

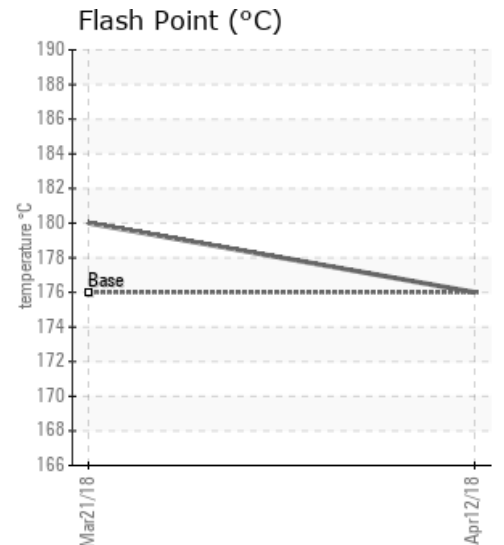
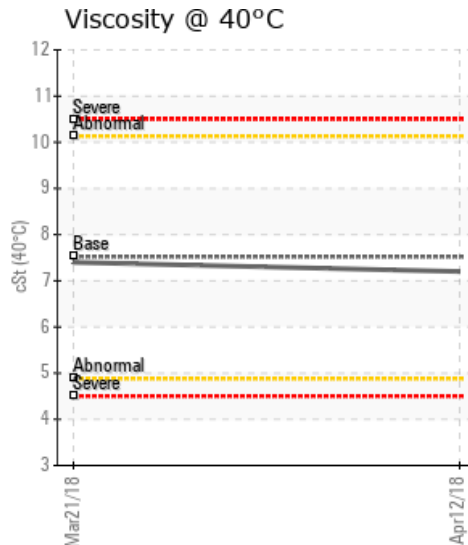
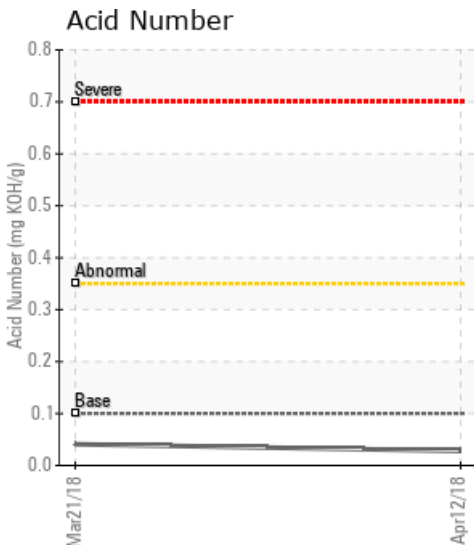
PILOT PLANT

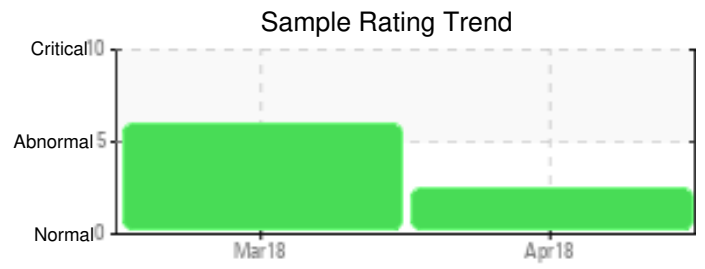
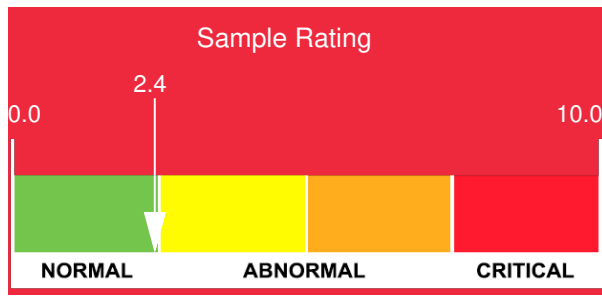
Customer: PTRHTF30113	System Information	Sample Information
WOODLAND BIOFUELS 1086 MODELAND RD SARNIA, ON N7S 6L2 Canada Attn: Jim Power Tel: (519)337-5398 E-Mail: jpower@woodlandbiofuels.com	System Volume: 100 ltr Bulk Operating Temp: 392F / 200C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO LT Make: CCI THERMAL TECH	Lab No: 02210002 Analyst: Lynn Billings Sample Date: 04/12/18 Received Date: 04/13/18 Completed: 04/13/18 To discuss this report contact Lynn Billings at (289)523-0262

Recommendation: Fluid still contains some emulsified water and contaminants. That 2nd peak on the distillation curve is still there. Flush system again and see if you can vacuum out the low spots of the system to remove the contaminant and refill with Calflo LT.

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

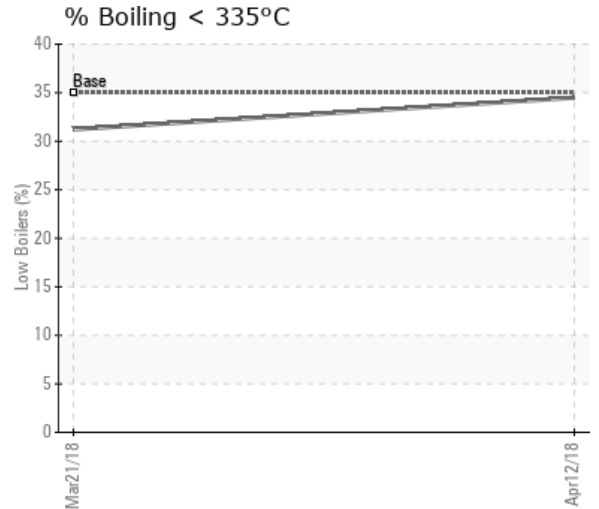
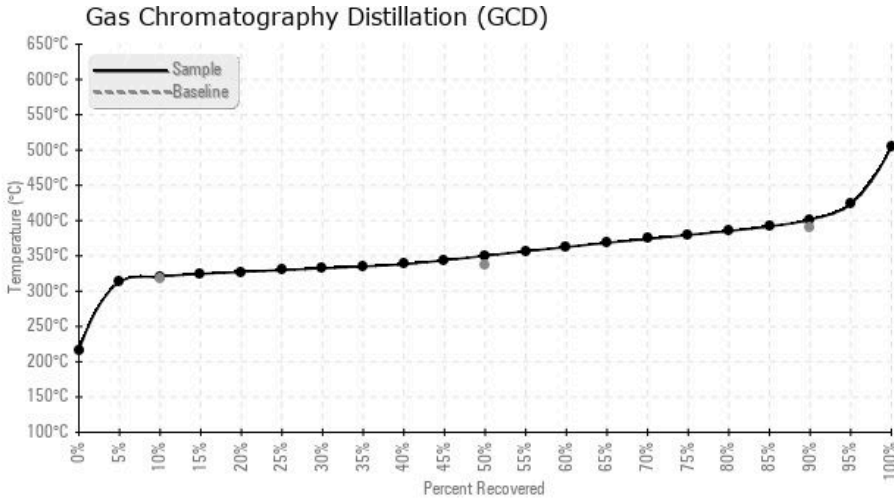
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/12/18	04/13/18	36h		349 / 176	706.1	7.2	0.028	0.014	609 / 321	662 / 350	755 / 401	34.49
03/21/18	03/22/18	100h		356 / 180	1102.1	7.4	0.041	0.105	614 / 323	682 / 361	843 / 451	31.23
Baseline Data				349 / 176		7.52	0.1		604 / 318	640 / 338	734 / 390	35.0





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
04/12/18	1	0	0	0	1	0	0	11	0	0	5	0	1	0	0	0	0	0	5	1	11	0	234	0
03/21/18	2	0	0	0	1	0	0	11	0	0	8	1	0	0	0	0	0	0	2	0	11	0	212	0
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

03/21/18	There appears to be a significant amount of water in your HTF system. (approximately 1102 ppm as well as some emulsified water - 0.2%) The GCD graph shows two peaks which indicates contamination of another product. This is why the 50% and 90% distillation values appear to be off. Water contamination levels are severely high. (GCD) 90% Distillation Point is severely high. (GCD) 50% Distillation Point is marginally high.
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