

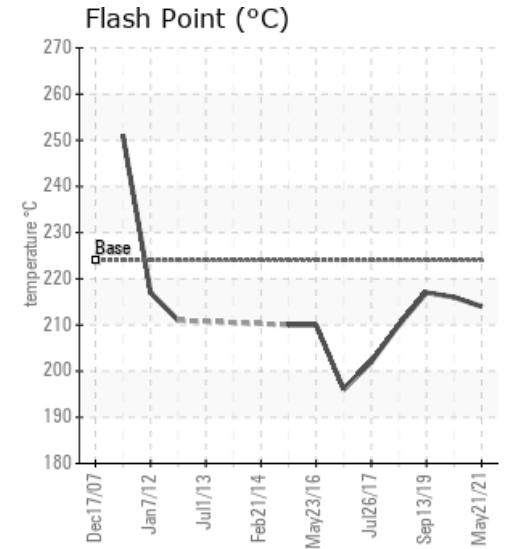
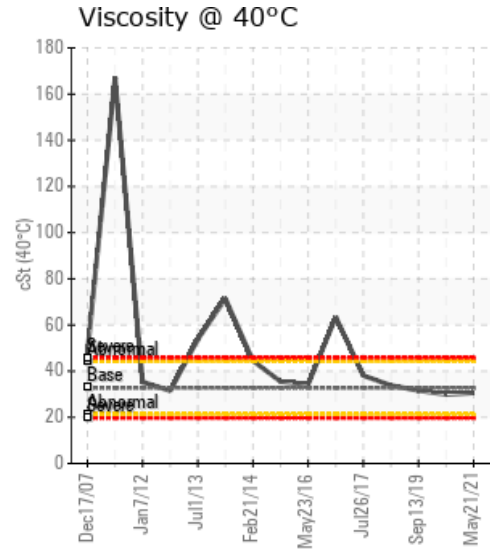
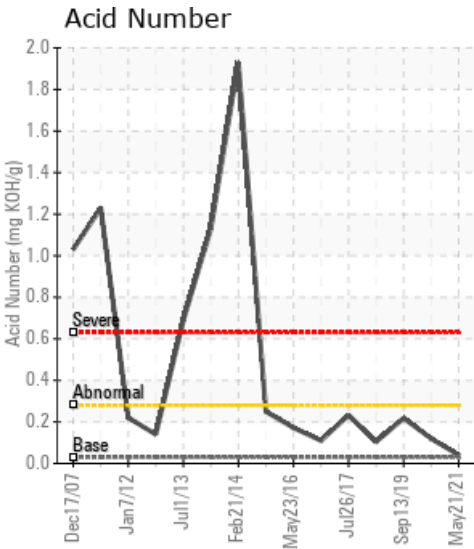
FRONT END/SMALL

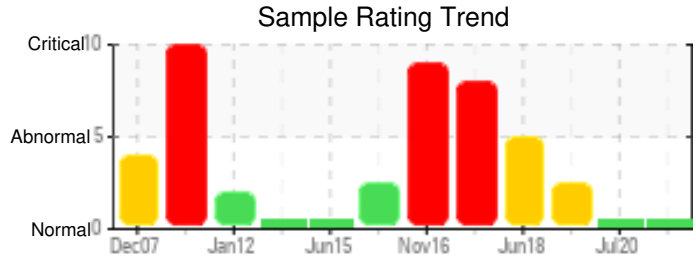
Customer: PTRHTF10037	System Information	Sample Information
CERTAINTEED ROOFING 200 SIERRA DR PEACHTREE CITY, GA 30269 US Attn: Ted Thompson Tel: E-Mail: Theodore.w.thompson@saint-gobain.com	System Volume: 400 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: HEATEC	Lab No: 02425927 Analyst: Manny Garcia Sample Date: 05/21/21 Received Date: 06/08/21 Completed: 06/22/21 Manny Garcia manuel.garcia@HFSinclair.com

Recommendation: Sample is Suitable for continued use. Please continue operation and re-submit sample in June 2022.

Comments: Very light debris was detected in the fluid sample. Please change any system filters. Moreover, the fluid 'may' be safely filtered during a down day with a portable filter cart to mitigate the visible debris.

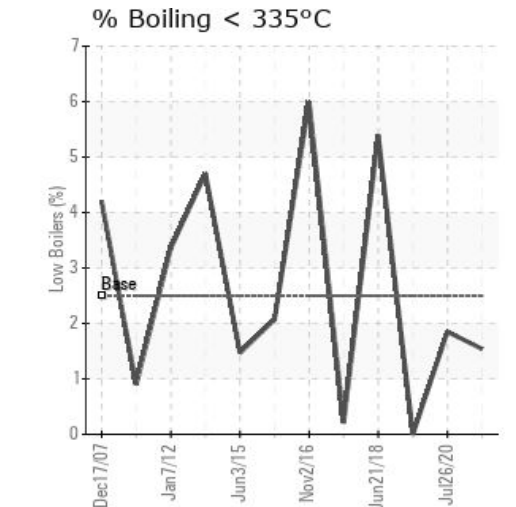
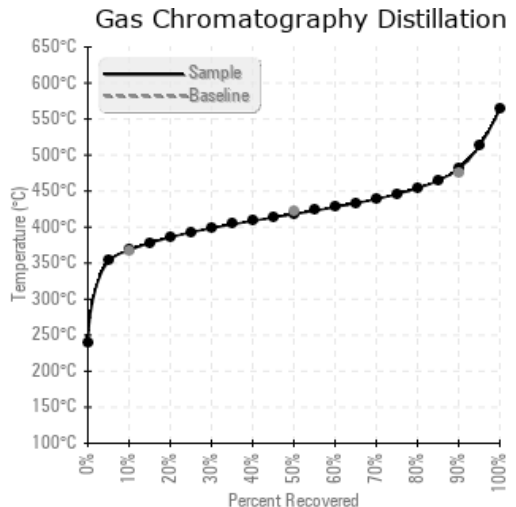
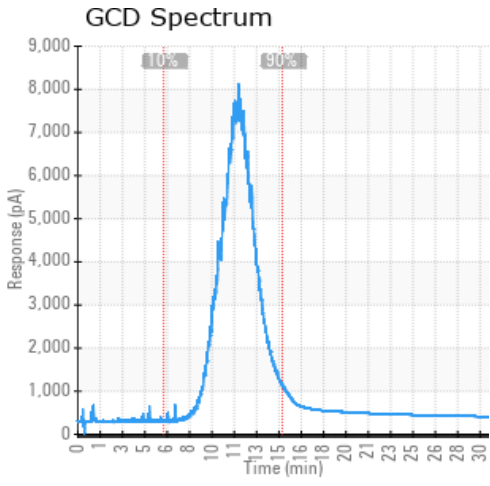
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/21/21	06/08/21	4.0y	Laminate coil loop	417 / 214	25.6	30.6	0.04	0.047	694 / 368	784 / 418	897 / 481	1.54
07/26/20	08/13/20	4.0y	MAIN PUMP	421 / 216	30.9	29.9	0.12	0.101	701 / 372	798 / 425	904 / 484	1.85
09/13/19	10/04/19	3.0y	MAIN PUMP	423 / 217	44.2	31.6	0.218	0.419	703 / 373	793 / 423	893 / 478	0.00
06/21/18	06/22/18	0.0y		410 / 210	125.7	33.8	0.104	1.05	661 / 349	773 / 412	903 / 484	5.39
07/26/17	08/08/17	3.0y	SUPPLY PUMP	396 / 202	214.9	38.1	0.233	2.16	736 / 391	807 / 431	904 / 485	0.21
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
05/21/21	4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	10	0	51	0
07/26/20	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	19	0	57	0
09/13/19	8	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	94	0	68	1
06/21/18	32	0	0	0	0	0	0	0	0	0	2	49	0	0	0	0	0	0	0	2	645	0	98	0
07/26/17	46	0	0	2	0	0	2	0	0	0	4	65	1	1	0	0	0	0	0	4	1292	0	137	1
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	
07/26/20	This system once suffered contamination from cleaners/degreasers stored in the same storage system as the fresh oil, as identified by our Sr Tech Manny Garcia some years ago. The signs of contamination are almost completely gone. The fluid appears to be in good condition at this time, no action required.
09/13/19	The cleaners and other products contaminating the hot oil are getting diluted now and the rest of the properties are normal. No action required at this time and re-sample at next scheduled interval. Pentane Insolubles levels are abnormally high. Calcium ppm levels are severely high.
06/21/18	The presence of elements found in soaps and degreasers is reducing, which means that the steps taken to prevent contamination of the common storage system used for oil and cleaners has been effective. Oil results are improving over time but the amount of solids remain high. Watch for filters if there are any on the system, replace with finer ones if possible. Pentane Insolubles levels are severely high. Sodium ppm levels are severely high. Calcium ppm levels are severely high.
07/26/17	The presence of foreign elements is still high but it is lower than the previous sample. Flash point is holding up well. The long term effect of the presence of calcium and sodium, which tends to be inorganic salts insoluble in oils that like to deposit inside the piping is not known. Considering the small size of the system, a partial oil replacement of 3 drums (40% of the system) every 6 months for the next year would help. Pentane Insolubles levels are severely high. Sodium ppm levels are severely high. Calcium ppm levels are severely high. (GCD) 10% Distillation Point is marginally high.

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