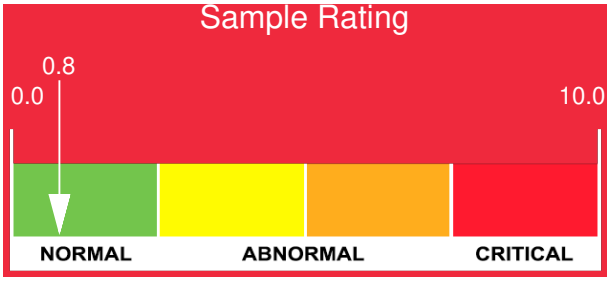
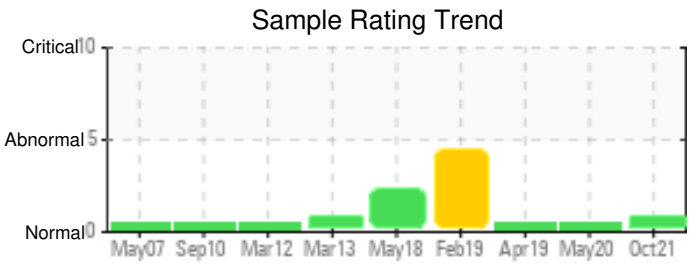
PETRO-CANADA LUBRICANTS





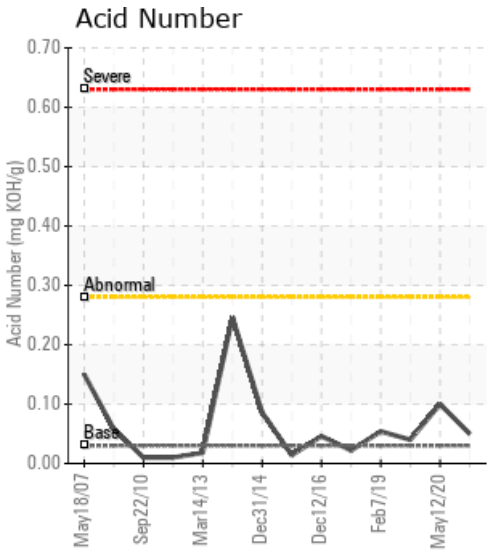
LINE 7 HOT OIL SYSTEM

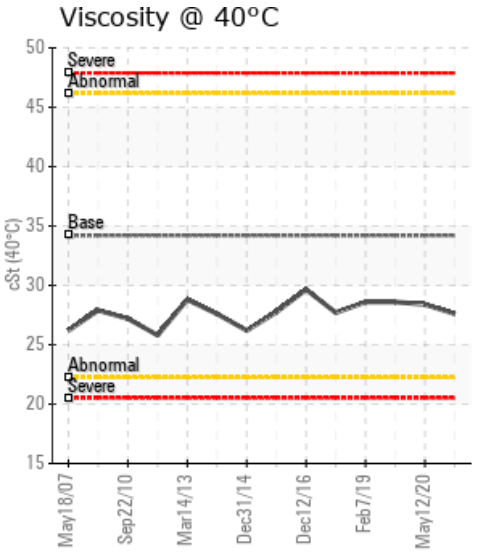
Customer: PTRHTF10094	System Information	Sample Information
CERTAINTEED CORPORATION - OXFORD 200 CERTAINTEED RD OXFORD, NC 27565 USA Attn: Seth Newton Tel: (919)693-1141 E-Mail: Seth.newton@saint-gobain.com	System Volume: 375 gal Bulk Operating Temp: 519F / 271C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02450768 Analyst: Manny Garcia Sample Date: 10/01/21 Received Date: 10/18/21 Completed: 10/22/21 Manny Garcia manuel.garcia@hollyfrontier.com

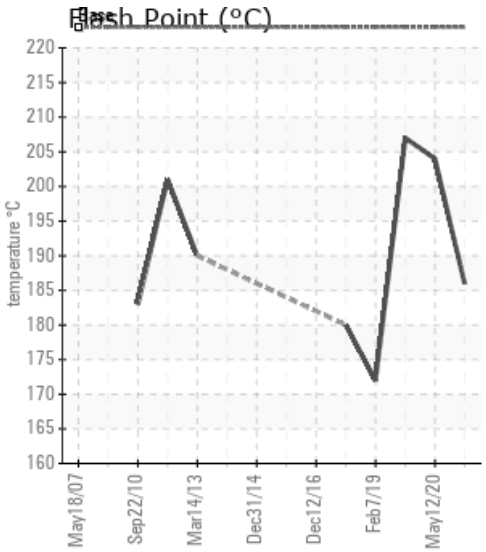
Recommendation: Oil is suitable for continued use. Recommend next sample be submitted in October 2022.

Comments: COC Flash point is down 18oC to 186 oC & should be monitored closely.

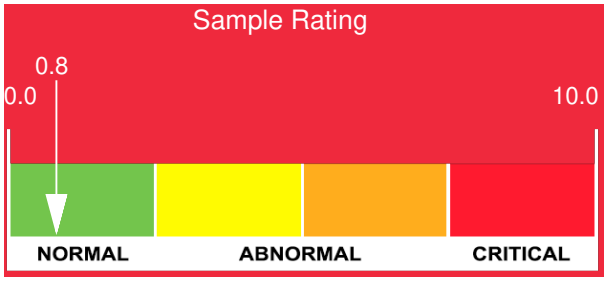
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/01/21	10/18/21	0.0m	by supply pump	367 / 186	23.1	27.6	0.05	0.033	689 / 365	799 / 426	902 / 483	4.79
05/12/20	07/06/20	5.0m		399 / 204	11.6	28.4	0.10	0.159	688 / 365	799 / 426	902 / 483	4.95
04/10/19	04/22/19	48.0m	HEATER	405 / 207	3.7	28.6	0.040	0.049	687 / 364	795 / 424	904 / 485	4.09
02/07/19	02/28/19	1.0m	HOT OIL HEATER	342 / 172	22.8	28.6	0.054	0.019	647 / 341	771 / 411	881 / 472	8.39
05/03/18	05/23/18	0.0m	MAIN RETURN	356 / 180	16.3	27.7	0.022	0.046	680 / 360	781 / 416	888 / 475	2.55
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

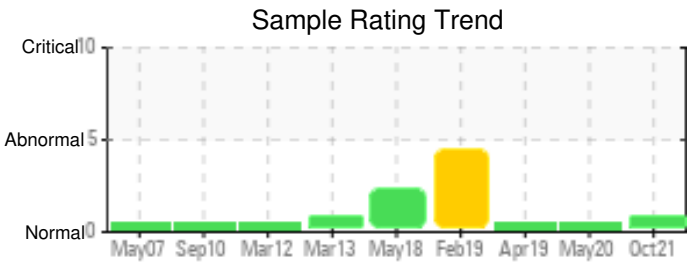






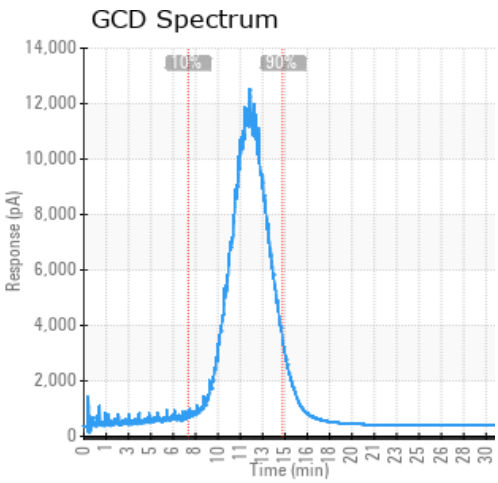
PETRO-CANADA LUBRICANTS

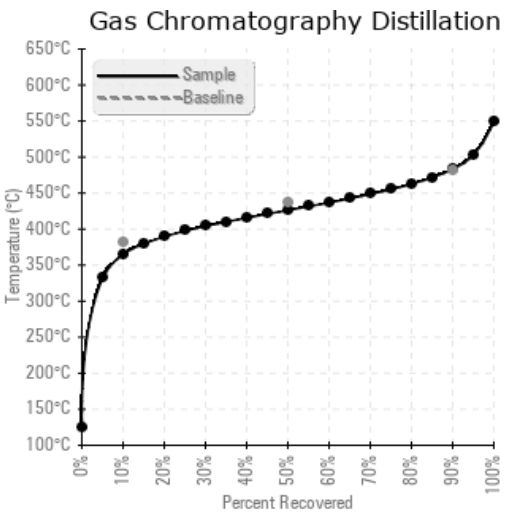


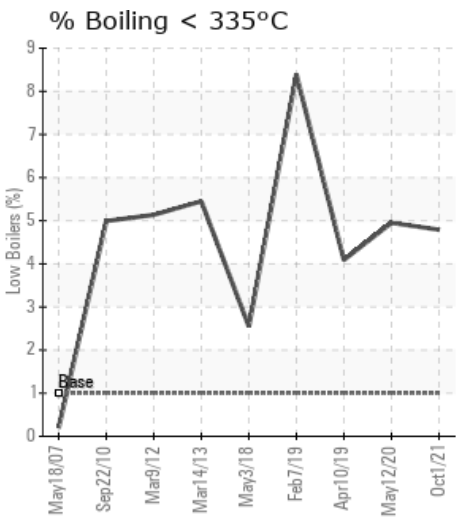


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
10/01/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/12/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/10/19	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02/07/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/03/18	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 anaysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]







Historical Comments

05/12/20	Virtually no change to the fluid in the last year. Viscosity is stable, flash point remains strong, no asphalt or moisture contamination. No action required based on these results.
04/10/19	The significant oil addition is noticed by the improved GCD results. No action required at this time. Re-sample this system at the next scheduled interval.
02/07/19	Last year we suggested some venting to bring the viscosity and flash point up. The flash point further decreased and low boilers increased some more. We are suggesting venting as well as replacing about 10% of the system fluid with fresh oil to help accelerate the improvement in the condition of the overall fluid. Once the venting and partial oil replacement has been done we recommend to take another sample a couple days later to measure the impact. COC Flash Point is abnormally low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally low.
05/03/18	Some of the tests are missing because previous samples were tested like regular industrial fluids. Nothing is flagged as abnormal but we would like the viscosity and flash point to go up slightly. The way to do this is by venting some light ends out of the system and replace the volume drop by adding fresh oil until the expansion tank is 75% full. COC Flash Point is marginally low.