

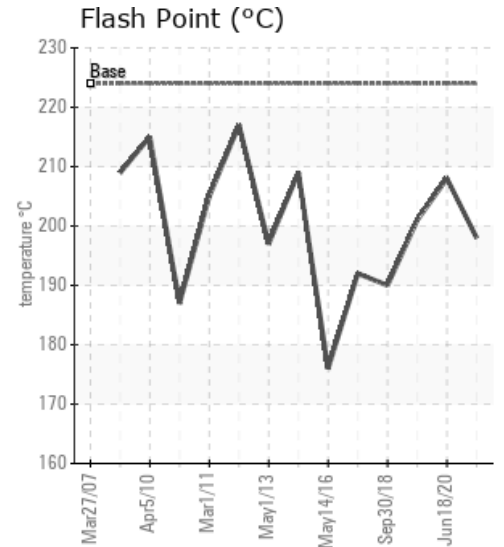
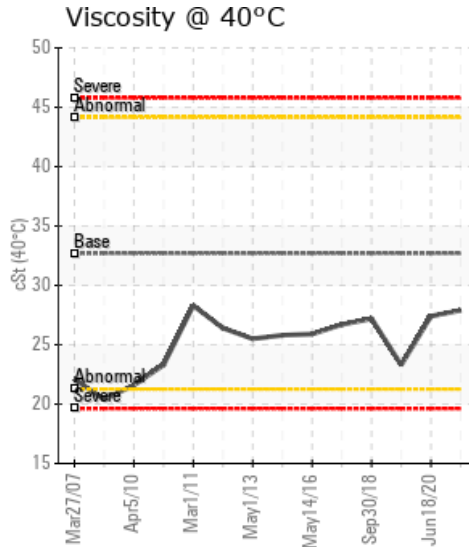
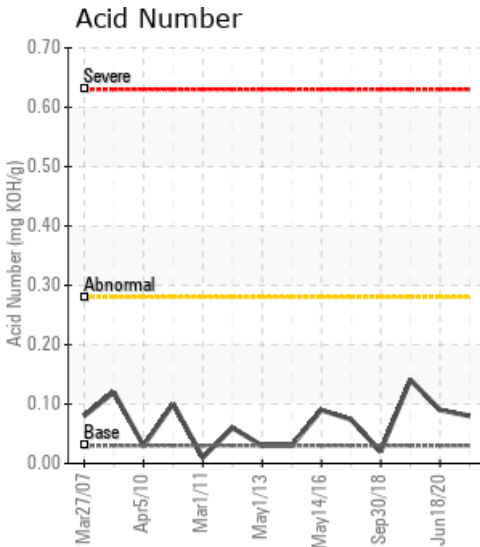
LINE 1 FILLER HEATER SYSTEM

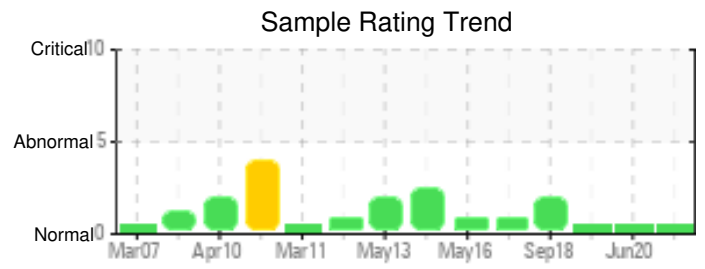
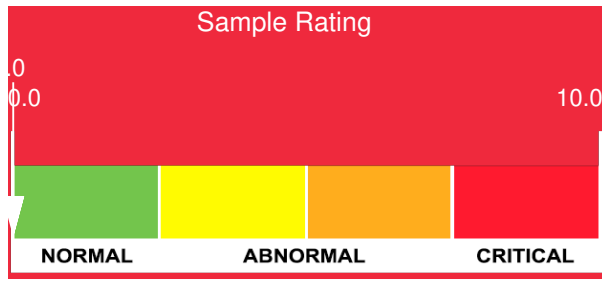
Customer: PTRHTF10069	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 3303 EAST 4TH AVENUE SHAKOPEE, MN 55379 USA Attn: Patrick Wallace Tel: E-Mail: patrick.wallace@saint-gobain.com	System Volume: 5670 gal Bulk Operating Temp: 428F / 220C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02420345 Analyst: Neil Buchanan Sample Date: 04/29/21 Received Date: 05/11/21 Completed: 05/13/21 Neil Buchanan neil.buchanan@hollyfrontier.com

Recommendation: GCD graph, lowered IBP and slightly lowered flash point show the formation of some light boilers. Venting should be considered. Sample results look good otherwise. Resample next interval to monitor.

Comments:

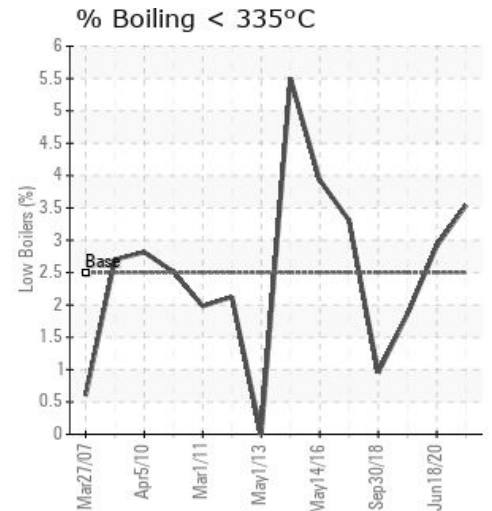
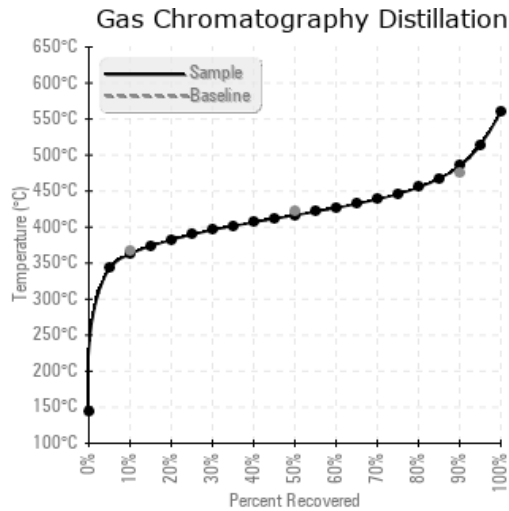
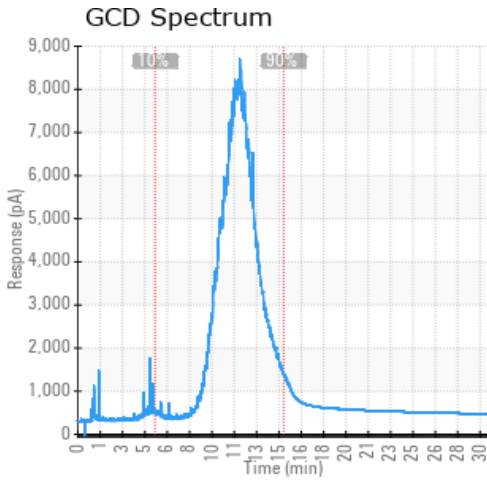
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/29/21	05/11/21	15.0y		388 / 198	10.1	27.9	0.08	0.041	685 / 363	782 / 416	904 / 484	3.54
06/18/20	06/29/20	0.0y	main system	406 / 208	12.1	27.4	0.09	0.104	694 / 368	795 / 424	895 / 480	2.91
09/24/19	10/21/19	0.0y	MAIN SYSTEM FLOW	394 / 201	9.0	23.3	0.141	0.074	699 / 371	798 / 426	898 / 481	1.86
09/30/18	10/10/18	0.0y		374 / 190	8.4	27.2	0.02	0.034	691 / 366	782 / 417	877 / 469	0.95
09/02/17	09/12/17	4.0y	MAIN SYSTEM FLOW	378 / 192	9.6	26.7	0.074	0.035	685 / 363	788 / 420	889 / 476	3.31
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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
04/29/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	0
06/18/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0
09/24/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0
09/30/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0
09/02/17	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0
Baseline Data			0	0						0			0	0					0				270	

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



Historical Comments

06/18/20	Sample properties look good with a slight increase in viscosity more towards fluid typicals of 32.3 cSt, likely do to addition of fluid as Acid Number remains constant. Resample next interval to monitor.
09/24/19	The oil is holding steady with the properties remaining normal. Although we are seeing a drop in viscosity, the flash point increased. Let's just keep an eye on it until the next sample. Contamination by asphalt, water or other elements is insignificant or non-detectable. No actions needed at this time. Re-sample at next scheduled interval
09/30/18	The flash point is a bit low because of the reduced viscosity but it remains stable from year to year. Re-sample at next scheduled interval. No trace of contamination by asphalt or the elements or fluid degradation. COC Flash Point is marginally low.
09/02/17	The oil condition is consistent with previous samples. The viscosity remains a little bit low. No immediate action is required at this time but you can vent the low boilers out and replace the lost volume with fresh oil as preventative measure. Re-sample at next normal interval. COC Flash Point is marginally low.

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