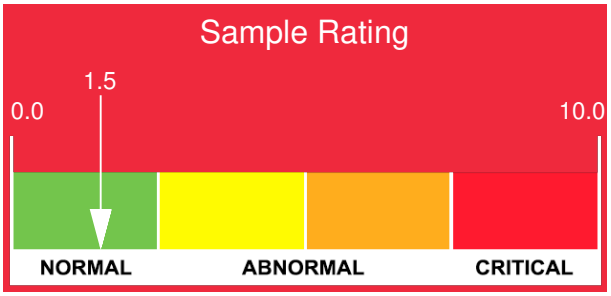
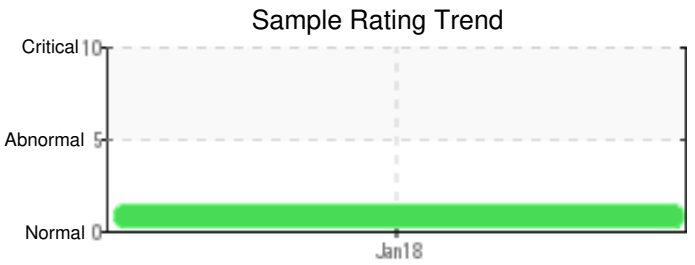




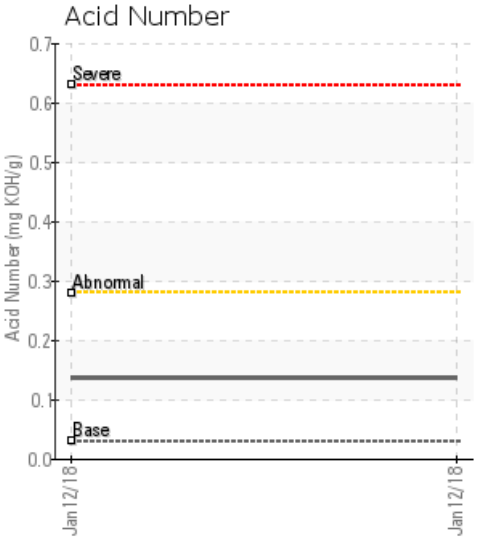
HEAT TRANSFER FLUID

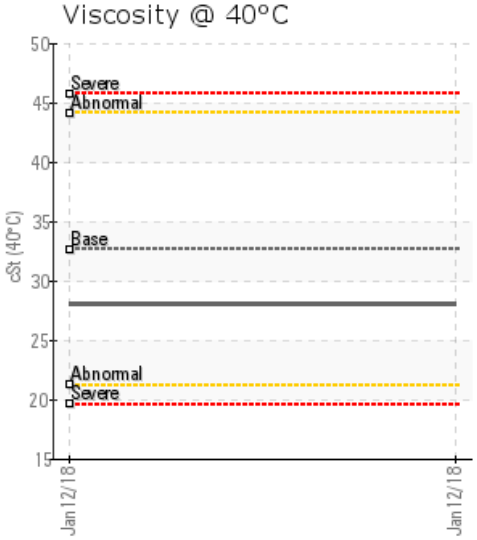
Customer: PTRHTF30110	System Information	Sample Information
HP POLYMERS LTD 32 KERR CRESCENT PUSLINCH, ON N0B 2J0 Canada Attn: Joan Polena Tel: (519)826-0374 E-Mail: jpolena@hppolymers.com	System Volume: 1000 ltr Bulk Operating Temp: 572F / 300C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: PHOENIX	Lab No: 02192815 Analyst: Adam Koscielak Sample Date: 01/12/18 Received Date: 01/16/18 Completed: 01/19/18 To discuss this report contact Adam Koscielak at 905-331-1323

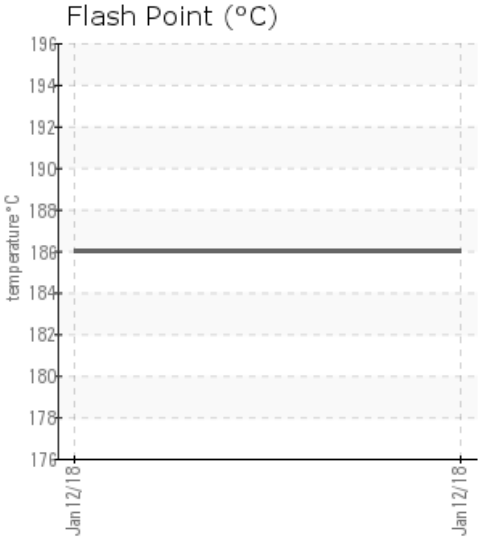
Recommendation: Viscosity of the Calflo AF sample is slightly lower, and the flash point has been reduced slightly. Percentage of low boiling material, % <335°C is approaching the 2.5%. Recommend venting the expansion tank if possible, or replacing some of the Calflo AF in use with fresh product, to raise the flash point and reduce the level of lower boiling components in the system. All other parameters are normal, system is dry and contains a low level of solids.Fluid is suitable for continued use, and recommend another sample be taken after venting or replacement of some Calflo to see if the lower boiling material has been reduced, in 4 - months.

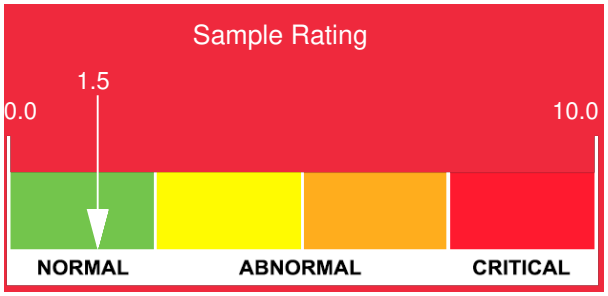
Comments: COC Flash Point is marginally low.

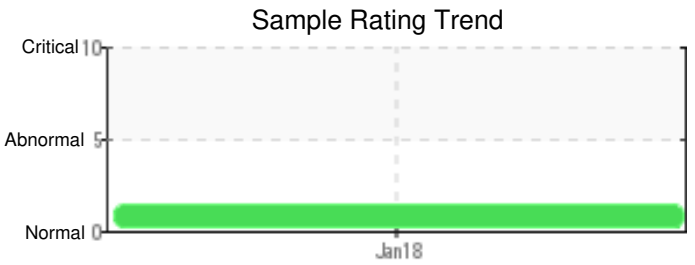
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/12/18	01/16/18	4y		367 / 186	12.9	28.1	0.136	0.019	691 / 366	791 / 422	895 / 480	2.43
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





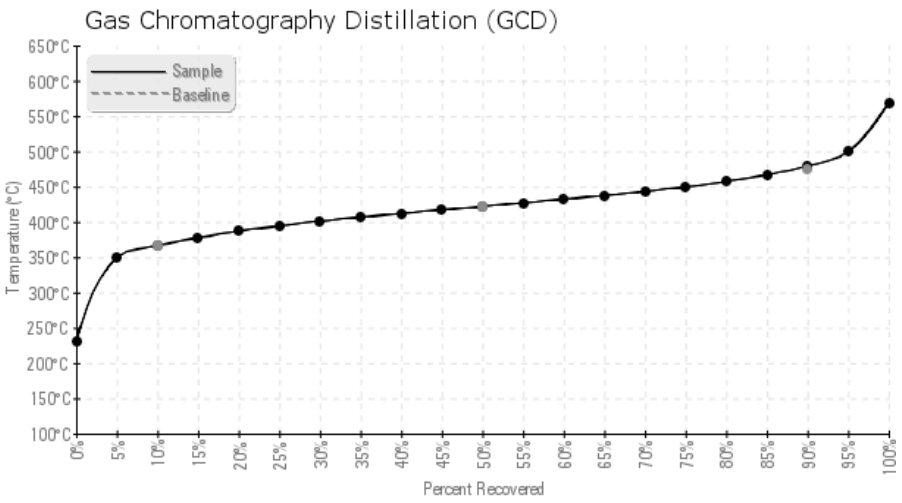


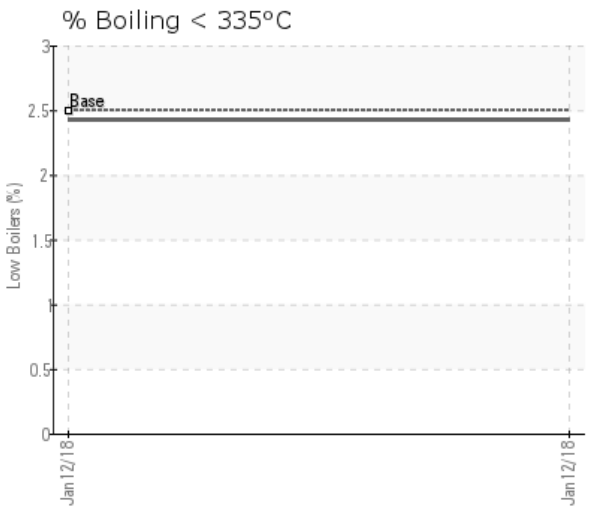




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
01/12/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0
Baseline Data			0	0						0			0	0					0				270	

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





Historical Comments
