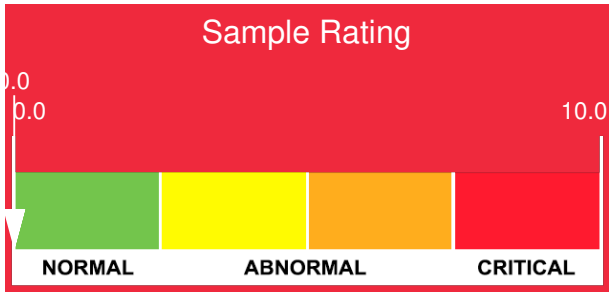
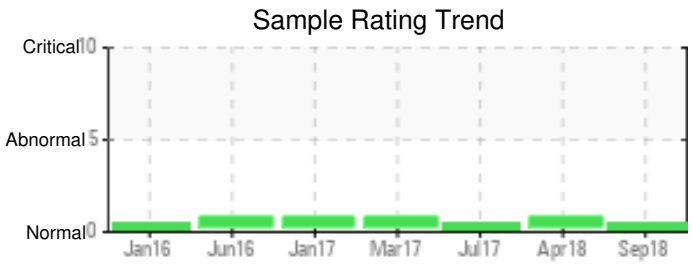




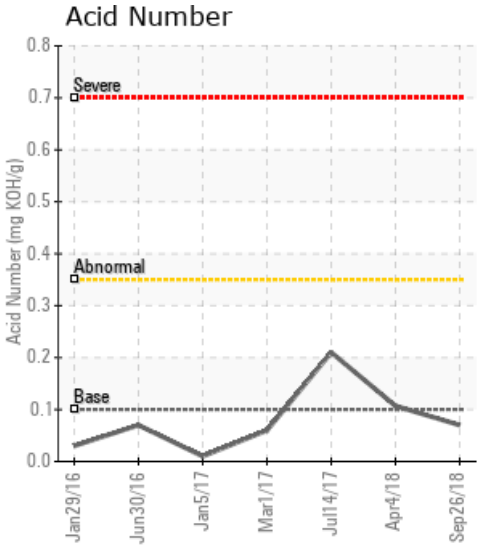
LN01 Filled Sealdown Hot Oil System

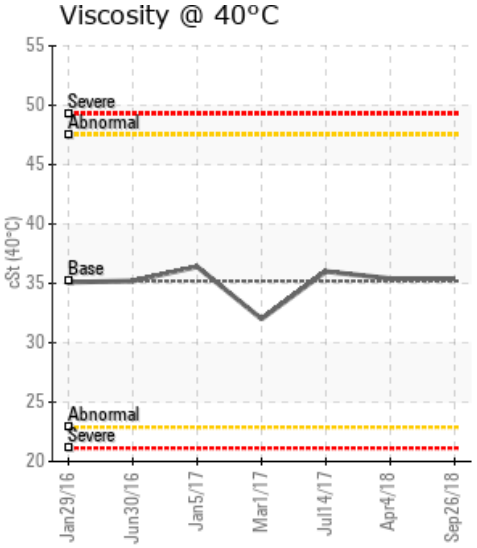
Customer: PTRHTF10141	System Information	Sample Information
TAMKO BUILDING PRODUCTS 2300 35TH ST TUSCALOOSA, AL 35401 USA Attn: Greg Colburn Tel: (205)752-3555 E-Mail: gregory_colburn@tamko.com	System Volume: 55 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: Heat Exchanger And T	Lab No: 02243834 Analyst: Manny Garcia Sample Date: 09/26/18 Received Date: 10/09/18 Completed: 10/11/18 To discuss this report contact Manny Garcia at 954-384-7259

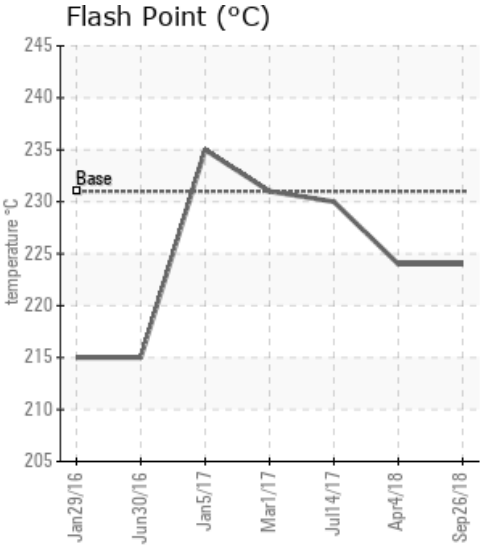
Recommendation: Fluid is suitable for continued use. Please re-submit sample fluid in September 2019.

Comments:

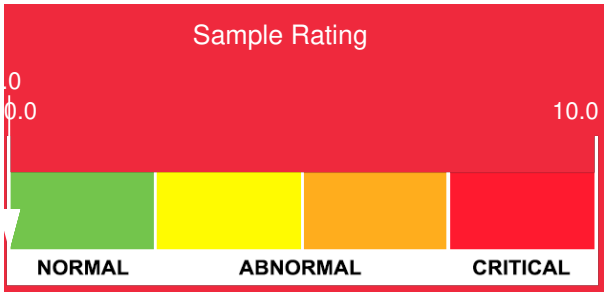
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/26/18	10/09/18	2y		435 / 224	0.00	35.4	0.07	0.042	728 / 387	811 / 433	909 / 487	0.00
04/04/18	04/11/18	9y		435 / 224	8.6	35.4	0.107	0.021	731 / 389	820 / 438	925 / 496	0.81
07/14/17	07/25/17	6y	PORT	446 / 230	48.8	36.0	0.21	0.048	727 / 386	814 / 434	920 / 494	0.38
03/01/17	04/06/17	3y	PORT	448 / 231	161.0	32.0	0.06	0.047	717 / 381	813 / 434	926 / 497	1.68
01/05/17	01/12/17	1y	SAMPLE PORT	455 / 235	2.0	36.4	0.01	0.053	721 / 383	821 / 438	932 / 500	1.01
06/30/16	07/11/16	0y	SAMPLE PORT	419 / 215	32.3	35.2	0.07	0.070	719 / 382	809 / 432	918 / 492	0.36
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75

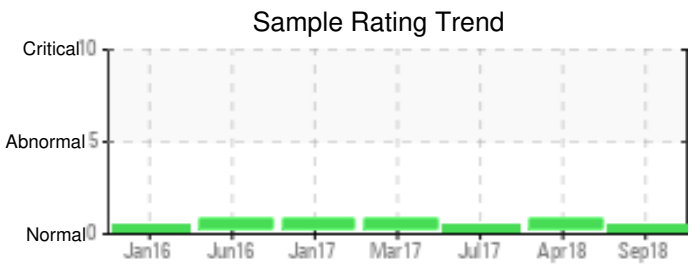






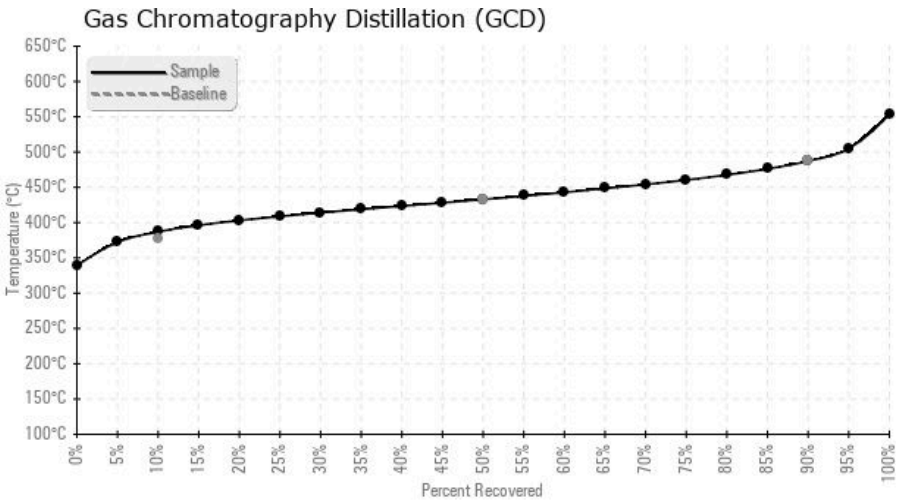
PETRO-CANADA LUBRICANTS

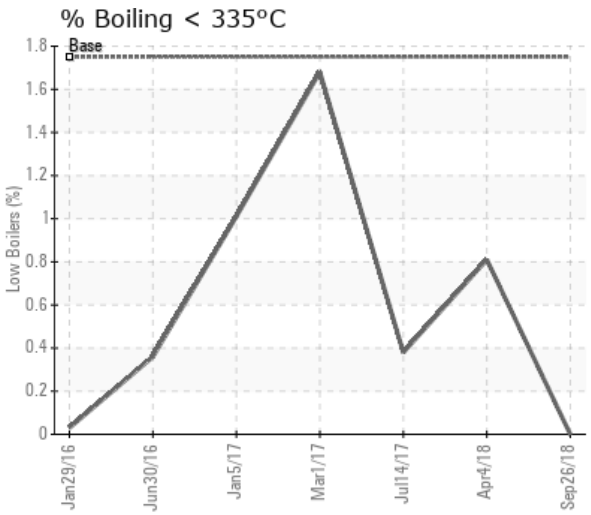




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
09/26/18	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	43	0
04/04/18	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	46	0
07/14/17	12	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	204	2
03/01/17	15	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	233	0
01/05/17	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	310	0
06/30/16	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				280	

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





Historical Comments

04/04/18	The fluid is suitable for continued use. 'Venting' the system may assist in bringing down the 90% distillation point. This value has been slightly elevated historically. Please re-submit sample in 12 months. (GCD) 90% Distillation Point is marginally high.
07/14/17	Oil is suitable for continued use; Please submit next annual sample during July 2018;Wear Metals are low; Water is low; Acid number is low; Viscosity is satisfactory; Pentane insolubles are low; very light debris found in sample; (GCD) 90% Distillation Point is marginally high. This can be mitigated by 'venting' the heat transfer system
03/01/17	'Venting' this system may help mitigate the 90% distillation point/All other parameters are suitable for continued use/Any maintenance performed on the system to assist in lowering the 90% distillation point should have a sample re-submitted to verify any work performed otherwise please submit next scheduled annual sample as plannedWear Metals are low/Contamination levels are low/Water contamination is satisfactory/Acid number is satisfactory/Viscosity is good/COC Flash point is satisfactory(GCD) 90% Distillation Point is slightly high, but has come down since January's analysis - back to the value from June of last year/Pentane Insolubles are low/Very Light debris was noticed in sample of fluid by the lab.
01/05/17	(GCD) 90% Distillation Point is slightly higher than expected and has been in the same range historically. Recommendation to vent the system when possible to bring this value down. Sample at next normal intervalWear metals are low, but slightly higher tin and iron present as compared to historical values. No action necessary. Contaminant levels are low. Additive levels are acceptable. Higher than normal phosphorous levels of 310ppm vs an expected 10ppm. Lower in Sulphur from ~400ppm down to 21 ppm. Possible contamination from another fluid. Pentane solids are low/good. Water is low/good. Viscosity is good.(GCD) 90% Distillation Point is higher than expected. The oil sample looks good
06/30/16	'Venting' system may correct the slightly high distillation figures at 90%. Please send in next sample at the next scheduled interval. Please include the time on oil & the age of the system on next sample label.Wear Metals are satisfactory-low/Contamination level is in check-low/Very low water contamination/Acid Numbers are good-low/Viscosity is satisfactory/Flash Point is good/Pentane Solids are satisfactory-low/(GCD) 90% Distillation Point is slightly elevated/ Debris is very light in sample bottle