

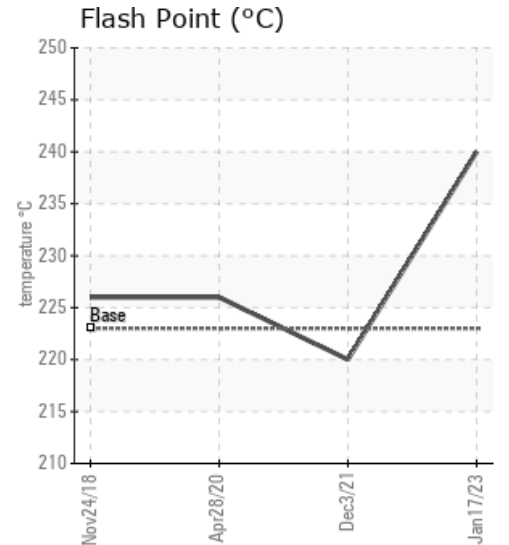
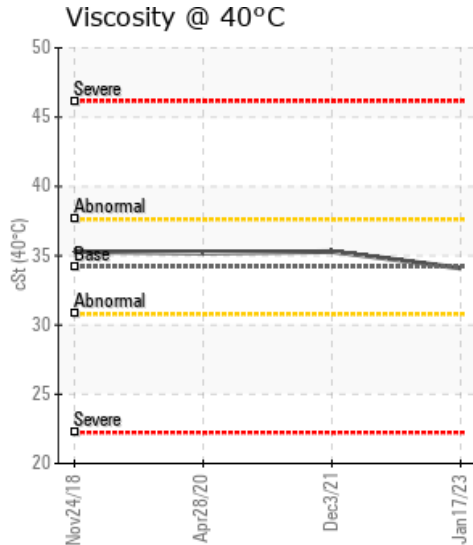
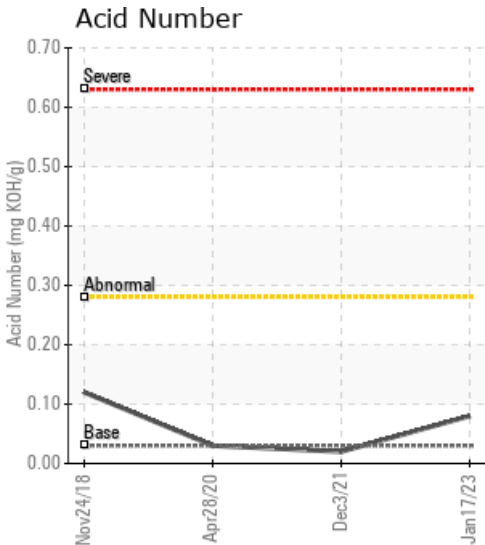
[2-11-080-16W6M] H5500-1 Train 1

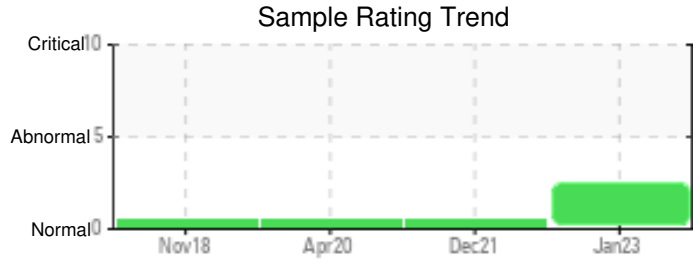
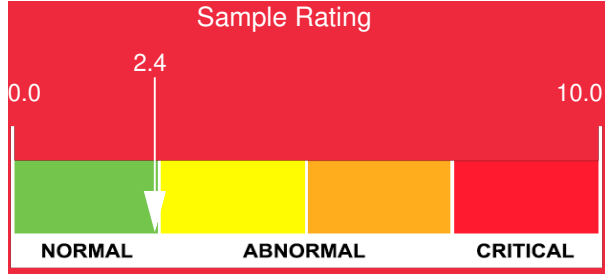
Customer: PTRHTF20156	System Information	Sample Information
TOURMALINE OIL 9920 98a Ave FORT ST. JOHN, BC V1J 1S2 Canada Attn: Brandon Braun Tel: (250)262-5420 E-Mail: Brandon.braun@tourmalineoil.com	System Volume: 15000 ltr Bulk Operating Temp: 345F / 174C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: PETRO TECH	Lab No: 02535799 Analyst: Clinton Buhler Sample Date: 01/17/23 Received Date: 01/26/23 Completed: 01/27/23 Clinton Buhler Clinton.Buhler@HFSinclair.com

Recommendation: Sample results indicate the fluid is in suitable condition for continued service. Please vent off water as steam through the expansion tank if safe to do so. Water can cause premature fluid degradation. Please re-sample in 12 months

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

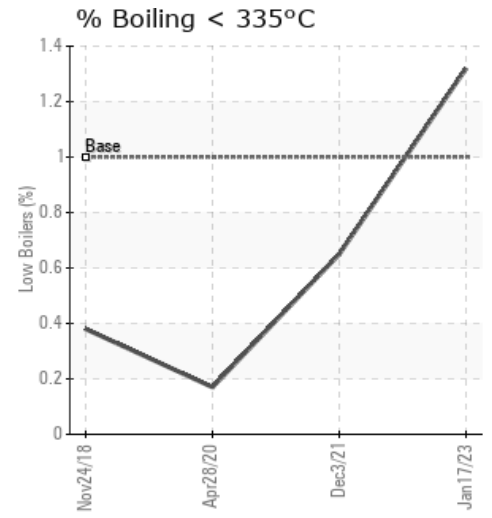
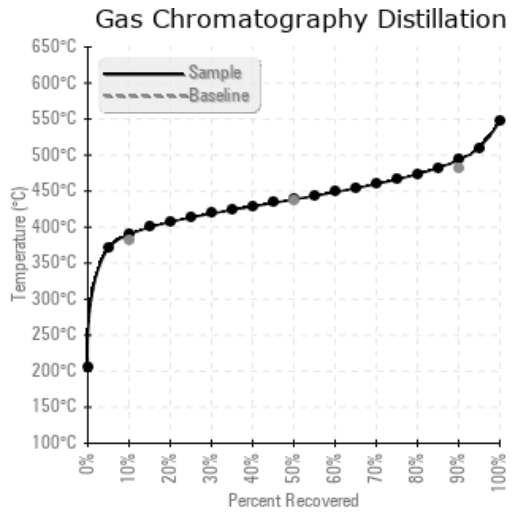
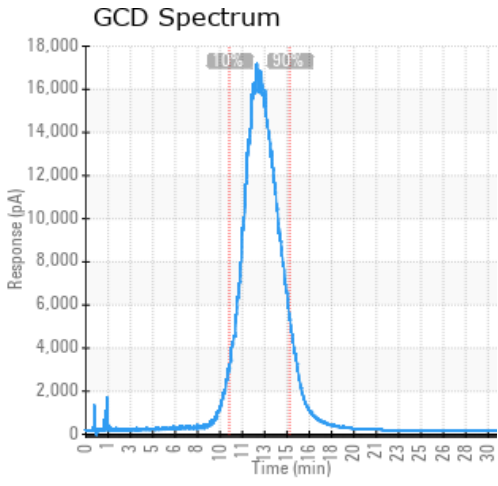
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/17/23	01/26/23	0.0m	HIGH POINT BLEED INL	464 / 240	406.1	34.1	0.08	0.134	733 / 389	821 / 438	920 / 493	1.32
12/03/21	03/10/22	4.0m	Exp tank disch line	428 / 220	235.6	35.3	0.02	0.073	729 / 387	815 / 435	916 / 491	0.65
04/28/20	04/29/20	36.0m	EXPANSION TANK PUMP	439 / 226	301.3	35.2	0.03	0.067	733 / 390	817 / 436	917 / 492	0.17
11/24/18	12/18/18	18.0m		439 / 226	152.0	35.3	0.12	0.045	721 / 383	810 / 432	917 / 492	0.38
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
01/17/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/03/21	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
04/28/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/24/18	0	0	0	0	0	0	0	0	0	0	0	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

12/03/21	Sample results indicate the fluid is in suitable condition for continued service. Please re-sample in 12 months
04/28/20	Sample results indicate that the heat transfer fluid is suitable for continued service. There is 301ppm of water which is not as high as unit 5500-2, but should be monitored. Please ensure sample point and hardware is thoroughly purged before obtaining fluid sample. Please re-sample in 12 months.
11/24/18	The fluid is in excellent condition and suitable for further use. Please re-sample in 6 months.

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