

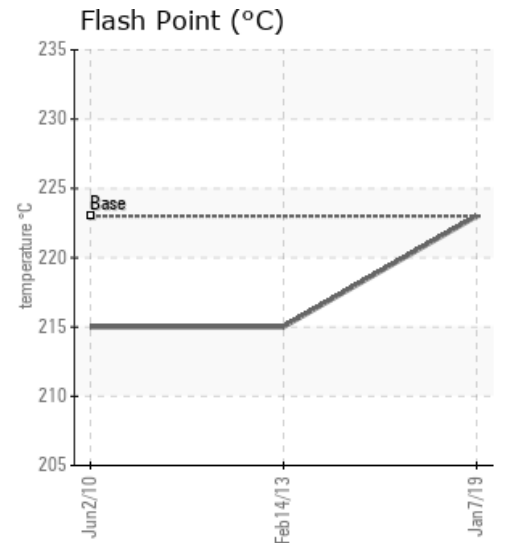
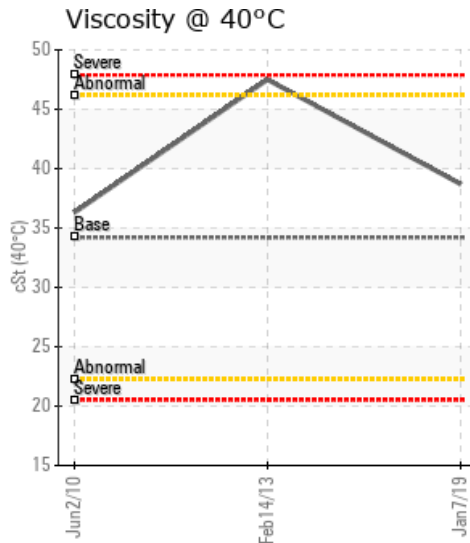
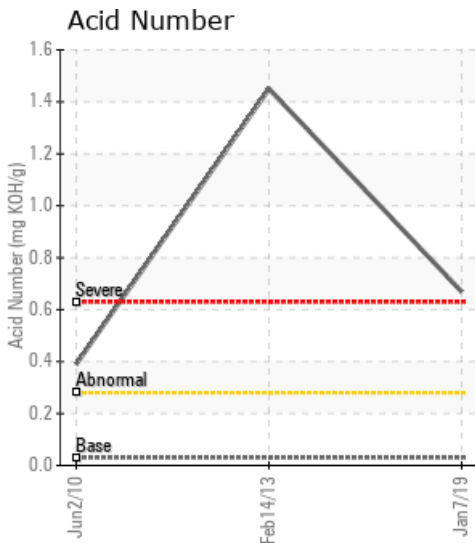
## HEAT TRANSFER SYSTEM

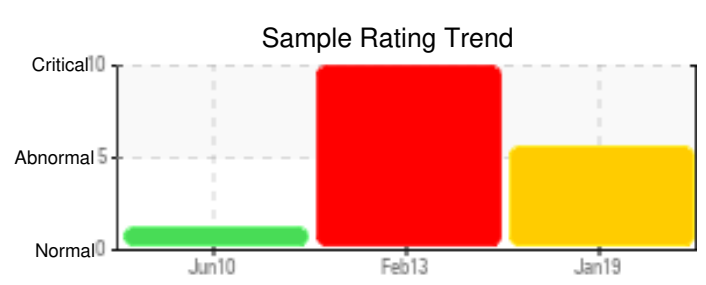
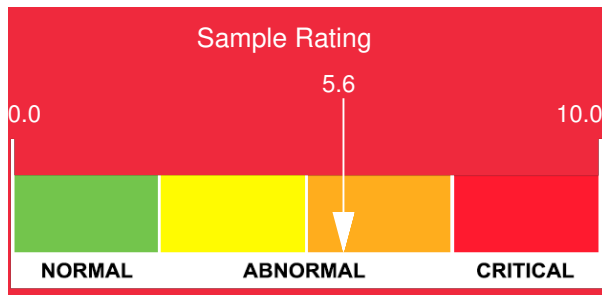
Customer: PTRHTF10044	System Information	Sample Information
LAKESIDE INDUSTRIES 14282 GALAXY WAY MONROE, WA 98272 USA Attn: GARY SWANSON Tel: (360)794-3324 E-Mail: gary.swanson@lakesideind.com	System Volume: 200 gal Bulk Operating Temp: 350F / 177C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: GENCOR	Lab No: 02263185 Analyst: Ron LeBlanc Sample Date: 01/07/19 Received Date: 01/18/19 Completed: 01/23/19

Recommendation: The Pentane insolubles are decreasing from previous sample. Acid Number is decreasing as well from previous sample. Re-sample in 1 month. The service time of the oil needs to be reported as well. 2013 is the previous sample.

Comments: Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. (GCD) 90% Distillation Point is marginally low.

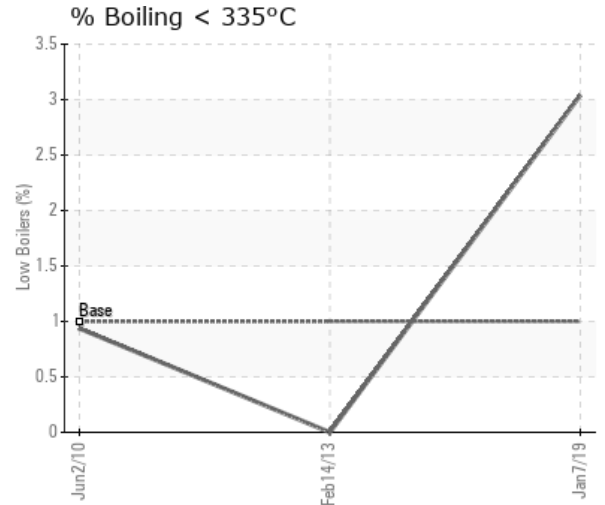
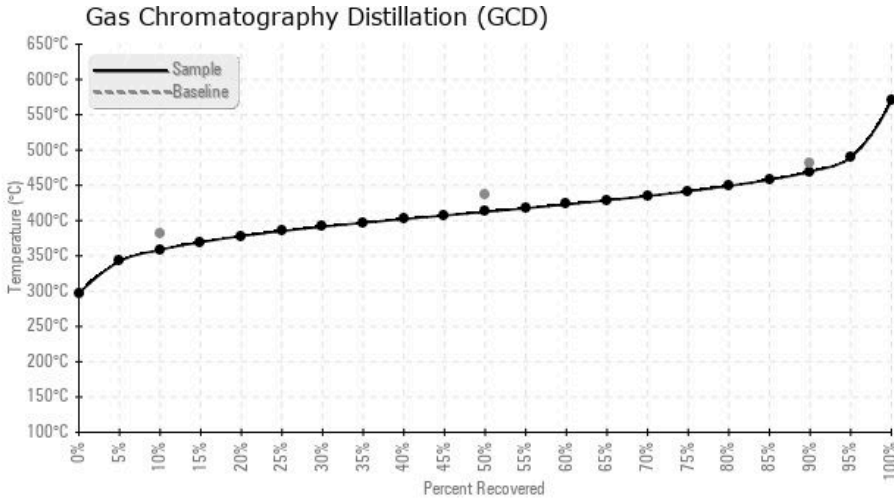
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/07/19	01/18/19	0y		433 / 223	37.9	38.7	0.669	0.747	677 / 359	774 / 412	877 / 469	3.04
02/14/13	04/19/13	4y		419 / 215	192.9	47.5	1.45	5.72	711 / 377	805 / 430	902 / 483	0.00
06/02/10	06/17/10		PETROTHERM	419 / 215	89	36.3	0.39	0.227	711 / 377	801 / 427	890 / 477	0.937
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
01/07/19	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02/14/13	469	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	1	0
06/02/10	28	0	0	0	0	9	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	3	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	
02/14/13	The sample looks bad. High water, solids and iron. The high level of contaminants points to an improperly flushed sample valve. Please thoroughly flush the sample valve with at least 0.5 gal before collecting the next sample. Iron ppm levels are severe. PQ levels are severe. Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. Visc @ 40°C is abnormally high.
06/02/10	The oil acid number is getting high, showing signs of fluid oxidation. We suggest to monitor the fluid condition every 4-6 months to trend the degradation rate

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