

[06-12-044-13W5] H-1611

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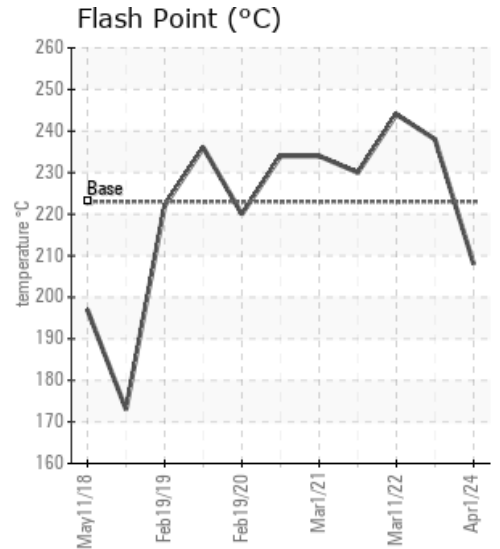
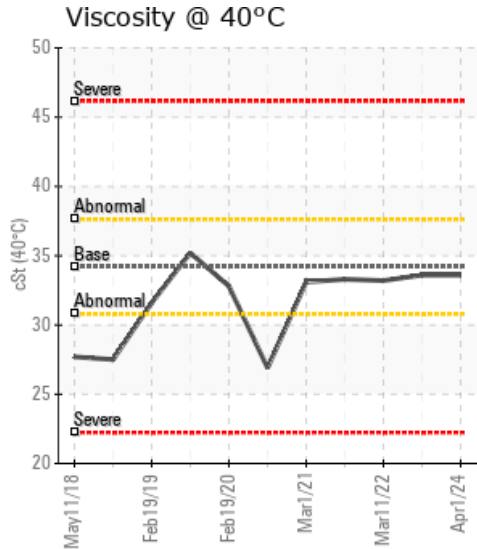
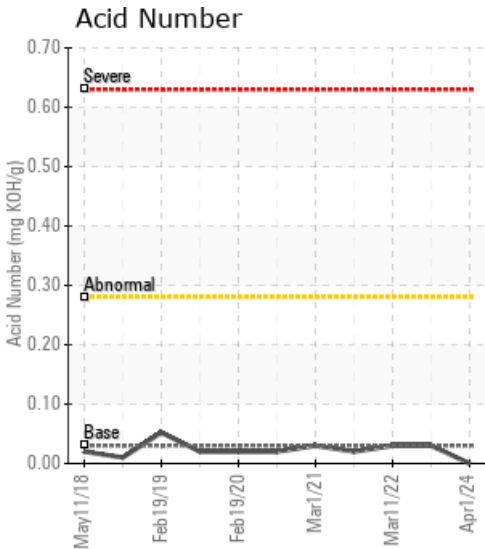
System Information
 System Volume: 0 ltr
 Bulk Operating Temp: 383F / 195C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: HEAT TECH

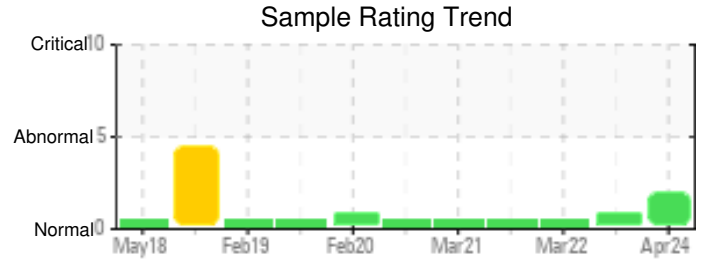
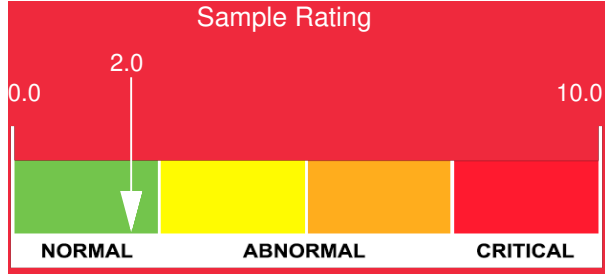
Sample Information
 Lab No: 02626500
 Analyst: Lyle Dach
 Sample Date: 04/01/24
 Received Date: 04/03/24
 Completed: 04/10/24
 Lyle Dach
 lyle.dach@HFSinclair.com

Recommendation: Advise check for source of calcium entering the thermal fluid, was sample container exposed to calcium? The fluid is suitable for further service. Resample in 6 months.

Comments: Calcium ppm levels are abnormally high. (GCD) 90% Distillation Point is marginally high.

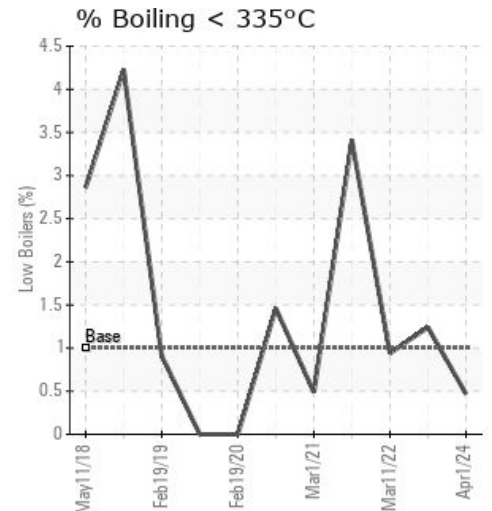
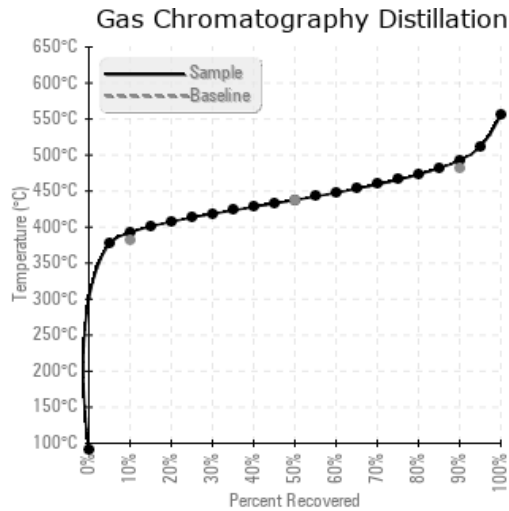
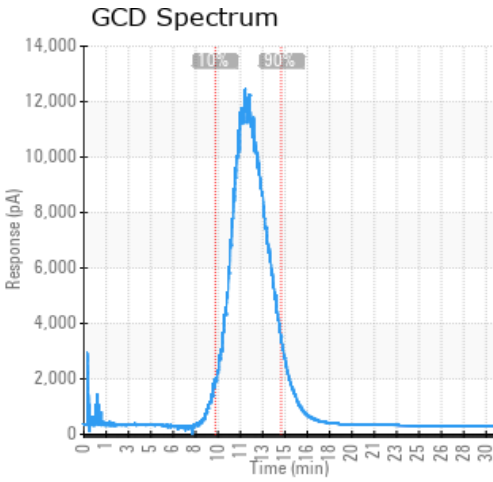
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/01/24	04/03/24	0.0y	pump discharge	406 / 208	5	33.6	0.00	0.280	738 / 392	820 / 438	919 / 493	0.47
03/14/23	03/20/23	8.5y	5 way	460 / 238	37.7	33.6	0.03	0.037	733 / 390	818 / 437	919 / 493	1.24
03/11/22	03/22/22	7.5y	5 way	471 / 244	17.1	33.2	0.03	0.018	734 / 390	818 / 437	918 / 492	0.94
09/08/21	09/14/21	7.0y		446 / 230	0.00	33.3	0.02	0.038	696 / 369	786 / 419	913 / 489	3.41
03/01/21	03/08/21	6.5y	5 WAY	453 / 234	4.6	33.1	0.03	0.080	737 / 392	819 / 437	919 / 493	0.49
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
04/01/24	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146	0	1	2
03/14/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/11/22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
09/08/21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/01/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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



Historical Comments	
03/14/23	Fluid looks to be in good condition and would be suitable for continued use. The 90% distillation point is slightly high, ensure blanket gas is functioning properly. Resample in 12 months. (GCD) 90% Distillation Point is marginally high.
03/11/22	Sample results indicate that the fluid is in very good condition and is suitable for continued service. Resample in 12 months.
09/08/21	Sample appears to be in good condition, Total acid and flash point are good and GCD is in the normal range. Resample in 6 months.
03/01/21	This oil is in good condition and good for continued use. Insolubles are low, GCD is good, flash point is high, Acid Number is low and Viscosity is on spec. Resample in 6 months.

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