

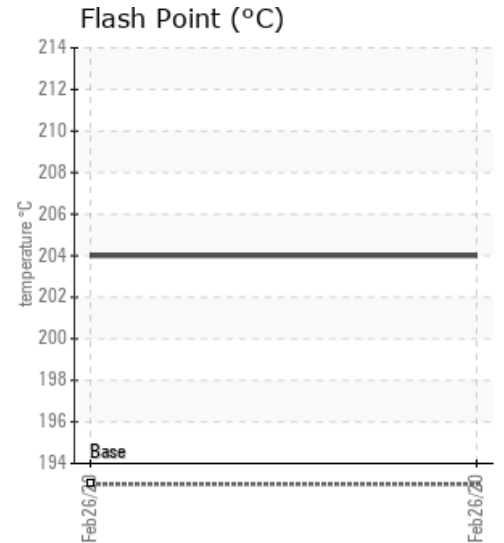
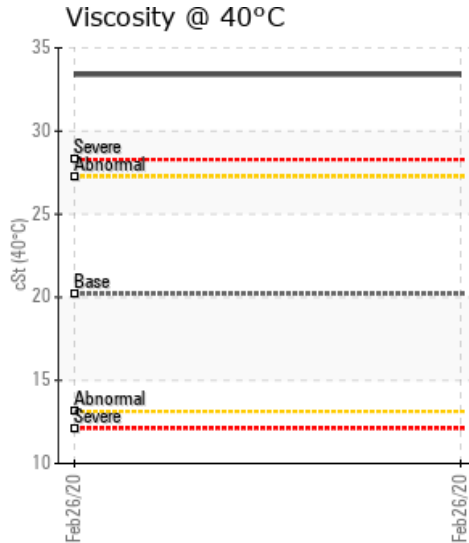
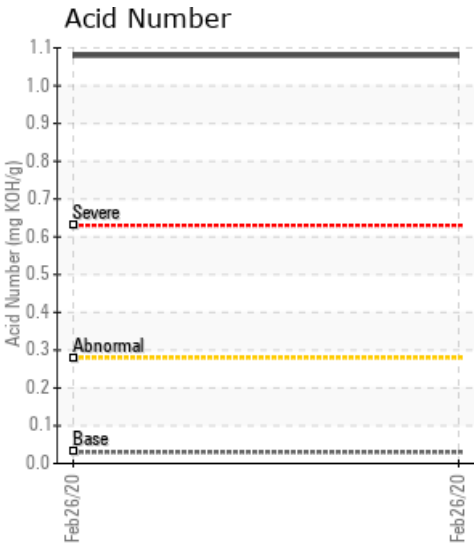
HEATTRANSFER - THE REYNOLDS COMPANY

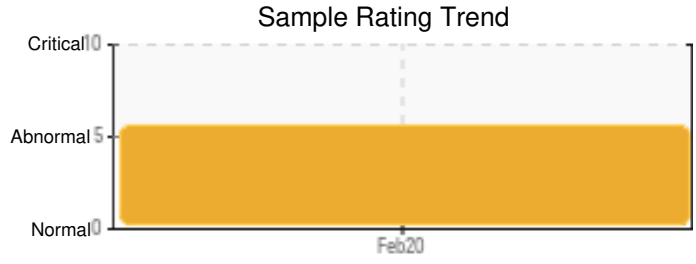
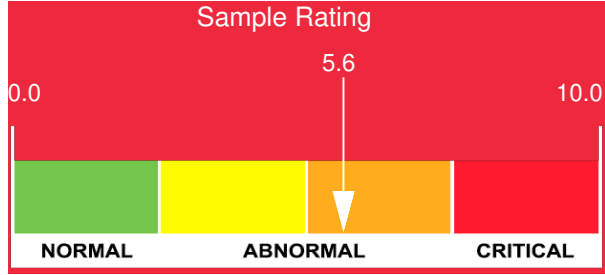
Customer: PTRHTF10230	System Information	Sample Information
REYNOLDS COMPANY 10 GATES ST GREENVILLE, SC 29611 USA Attn: Tel: E-Mail:	System Volume: 1500 gal Bulk Operating Temp: 435F / 224C Heating Source: Blanket: Fluid: MOBIL MOBILTHERM 603 Make: FULTON	Lab No: 02341967 Analyst: Manny Garcia Sample Date: 02/26/20 Received Date: 03/06/20 Completed: 03/12/20 Manny Garcia manuel.garcia@petrocanadalsp.com

Recommendation: This fluid appears to have reached its useful life and should be considered for a fluid change, flush and fill with Petro-Canada Petrotherm or Calflo AF fluids. If the system efficiencies are compromised (carbon inside the elements), the system should be 'cleaned', but only if reaching ultimate temperature ranges take more time than required.

Comments: Acid Number (AN) is severely high. Visc @ 40°C is severely high at 33.4 when by design the fluid is a 20.2 Cst @ 40°C. Pentane Insolubles levels are severely high. Very light white metal & debris found in fluid with .2% emulsified water.

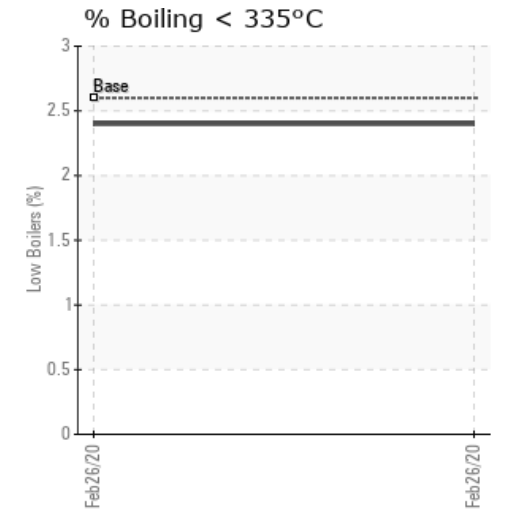
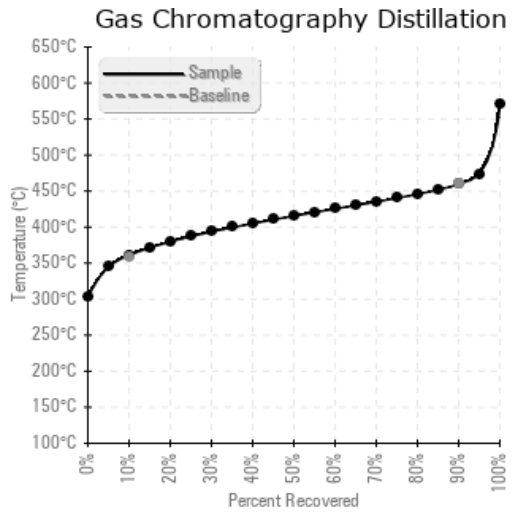
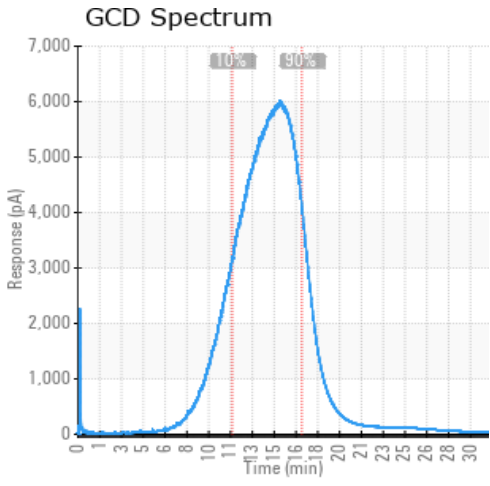
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/26/20	03/06/20	20y	PUMP SUCTION	399 / 204	70.8	33.4	1.08	2.99	681 / 361	780 / 416	859 / 460	2.40
Baseline Data				379 / 193		20.2	0.03		676 / 358		858 / 459	2.6





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
02/26/20	24	0	0	0	0	0	1	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

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.