

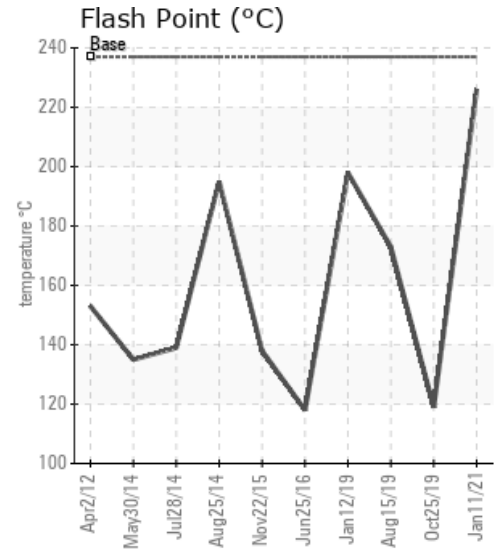
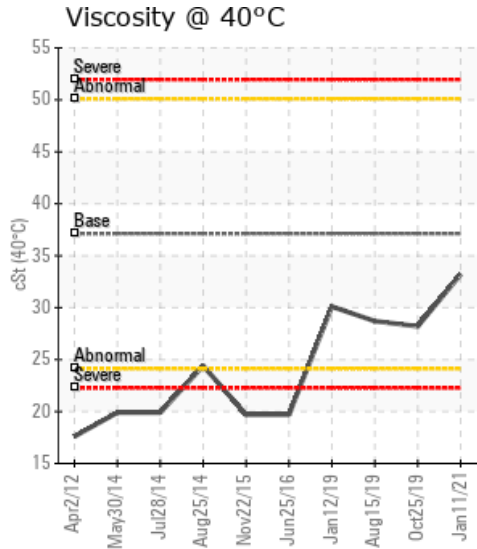
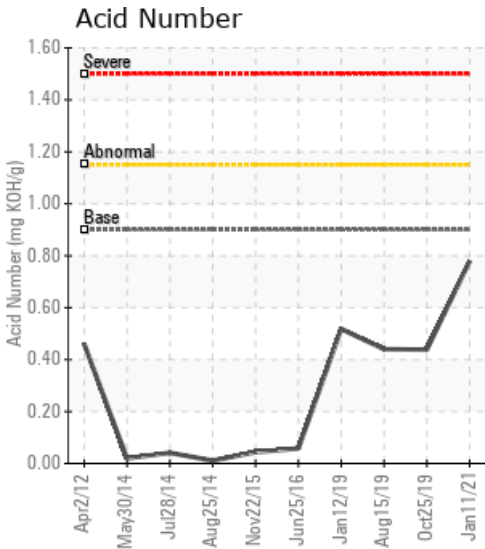
## GFPT-FURTHER#3#4

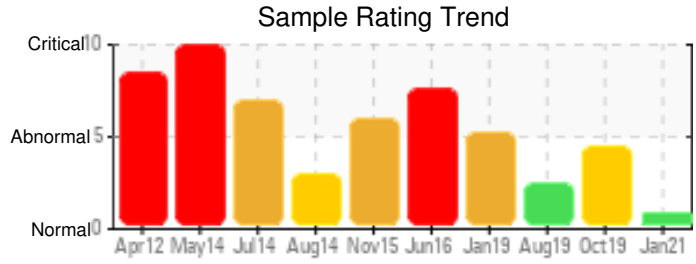
Customer: PTRHTF60010	System Information	Sample Information
SYNLUBE INTERNATIONAL CO LTD 76/1 MOO.7 THACHIN MUANG SAMUTSAKHON, 74000 THAILAND Attn: CHERNPORN CHOBKUI Tel: 034421290 E-Mail: chernporn@synlube.co.th	System Volume: 14350 ltr Bulk Operating Temp: 554F / 290C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: HOVAL	Lab No: 02399579 Analyst: Philip Riley Sample Date: 01/11/21 Received Date: 01/25/21 Completed: 01/28/21 Philip Riley philip.riley@petrocanadalsp.com

Recommendation: All parameters within acceptable ranges. Please resample at normal frequency

Comments: (GCD) 90% Distillation Point is abnormally high.

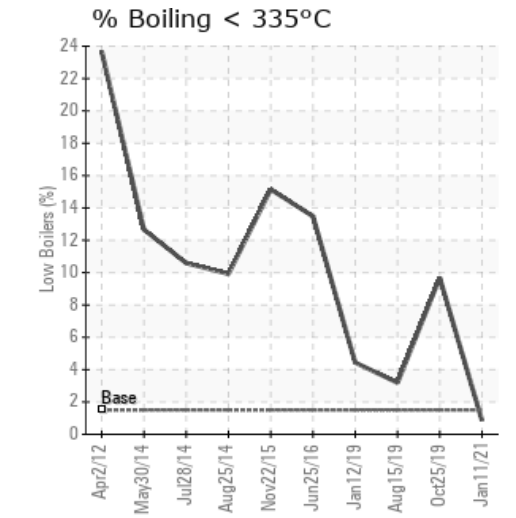
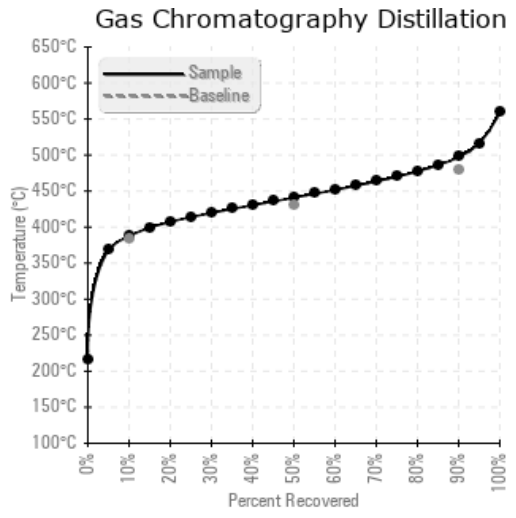
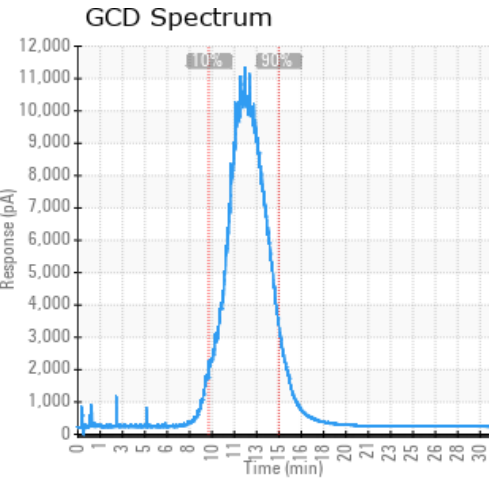
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/11/21	01/25/21	1m		439 / 226	6.4	33.2	0.78	0.072	729 / 387	826 / 441	927 / 497	0.86
10/25/19	10/31/19	18m	SUPPLY/RETURN	246 / 119	0.00	28.2	0.438	0.053	633 / 334	781 / 416	883 / 473	9.68
08/15/19	10/04/19	16m	SUPPLY RETURN	343 / 173	10.4	28.7	0.440	0.055	717 / 381	828 / 442	920 / 493	3.19
01/12/19	03/05/19	8m	SUPPLY RETURN	388 / 198	7.6	30.1	0.518	0.041	687 / 364	798 / 426	891 / 477	4.44
06/25/16	07/11/16	6m		244 / 118	13.3	19.7	0.058	0.057	600 / 316	762 / 406	944 / 507	13.48
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	34	0
10/25/19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
08/15/19	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
01/12/19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
06/25/16	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				230	

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



Historical Comments	
10/25/19	Strong evidence of thermal cracking with the flash point at a severely low value. Must be vented to recover flash point otherwise look at immediate change of oil based on the severely low flash point COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.
08/15/19	Historic results on this system show there have been much lower COC Flash Pt values, however, we cannot afford to work to these levels. Attempt to vent the system if safe to do so and remove light molecules to recover the flash point. If not please take a sample in 3 months to closely monitor and potentially look towards scheduling a change COC Flash Point is severely low. (GCD) 90% Distillation Point is abnormally high.
01/12/19	The current fluid has normal viscosity and flash point. The solid content and the water or dirt contaminants are all low. The fluid might experiences a mild oxidation due to the high bulk working temperature. Please make sure the expansion tank is sealed by the nitrogen blanket and the tank temperature is less than 65C during the normal operation. Please continue to run the oil and take one sample in 12 months to monitor the conditions.
06/25/16	(GCD) % < 335°C is severely high. COC Flash Point is severely low. The current fluid has been severely thermal cracked. The high content of light boiler causes the low flash point. The system venting is required, otherwise the oil change is required immediately.

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.