

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

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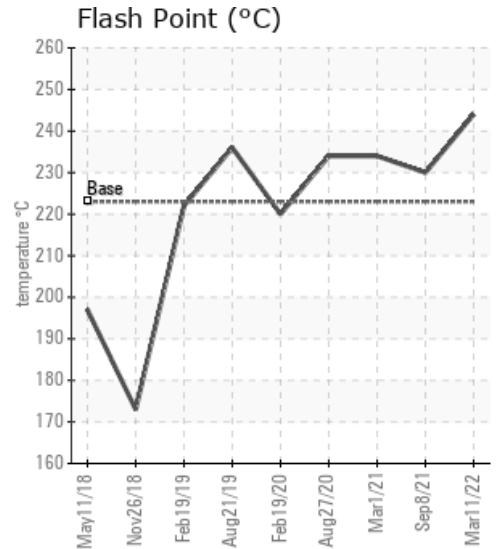
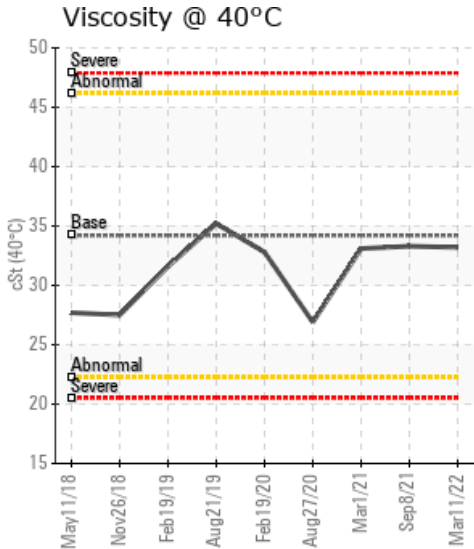
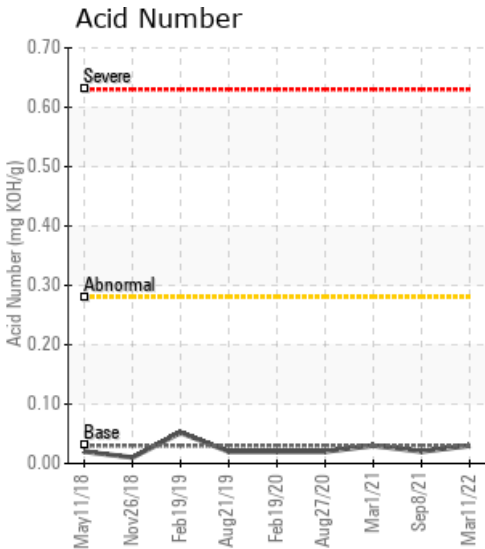
System Information
 System Volume: 0 ltr
 Bulk Operating Temp: 383F / 195C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: HEAT TECH

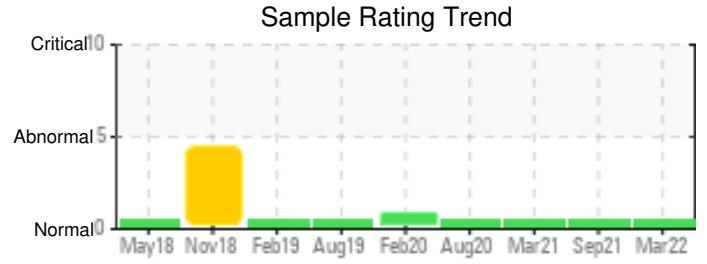
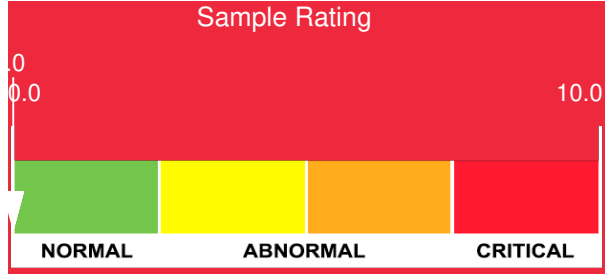
Sample Information
 Lab No: 02478652
 Analyst: Lyle Dach
 Sample Date: 03/11/22
 Received Date: 03/22/22
 Completed: 03/28/22
 Lyle Dach
 lyle.dach@hollyfrontier.com

Recommendation: Sample results indicate that the fluid is in very good condition and is suitable for continued service. Resample in 12 months.

Comments:

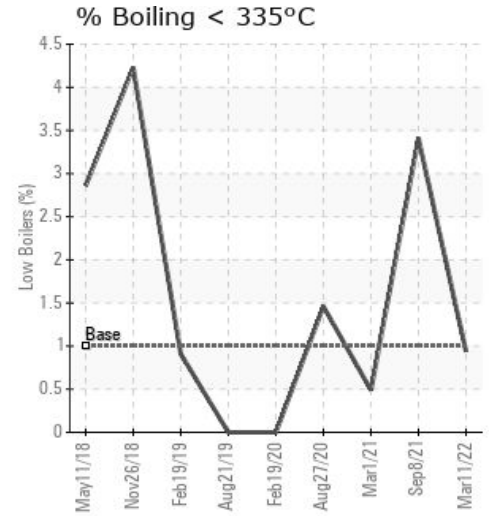
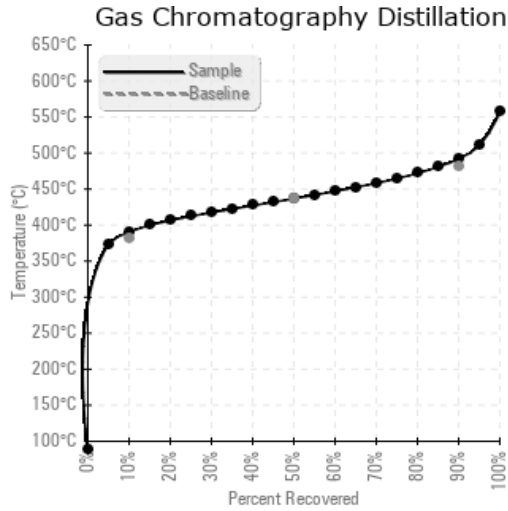
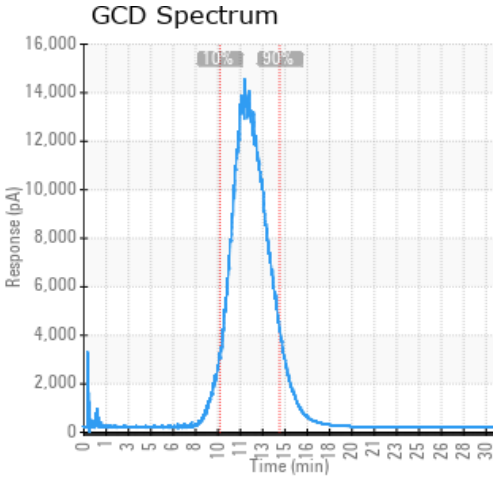
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/11/22	03/22/22	7.5y	5 way	471 / 244	17.1	33.2	0.03	0.018	734 / 390	818 / 437	918 / 492	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
08/27/20	09/03/20	5.5y		453 / 234	1.5	26.9	0.02	0.028	722 / 384	805 / 430	918 / 492	1.46
02/19/20	02/21/20	4.5y	5 WAY METER	428 / 220	0.00	32.8	0.020	0.079	708 / 376	786 / 419	881 / 472	0.00
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	
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	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	0
08/27/20	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
02/19/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	
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.
08/27/20	Sample results show that fluid is still good condition. GCD looks good, Pentane Insolubles are low and Flash Point is high. Resample in 6 months.
02/19/20	GCD @ 90% is marginally low. Lighter ends should be vented off the system at regular intervals as good fluid maintenance practice. This should get rid of the low boilers in the system. Resample in 6 months. (GCD) 90% Distillation Point is marginally low.

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