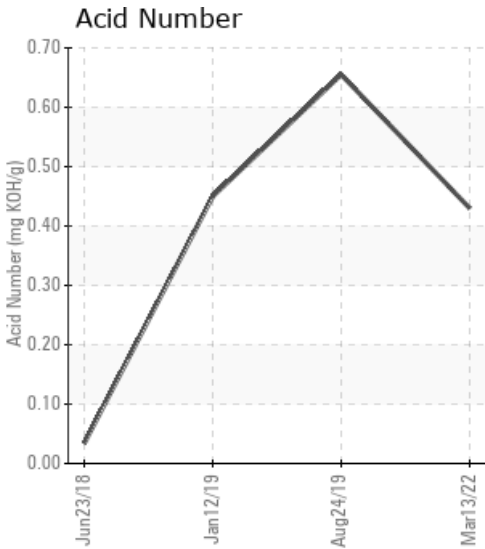
KAONA FUTHER 1

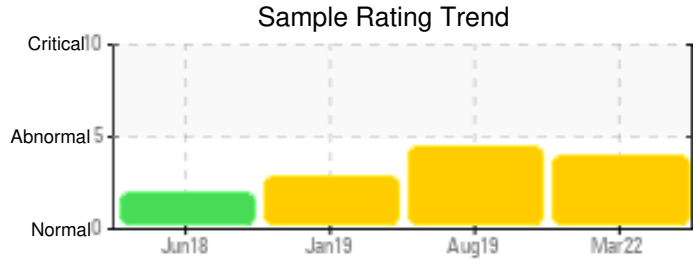
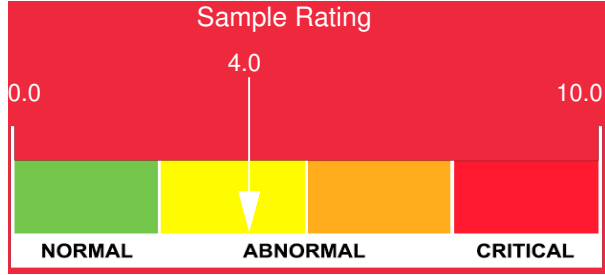
Customer: PTRHTF60010	System Information	Sample Information
SYNLUBE INTERNATIONAL CO LTD 76/1 MOO.7 THACHIN MUANG SAMUTSAKHON, 74000 THAILAND Attn: Kittisak Suthithanakom Tel: 6(681)850-1907 E-Mail: kittisak@synlube.co.th	System Volume: 4400 ltr Bulk Operating Temp: 545F / 285C Heating Source: Blanket: Fluid: EASTMAN THERMINOL XP Make: WANSON	Lab No: 02480440 Analyst: Bill Quesnel CLS,OMA II,MLA-III,LLA-I Sample Date: 03/13/22 Received Date: 03/30/22 Completed: 04/08/22 Bill Quesnel CLS,OMA II,MLA-III,LLA-I

Recommendation: Increase in viscosity and simdis 10% and 90% recovery indicates thermal cracking and degradation of the fluid. Suggest review heating efficiency and make decision of whether or not to change the thermal fluid.

Comments: (GCD) 10% Distillation Point is severely high. (GCD) 90% Distillation Point is severely high. Visc @ 40°C is abnormally high. COC Flash Point is marginally high.

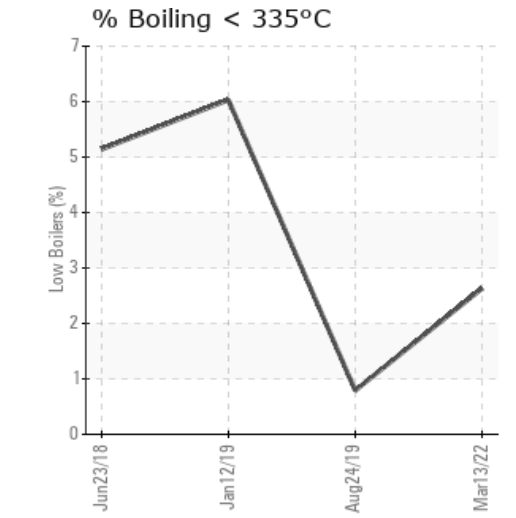
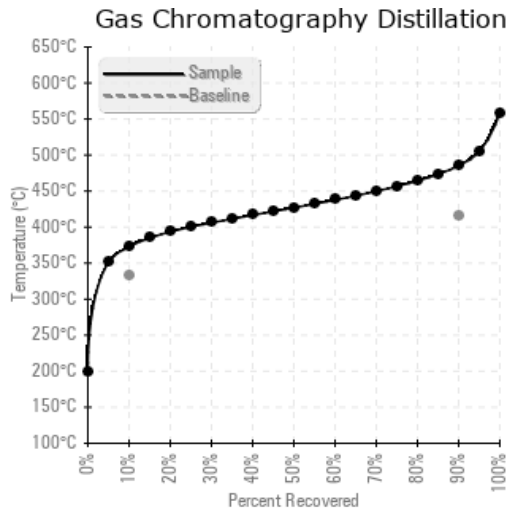
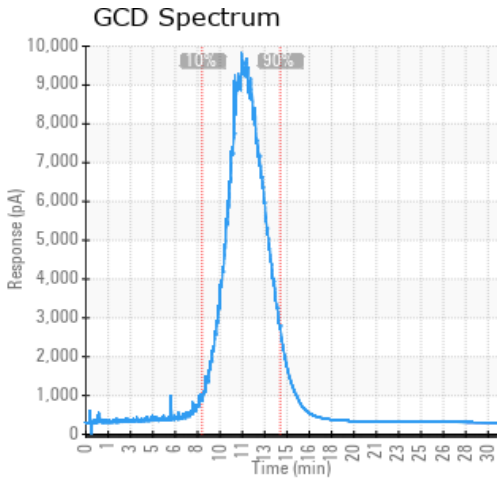
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/13/22	03/30/22	3.0y	SUPPLY RETURN	412 / 211	11.1	31.1	0.43	0.050	703 / 373	800 / 427	906 / 485	2.63
08/24/19	10/04/19	10.0y	SUPPLY RETURN	430 / 221	0.00	32.7	0.655	0.049	728 / 387	829 / 443	947 / 508	0.79
01/12/19	01/23/19	1.0y	SUPPLY RETURN	320 / 160	11.1	27.8	0.45	0.011	665 / 352	778 / 415	865 / 463	6.03
06/23/18	07/13/18	9.0y	SUPPLY/RETURN	356 / 180	0.00	22.1	0.034	0.177	653 / 345	742 / 395	862 / 461	5.14
Baseline Data				360 / 182		23.7			630 / 332		781 / 416	





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
03/13/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0
08/24/19	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	147	0
01/12/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
06/23/18	0	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	
08/24/19	Not a Petro Canada Fluid and do not have the fluid parameters to accurately diagnose sample. (GCD) 10% Distillation Point is severely high. (GCD) 90% Distillation Point is severely high. Visc @ 40°C is abnormally high. COC Flash Point is marginally high.
01/12/19	Please confirm if it is Therminol XP fluid. If it is the case, the fluid viscosity has been increased a lot from the last sample mainly due to the oil oxidation or the wrong oil top up. The fluid is also partially thermal cracked at the extremely high working temperature, so that the flash point is reduced. Please conduct the system venting to release the low boilers. Take one sample in 12 months to monitor the fluid conditions.
06/23/18	The current fluid has normal viscosity. Please monitor the fluid low flash point considering the high bulk oil temperature of 285C. Take one sample in 12 months to monitor the conditions. (GCD) 90% Distillation Point is high.

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