

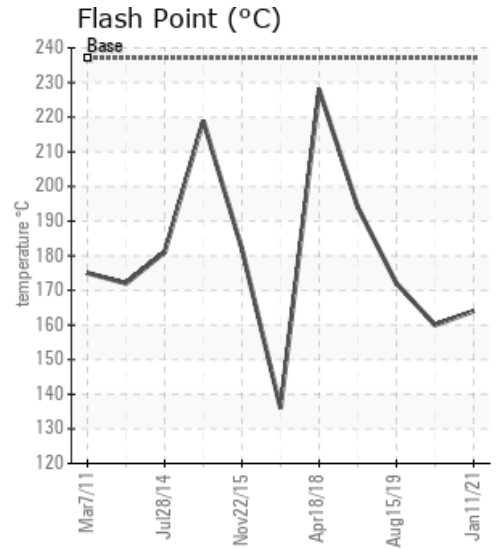
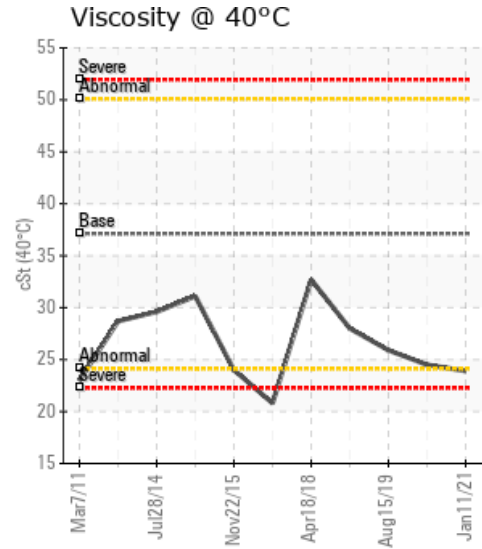
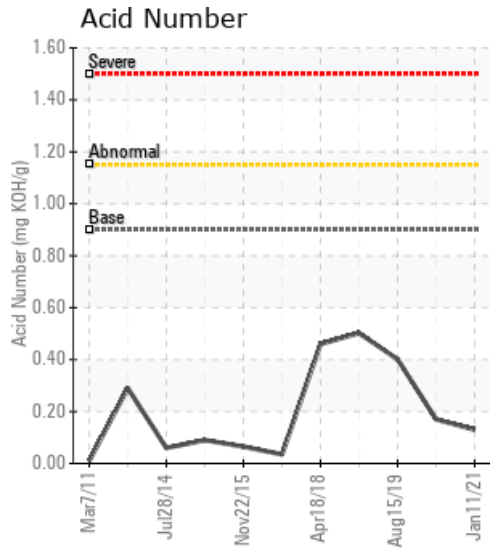
GFPT-FURTHER#1#2

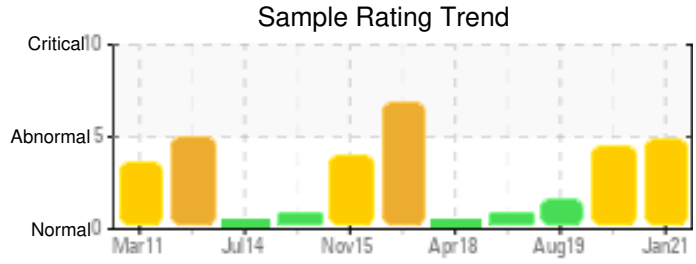
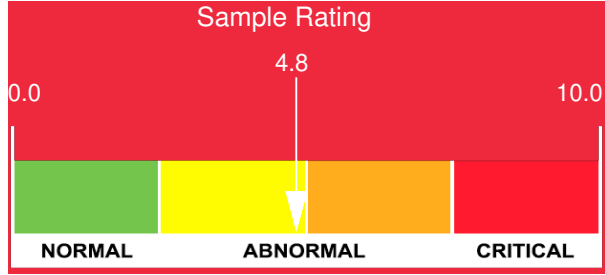
Customer: PTRHTF60010	System Information	Sample Information
SYNLUBE INTERNATIONAL CO LTD 76/1 MOO.7 THACHIN MUANG SAMUTSAKHON, 74000 THAILAND Attn: CHERNPORN CHOBKUI Tel: 034421290 E-Mail: chernporn@synlube.co.th	System Volume: 7000 ltr Bulk Operating Temp: 554F / 290C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02399577 Analyst: Philip Riley Sample Date: 01/11/21 Received Date: 01/25/21 Completed: 01/28/21 Philip Riley philip.riley@petrocanadalsp.com

Recommendation: Flash Point very low and also viscosity is also low. If the system can be vented safely then recommend this is done. Low viscosity and flash are linked and likely a result of thermal cracking, producing light end molecules of lower flash pt. Upon cracking there will also be heavy molecules and sludges formed. If flash point cannot be recovered should look towards a fluid change

Comments: COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. Visc @ 40°C is abnormally low. (GCD) % < 335°C is marginally high.

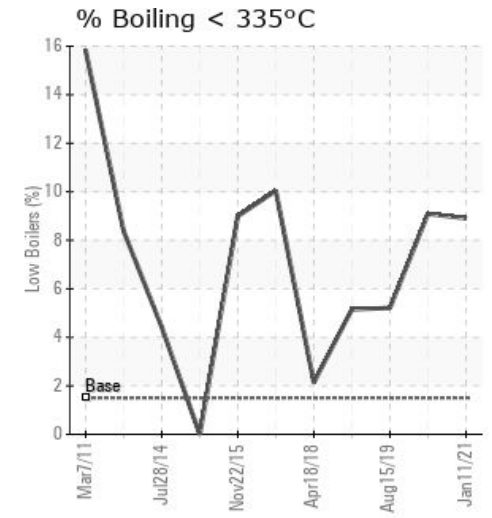
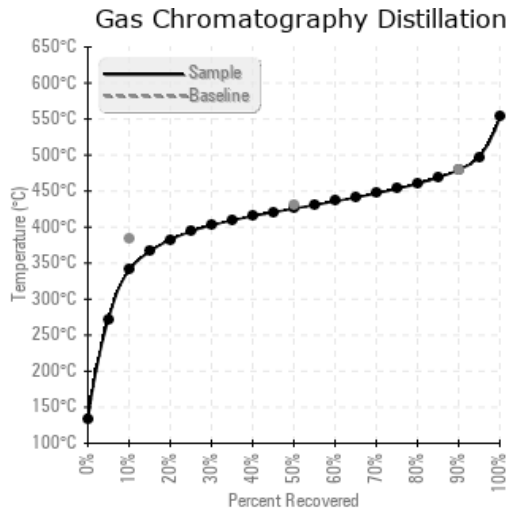
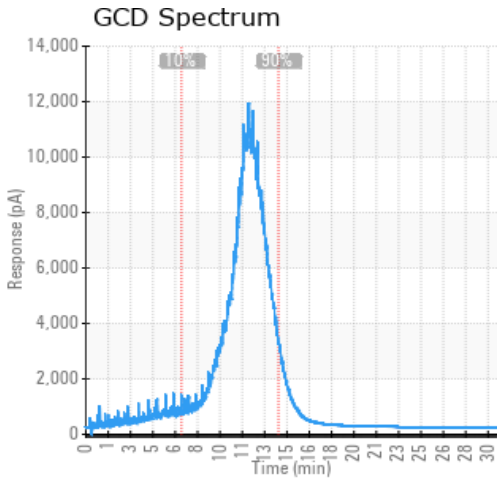
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/11/21	01/25/21	36m		327 / 164	3.4	23.9	0.13	0.062	645 / 340	798 / 426	895 / 480	8.90
08/15/19	06/08/20	20m	SUPPLY RETURN	320 / 160	0.00	24.5	0.17	0.053	641 / 338	797 / 425	895 / 480	9.09
08/15/19	10/04/19	20m	SUPPLY RETURN	342 / 172	0.00	25.9	0.401	0.069	696 / 369	819 / 437	910 / 488	5.21
01/12/19	03/05/19	24m	SUPPLY RETURN	381 / 194	4.9	28.0	0.502	0.087	678 / 359	792 / 422	878 / 470	5.15
04/18/18	06/12/18	4m	SUPPLY RETURN	442 / 228	3.0	32.7	0.46	0.034	708 / 375	804 / 429	891 / 477	2.14
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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
01/11/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
08/15/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
08/15/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	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
04/18/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
Baseline Data			0	0						0			0	0				0	0				230	

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



Historical Comments	
08/15/19	(GCD) % < 335°C is marginally high. COC Flash Point is abnormally low. (GCD) 10% Distillation Point is marginally low. Their is some evidence of thermal cracking which causes the light boiling molecules that reflect in the low flash point, and abnormal GCD. This is supported by the low viscosity also. System venting (if it can be done safely) is required as soon as possible, otherwise the partial oil change is recommended. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.
08/15/19	Viscosity trending towards low and COC Flash Pt very low. If the product can be safely vented to remove light molecules this should be done and a sample taken afterwards to check if there is recovery of the flash point. If not then should consider an oil change COC Flash Point is severely low.
01/12/19	The current fluid has normal viscosity and distillation point. The acid number, solid content and the contaminants are all low. The flash point is lower than the fresh oil, but still acceptable. Please continue to run the oil and take one sample in 12 months to monitor the conditions.
04/18/18	The fluid has adequate viscosity, flash point, distillation points. The acid number and solid content are all low. The oil is suitable for use, please take one sample in 12 months to monitor the fluid conditions.

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