

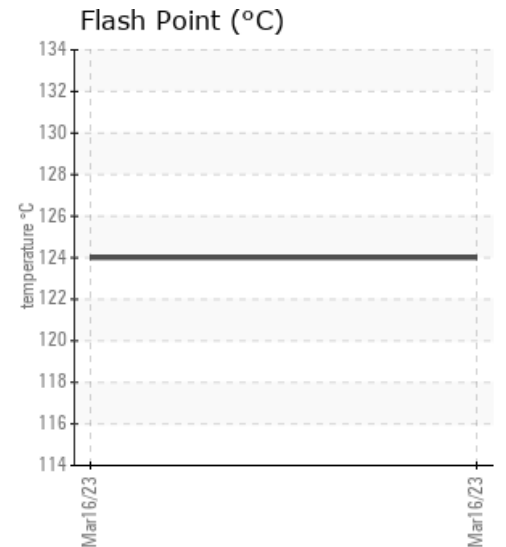
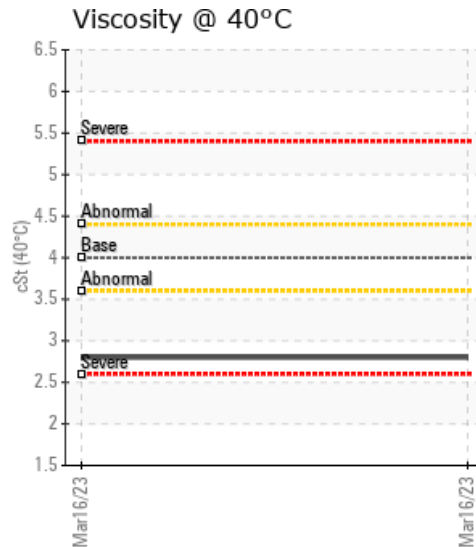
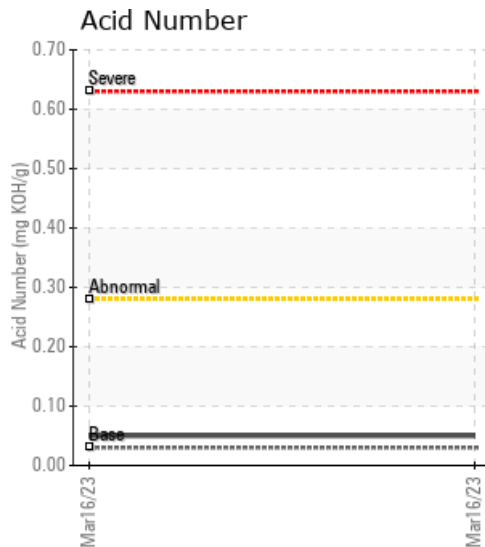
# H-101

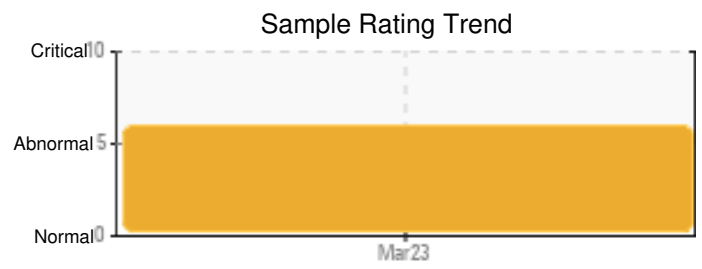
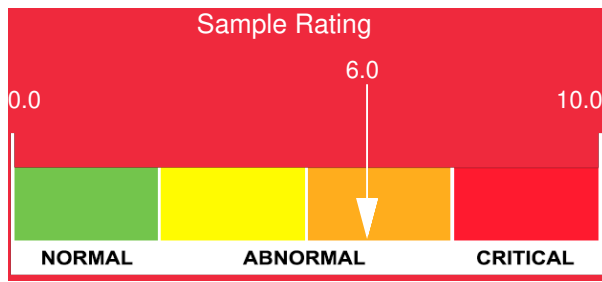
Customer:	System Information	Sample Information
ALTAGAS LTD 10001 29th Ave North West EDMONTON, BC T6N 1A5 CA Attn: Wayne Pipke Tel: (780)975-2042 E-Mail: wayne.pipke@altagas.ca	System Volume: 0 ltr Bulk Operating Temp: 250F / 121C Heating Source: Blanket: Fluid: EASTMAN THERMINOL 59 Make:	Lab No: 02548232 Analyst: Bill Quesnel CLS,OMA II,MLA-III,LLA-I Sample Date: 03/16/23 Received Date: 03/28/23 Completed: 05/31/23 Bill Quesnel CLS,OMA II,MLA-III,LLA-I

Recommendation: The closest match to this product in our extensive heat transfer fluid database (>200 products) is Monsanto Therminol 59. The product appears to have been topped up with 10% of a more standard heat transfer fluid (such as Petro-Canada Petrotherm). The viscosity has dropped from 4.0 cSt to 2.8 cSt which indicates thermal cracking of the fluid. The cracked products have lowered the flash point from 146°C to 124°C and your system is running at 121°C, so caution is advised as this fluid may be a fire hazard. Topping up with a higher viscosity product will not remedy the flash point, and there are likely not light enough ends present that venting the expansion tank would have any beneficial effect. You have not stated the capacity of the system, so I cannot account for financial considerations, but likely it would be in your best interest to replace the system fluid with new unused Monsanto Therminol 59.

Comments: (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is abnormally low. Visc @ 40°C is abnormally low. The COC Flash Point is abnormally low. Auto-ignition Temperature: 405°C (5 sec ignition delay @ 745 mm/Hg).

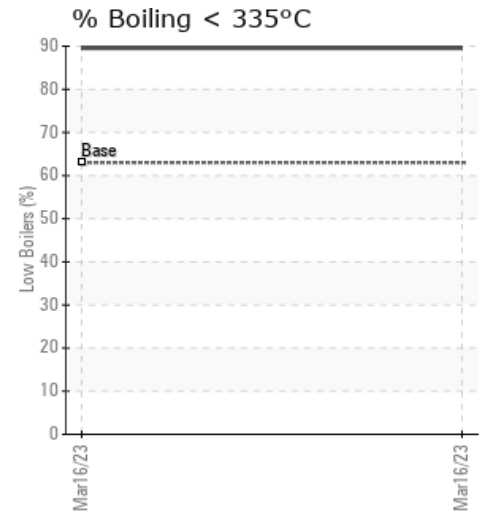
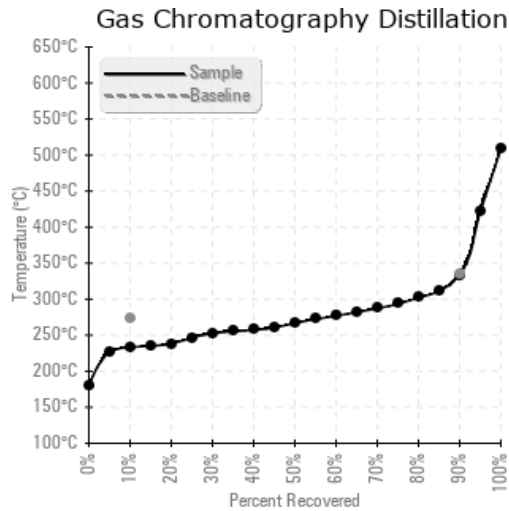
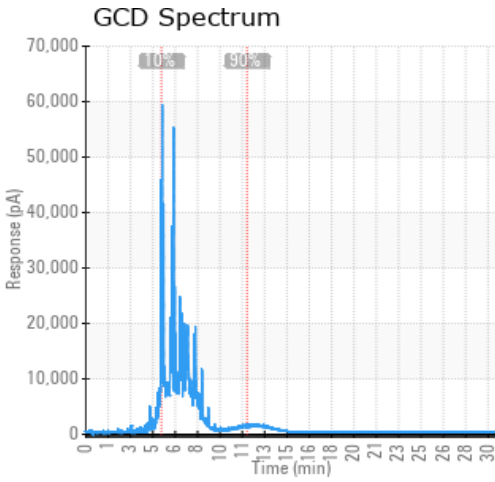
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/16/23	03/28/23	0.0y	P-110 DISCHARGE	255 / 124	69.1	2.8	0.05	0.011	452 / 233	512 / 267	632 / 333	89.58
Baseline Data				295 / 146		4.0	0.03		525 / 274		635 / 335	63.00





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
03/16/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	

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