

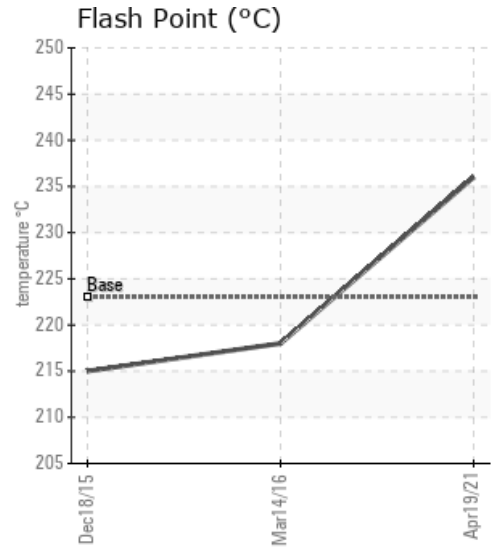
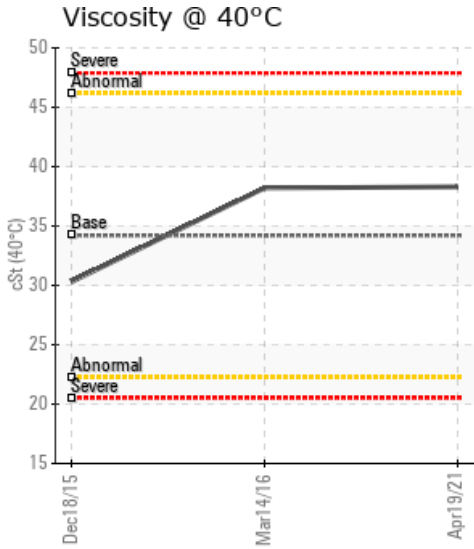
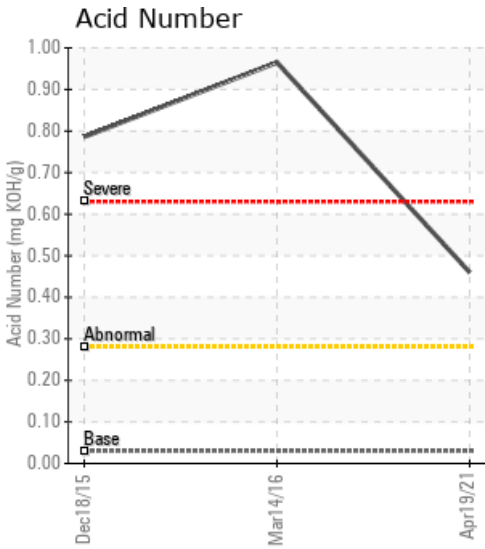
MONROE PLT #060

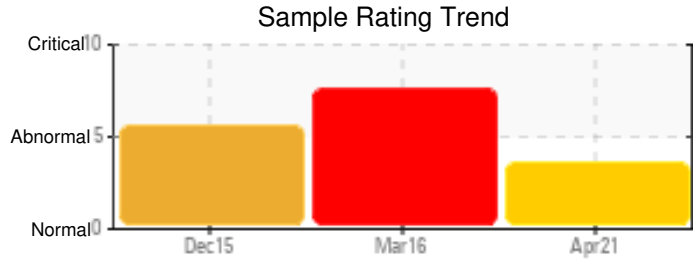
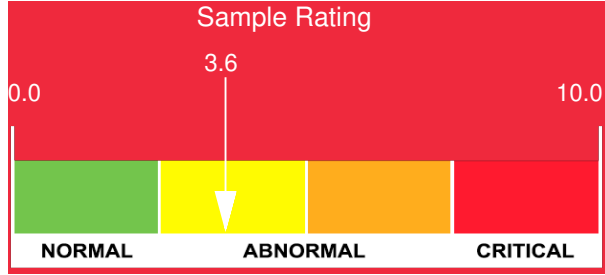
Customer: PTRHTF10044	System Information	Sample Information
LAKESIDE INDUSTRIES 14282 GALAXY WAY MONROE, WA 98272 US Attn: GARY SWANSON Tel: (360)794-3324 E-Mail: gary.swanson@lakesideind.com	System Volume: 300 gal Bulk Operating Temp: 350F / 177C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: CEI ENTERPRISES	Lab No: 02417994 Analyst: Ron LeBlanc Sample Date: 04/19/21 Received Date: 04/29/21 Completed: 05/03/21 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

Recommendation: The oil is very dirty. The Pentane insolubles indicate very dirty oil. Most likely carbon residue as the 90% GDC point is high indicating high boilers. The viscosity is slightly high indication oxidation.

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

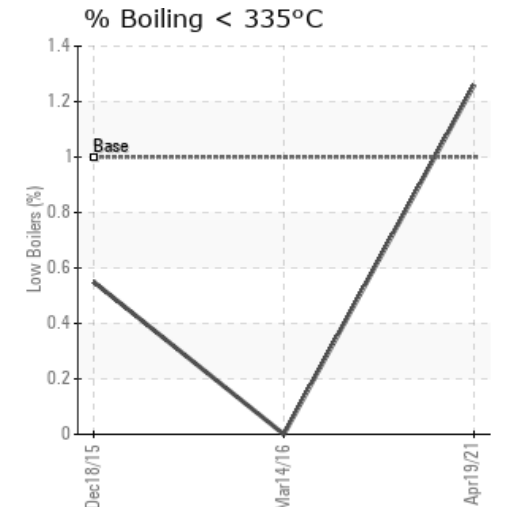
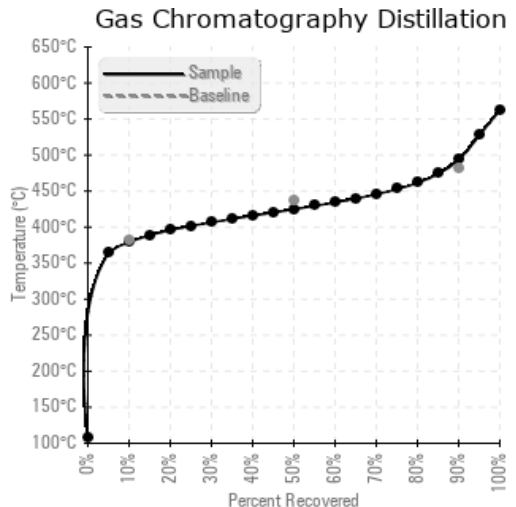
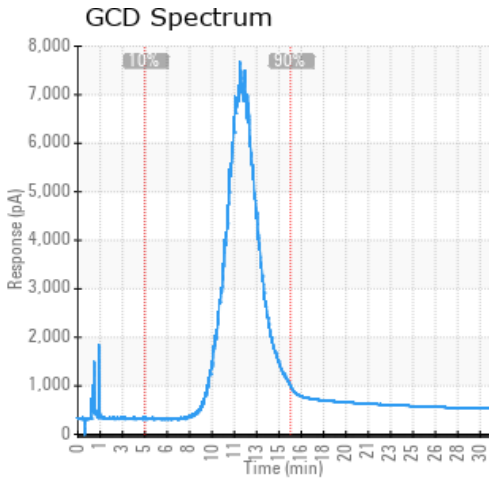
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/19/21	04/29/21	0.4y	New heater 2-15-21	457 / 236	45.9	38.3	0.46	1.05	714 / 379	797 / 425	920 / 493	1.26
03/14/16	03/21/16	7.0y	RETURN TO FILTER	424 / 218	158.2	38.2	0.965	2.22	755 / 402	859 / 459	929 / 498	0.00
12/18/15	12/30/15	7.0y	RETURN TO FILTER	419 / 215	78.4	30.3	0.786	3.06	716 / 380	807 / 431	899 / 482	0.55
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	
04/19/21	27	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	1	2
03/14/16	152	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0
12/18/15	200	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	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	
03/14/16	Acid Number (AN) is severely high. (GCD) 90% Distillation Point is abnormally high. Visc @ 40°C is abnormally high. (GCD) 10% Distillation Point is marginally high. (GCD) 50% Distillation Point is marginally high. Water has increased almost double from last sample. TAN is elevated. Viscosity has increased as well. This can indicate that the sample point was not flushed properly before drawing sample. Purge a reasonable amount of oil from sample port and take another sample. Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. (GCD) 90% Distillation Point is abnormally high. Visc @ 40°C is abnormally high. (GCD) 10% Distillation Point is marginally high. (GCD) 50% Distillation Point is marginally high.
12/18/15	TAN is elevated. Si and Pentane are elevated. Si elevated indicates possibility of process components entering oil. Hours on the oil is not reported. Suggest resample to confirm results. Iron ppm levels are abnormal. Pentane Insolubles levels are severely high. Acid Number (AN) is severely high.

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