

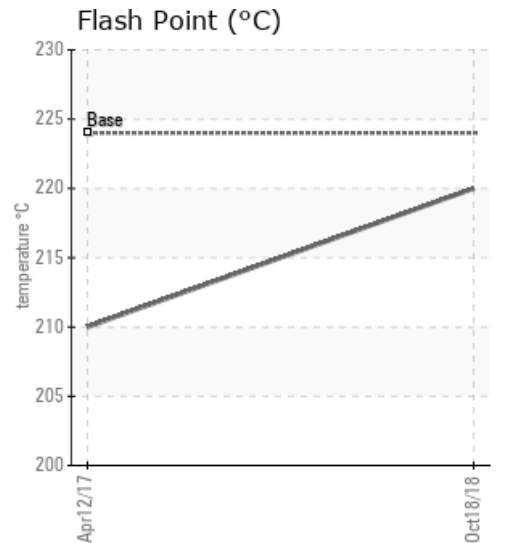
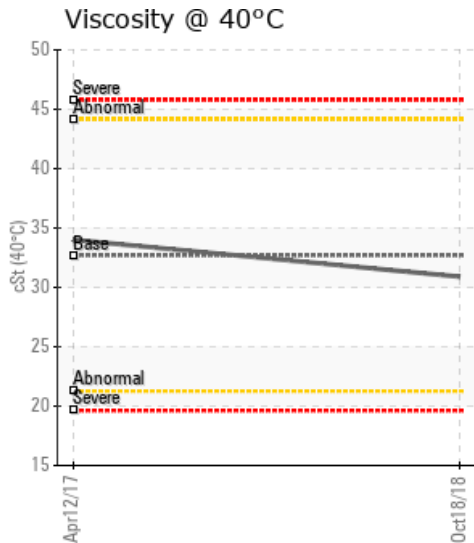
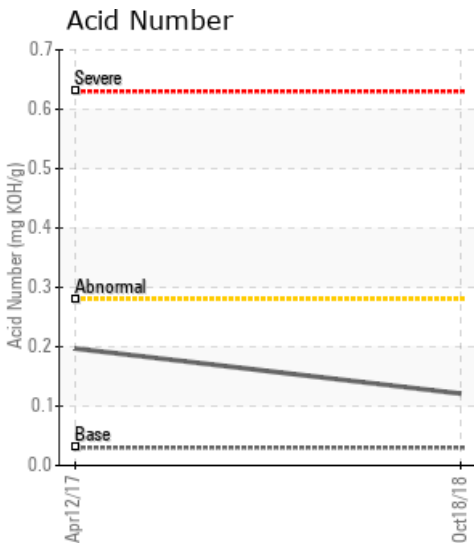
TK55100

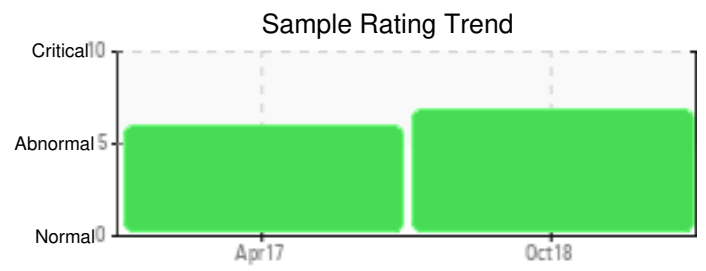
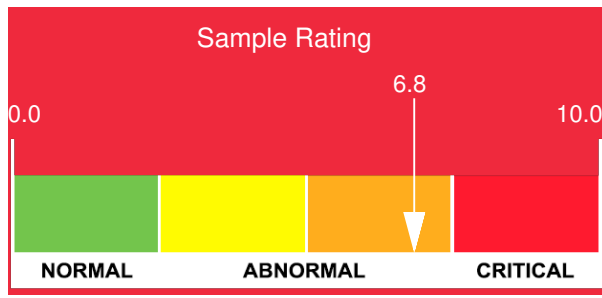
Customer: PTRHTF10150	System Information	Sample Information
PMC ORGANOMETALLIX 2316 HIGHLAND AVE CARROLLTON, KY 41008 USA Attn: ARMIN GHAZIPOUR Tel: (502)732-4411 E-Mail: armin.ghazipour@pmc-group.com	System Volume: 0 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02254926 Analyst: Joe Goecke Sample Date: 10/18/18 Received Date: 12/03/18 Completed: 12/10/18

Recommendation: Iron level is elevated. May need to add filtration to remove the iron. Other parameters look okay. Continue to us and resample in 6 months.

Comments: Iron ppm levels are abnormal. Tin ppm levels are noted.

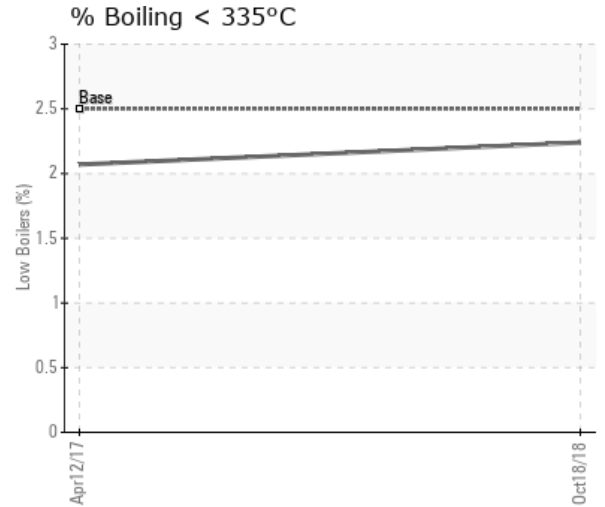
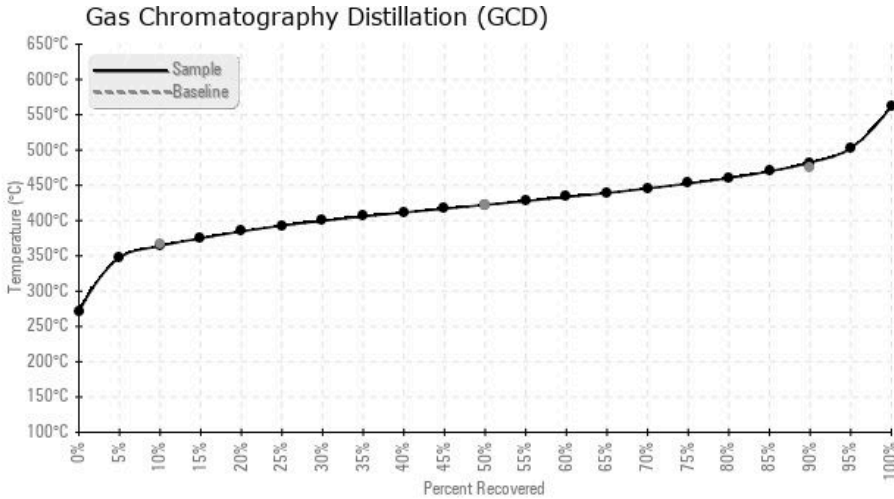
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/18/18	12/03/18	5y		428 / 220	35.2	30.9	0.121	0.331	687 / 364	792 / 422	900 / 482	2.24
04/12/17	06/07/17	10y		410 / 210	40.8	34.0	0.197	0.187	693 / 367	803 / 429	913 / 490	2.07
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
10/18/18	282	0	0	0	0	0	48	0	0	0	2	2	20	0	0	0	2	0	0	0	0	0	125	1
04/12/17	173	0	0	0	0	0	62	0	0	0	0	2	0	0	0	0	2	0	0	0	11	5	74	1
Baseline Data			0	0							0		0	0					0				270	

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



Historical Comments

04/12/17	Considering we do not know the age of this system the oil looks pretty good. The viscosity and flash points are within normal levels and the low boilers are not an issue. There is some wear metals in the system and as noted the Tin is high which could cause additional wear. But since we do not have history we do not know how long this has been high. Other than that the system is suitable for further use. To get on a good monitoring program I recommend cleaning and flushing the system within the next 6-12 months then take samples every 6 months for 18 months then yearly after that. Tin ppm levels are severe. (GCD) 90% Distillation Point is marginally high.
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