

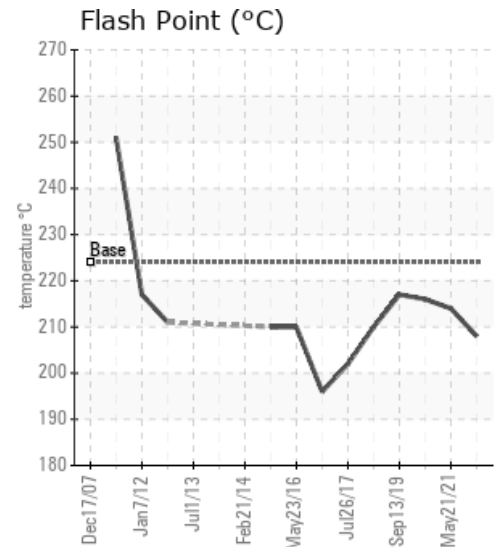
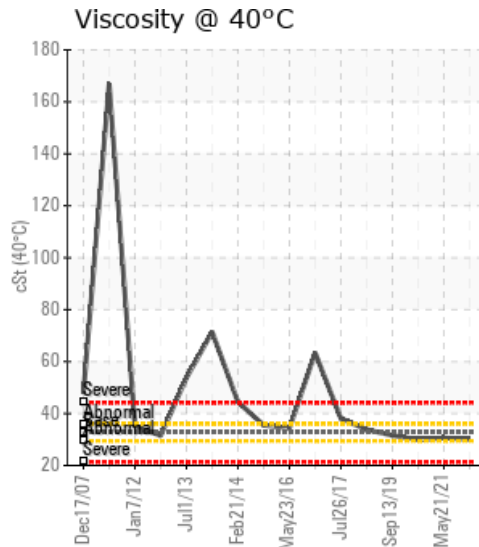
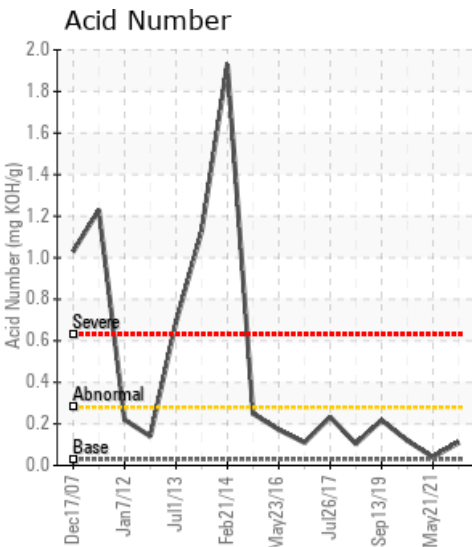
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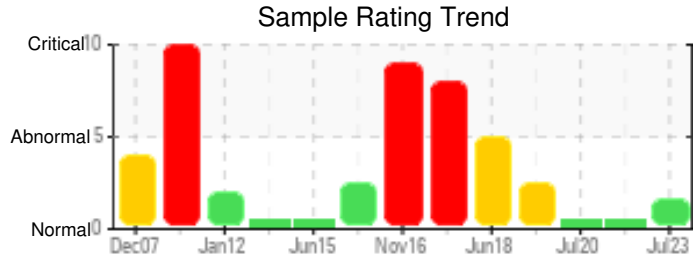
Customer: PTRHTF10037	System Information	Sample Information
CERTAINTEED ROOFING 200 SIERRA DR PEACHTREE CITY, GA 30269 US Attn: Ted Thompson Tel: E-Mail: Theodore.w.thompson@saint-gobain.com	System Volume: 400 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: HEATEC	Lab No: 02574346 Analyst: Manny Garcia Sample Date: 07/28/23 Received Date: 08/04/23 Completed: 08/08/23 Manny Garcia manuel.garcia@HFSinclair.com

Recommendation: Please re-submit sample if any maintenance work is completed to reduce the levels of pentane insolubles, otherwise next sample should be submitted in July 2024.

Comments: Pentane insolubles are severely high in this oil sample. All other parameters are in satisfactory condition. This unit had pentane insoluble issues in 2017-'18 and moderate conditions in '19. Besides these high levels of insolubles the oil looks satisfactory.

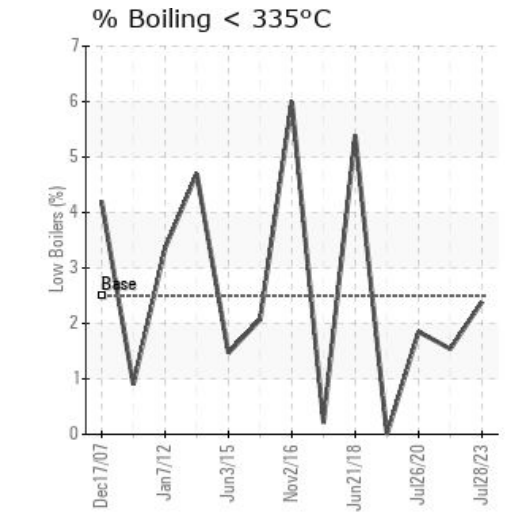
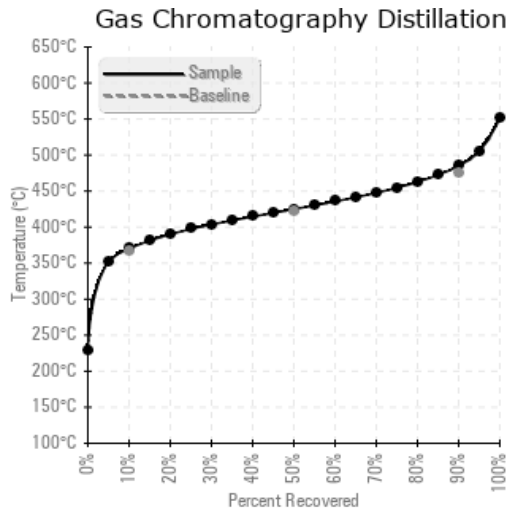
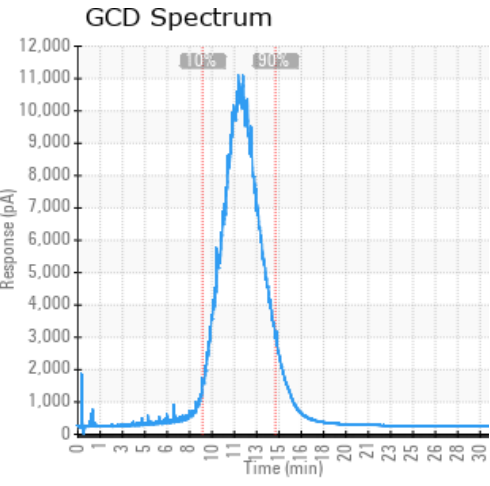
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/28/23	08/04/23	0.0y	main supply pump	406 / 208	23.3	30.1	0.11	0.579	698 / 370	797 / 425	905 / 485	2.39
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
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
07/28/23	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	6	0	45	1
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
<b>Baseline Data</b>			0	0						0		0	0						0				270	

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



Historical Comments	
05/21/21	Sample is Suitable for continued use. Please continue operation and re-submit sample in June 2022. 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.
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.

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