

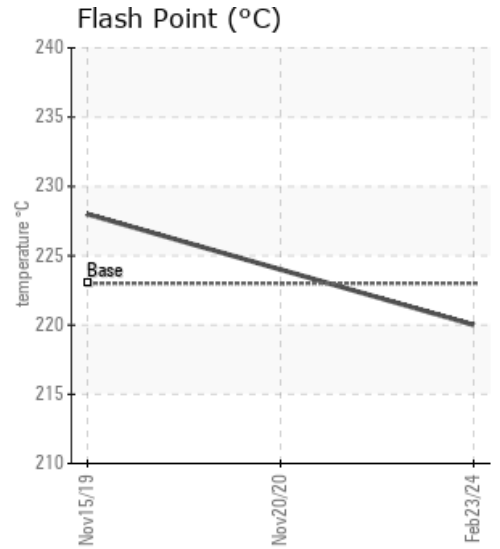
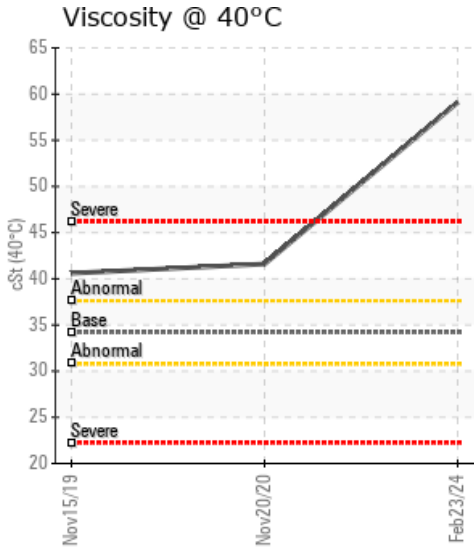
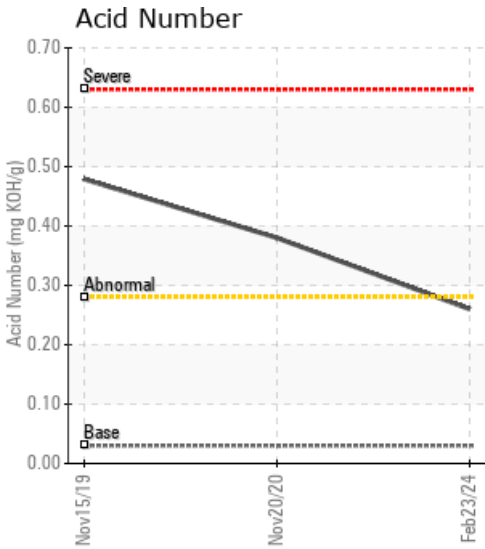
HEATTRANSFER

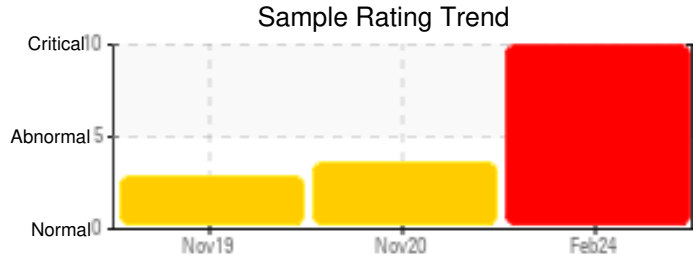
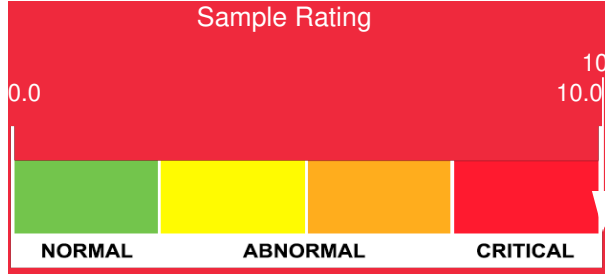
Customer: PTRHTF10226	System Information	Sample Information
LAKESIDE INDUSTRIES 8198 Old Hwy 99 North Rd Burlington, WA 98233 US Attn: Rex Bebee Tel: E-Mail: rex.beebe@lakesideindustries.com	System Volume: 0 gal Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02626269 Analyst: Ron LeBlanc Sample Date: 02/23/24 Received Date: 04/02/24 Completed: 04/16/24 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

Recommendation: The sample indicates the oil has been in service too long. The viscosity has increased significantly. Water concentration is severely high which relates to the sodium level. Pentane insolubles are high indication varnish/sludge forming from oxidation of the oil. The (GCD) 90% Distillation point is elevated indicating thickening of the oil due to varnish/sludge. As acids form the varnish/sludge can damage piping in the system from corrosives in the oil. It is recommended to clean, flush and refill system.

Comments: Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. Pentane Insolubles levels are severely high. Sodium ppm levels are severely high. Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high.

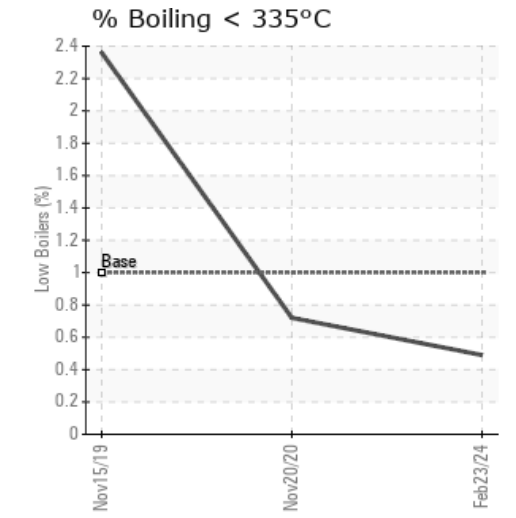
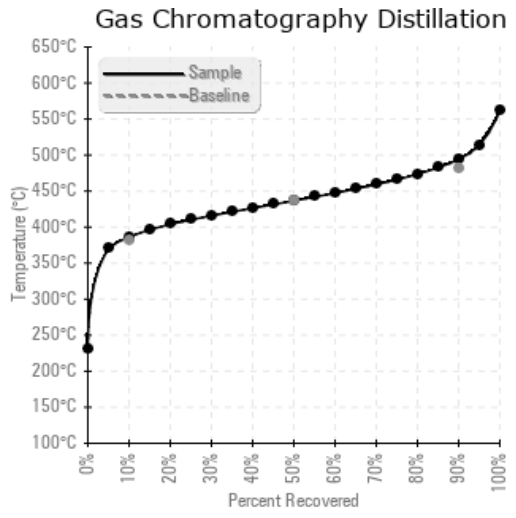
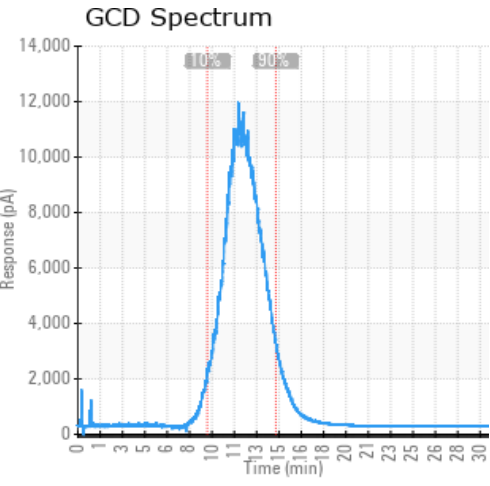
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/23/24	04/02/24	3.0y		428 / 220	8963	59.1	0.26	1.73	727 / 386	818 / 437	922 / 494	0.49
11/20/20	02/08/21	0.0y		435 / 224	42.0	41.6	0.38	0.628	725 / 385	818 / 437	921 / 494	0.72
11/15/19	01/20/20	0.0y		442 / 228	22.8	40.6	0.479	0.658	727 / 386	796 / 424	887 / 475	2.36
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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	
02/23/24	14	0	0	0	1	0	2	0	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0
11/20/20	8	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
11/15/19	4	0	0	0	0	0	0	0	0	0	0	2	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

11/20/20	The (GCD) 90% Distillation Point is high indicating high boilers are above the new fluid levels. These can lead to deposits. Pentane insolubles and water level is high indicating contamination. Check strainer/filter for contamination. Resample in 3 months. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.
11/15/19	AN is slightly elevated. The oil appears to be slightly oxidized. Re-sample in 3 months. Be sure to purge oil from collection point before filling sample container to insure quality of sample. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high.

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.