

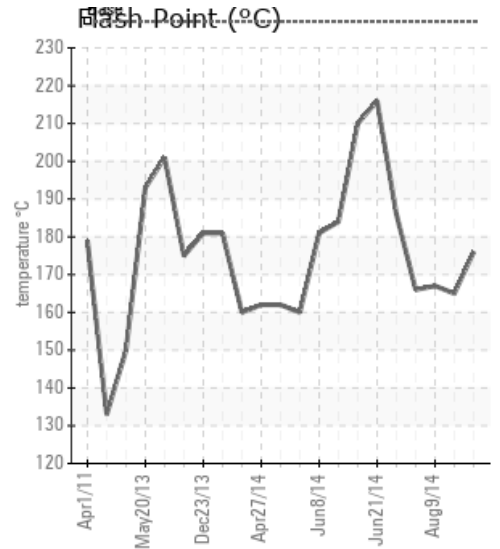
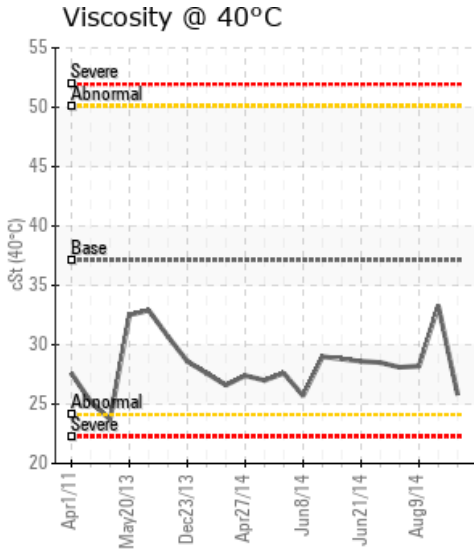
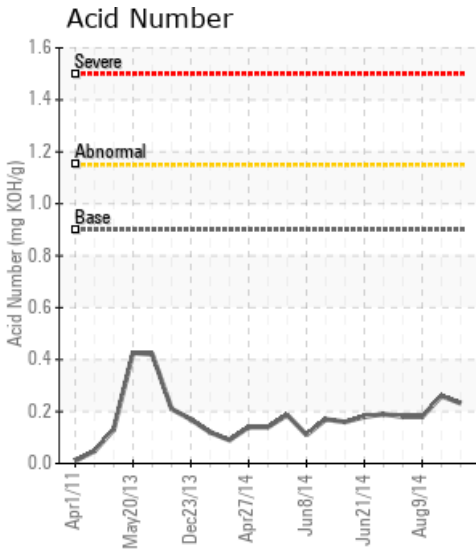
CARGILL MEAT

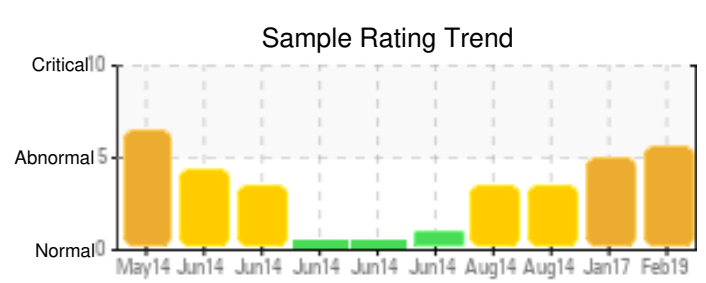
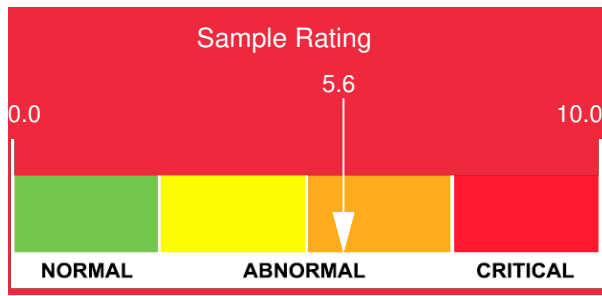
Customer: PTRHTF60010	System Information	Sample Information
SYNLUBE INTERNATIONAL CO LTD 76/1 MOO.7 THACHIN MUANG SAMUTSAKHON, 74000 THAILAND Attn: CHERNPORN CHOBKUI Tel: 034421290 E-Mail: chernporn@synlube.co.th	System Volume: 9225 ltr Bulk Operating Temp: 554F / 290C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02271408 Analyst: Yutong Gao Sample Date: 02/20/19 Received Date: 03/05/19 Completed: 03/07/19

Recommendation: The current fluid has minimum oxidation, very low solid contents and very low third party contaminants such as the water and dirt particles. The oil viscosity and flash point are all lower than the fresh oil mainly due to the thermal cracking at high bulk temperature conditions. Please plan and conduct the system venting as soon as possible. Please run the current fluid and take one sample in 6 months to monitor the conditions.

Comments: (GCD) 10% Distillation Point is low. COC Flash Point is low. (GCD) % < 335°C is 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	%
02/20/19	03/05/19	34m	SUPPLY	349 / 176	9.9	25.8	0.232	0.080	623 / 328	783 / 417	880 / 471	10.32
01/11/17	01/23/17	9m	SUPPLY/RETURN	329 / 165	9.7	33.3	0.26	0.042	688 / 364	803 / 428	897 / 480	5.05
08/09/14	08/19/14	16m	RETURN	333 / 167	20.0	28.2	0.18	0.127	698 / 370	804 / 429	899 / 482	3.72
08/08/14	08/19/14	16m	SUPPLY	331 / 166	20.5	28.1	0.18	0.116	676 / 358	802 / 428	903 / 484	6.29
06/22/14	07/03/14	14m	RETURN	367 / 186	31.9	28.5	0.19	0.100	684 / 362	803 / 429	896 / 480	5.59
06/21/14	07/03/14	14m	SUPPLY	421 / 216	36.8	28.6	0.18	0.050	685 / 363	803 / 428	893 / 479	5.49
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5

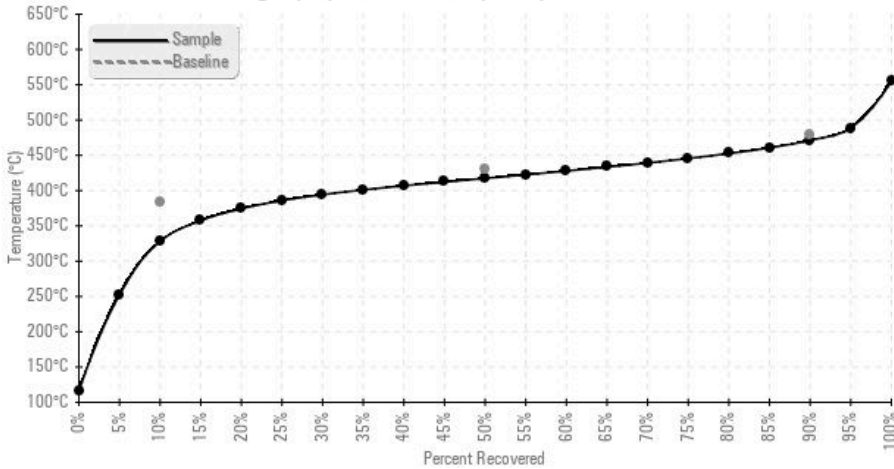




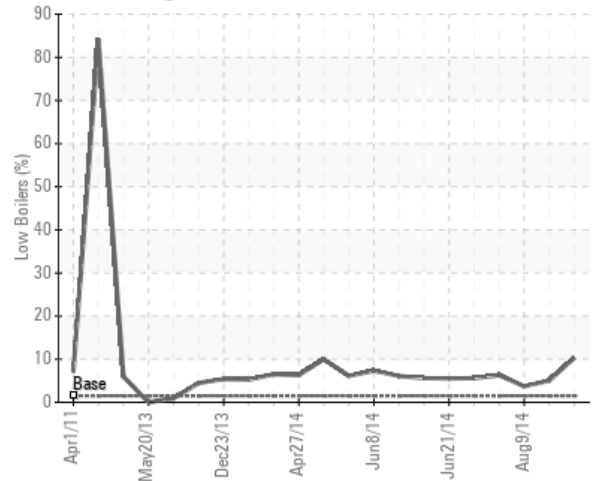
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc	
02/20/19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	
01/11/17	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	15	0
08/09/14	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	25	0	
08/08/14	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	25	0	
06/22/14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	23	2	
06/21/14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	24	1	
Baseline Data			0	0						0			0	0					0					230	

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

Gas Chromatography Distillation (GCD)



% Boiling < 335°C



Historical Comments

01/11/17	Please confirm where this sample was taken from? The test results indicate the oil has decent viscosity, TAN, Solid content and the GCD points. However, the flash point is very low due to the thermal cracking. The low boiler of the fluid needs to be vented from the system as soon as possible. Please confirm if the system was modified to allow the efficient venting. Please also confirm what is the AIT test result to address the safety concerns.
08/09/14	The fluid should be well mixed, the return/supply lines have very similar test results interm of viscosity/flash point/particles. However, there is noticeable difference on GCD%<335C and GCD 10%. The sulfur level is 43ppm (don't include in the report) indicates there might be a third party contamination. Most likely, this is also a bad sample. Please make sure there is no change of the venting process and take a good sample after a longer period of flushing. COC Flash Point is marginally low.
08/08/14	If the current venting process is still the same (~ 200L oil topup/month), there is no reason to see the flash point drop from 186C to 166C within 2 months. The sulfur level is 40ppm (don't include in the report) indicates there might be a third party contamination. Most likely, this is a bad sample. Please make sure there is no change of the venting process and take a good sample after a longer period of flushing. COC Flash Point is marginally low. (GCD) 10% Distillation Point is marginally low.
06/22/14	Viscosity, GCD distillation, Flash Points and Solid level are all good. However, the flash point reading is still lower than the supply line sample, looks like the fluid is not well mixed. Please take one sample in 4 months to monitor.
06/21/14	Viscosity, GCD distillation, Flash Points and Solid level are all good. Please take one sample in 4 months to monitor.

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