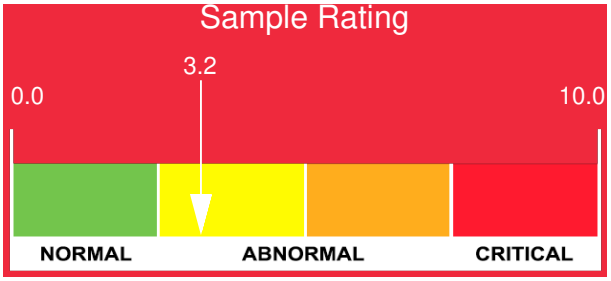
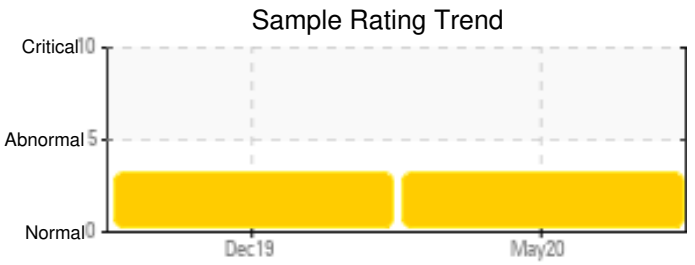




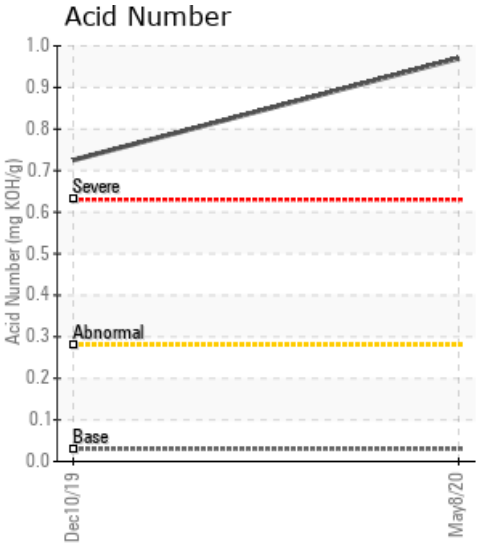
HEATTRANSFER

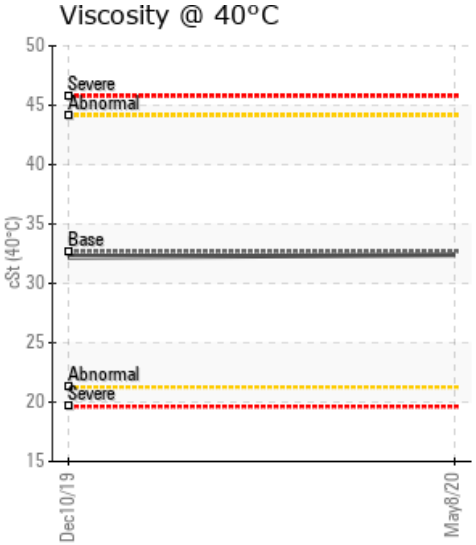
Customer: PTRHTF10223	System Information	Sample Information
JASPER GROUP PLANT #80 501 EAST 6TH ST JASPER, IN 47546 USA Attn: Dave Recker Tel: (812)582-0760 E-Mail: mike@ackoil.com	System Volume: 65 gal Bulk Operating Temp: 360F / 182C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02372766 Analyst: Joe Goecke Sample Date: 05/08/20 Received Date: 08/27/20 Completed: 09/02/20 Joe Goecke Joe.goecke@petrocanadalsp.com

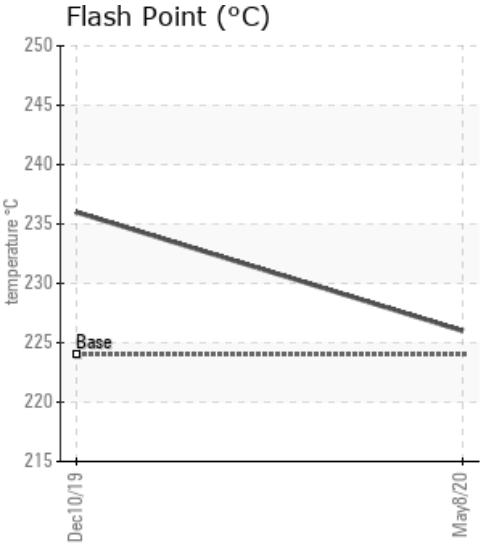
Recommendation: Based on discussions with the supplier/distributor for this system and the size I recommend the following actions: 1) Drain the system currently to remove any residual cleaning fluid and old build up. 2) resample once the system is drained and has been running for 24 hours. and 3) After this sample resample after 1 year, then every 2 years after that.

Comments: Acid Number (AN) is severely high. (GCD) 90% Distillation Point is marginally high.

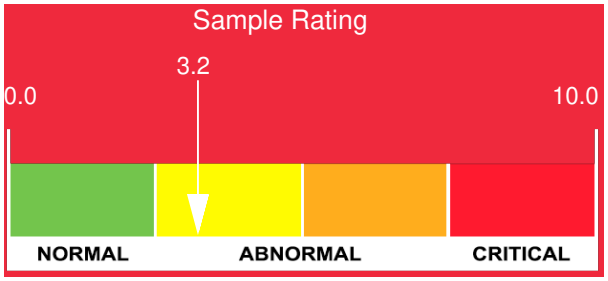
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/08/20	08/27/20	21m		439 / 226	8.4	32.4	0.97	0.048	708 / 376	804 / 429	912 / 489	1.20
12/10/19	12/20/19	16m		457 / 236	1.0	32.2	0.725	0.168	661 / 349	757 / 403	872 / 467	4.39
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

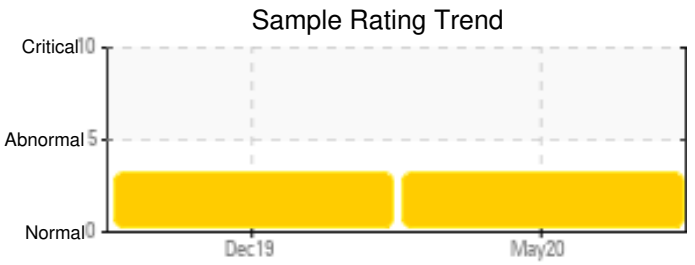






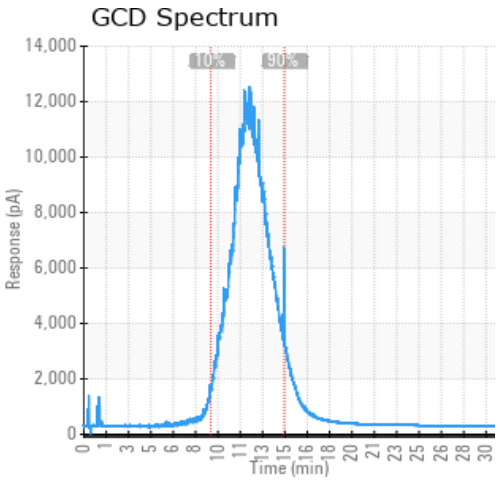
PETRO-CANADA LUBRICANTS

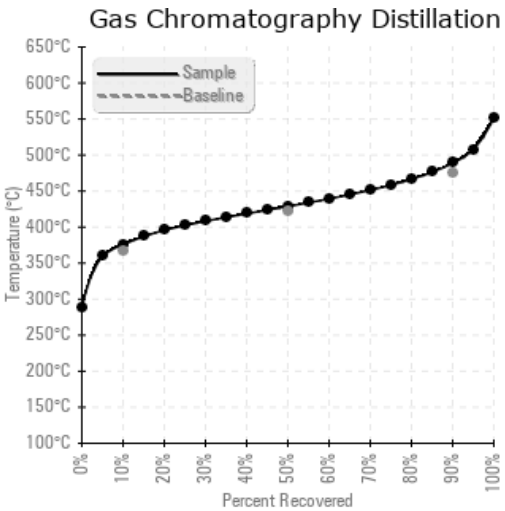


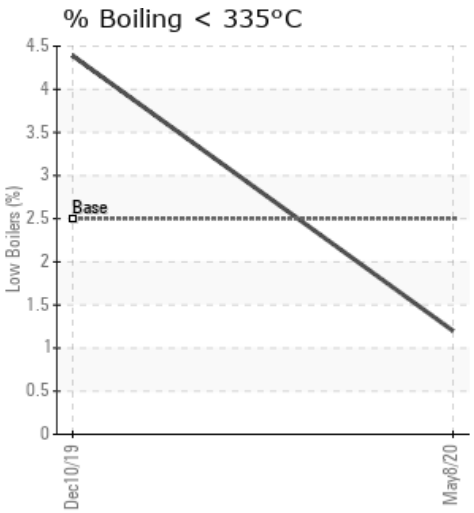


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
05/08/20	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	267	1
12/10/19	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	265	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

12/10/19	This Sample appears to have an increase in acid number but everything else is in great shape. I would suggest continuing to use and resample at half the regular interval to make sure the acid number is not spiking due to contamination or other byproducts of the operation. Acid Number (AN) is severely high.