

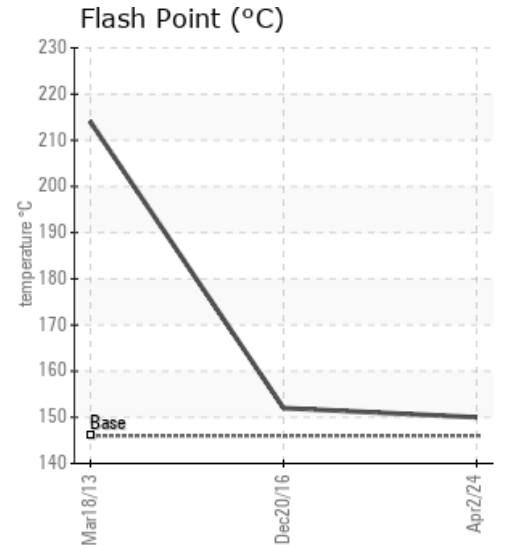
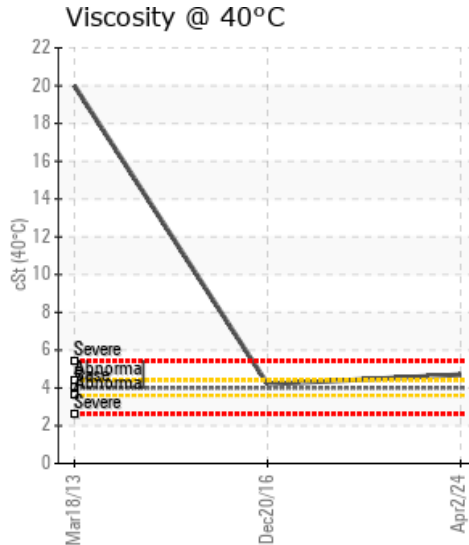
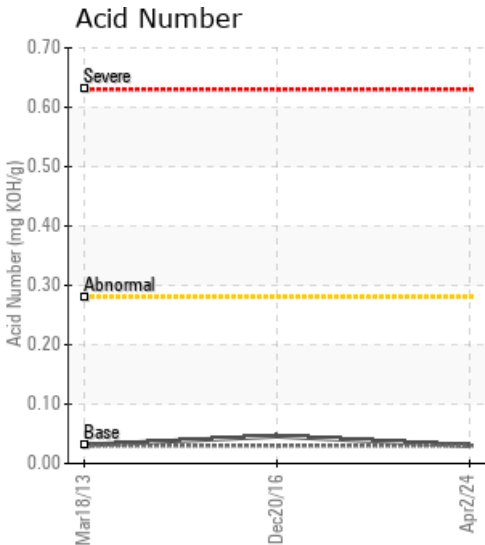
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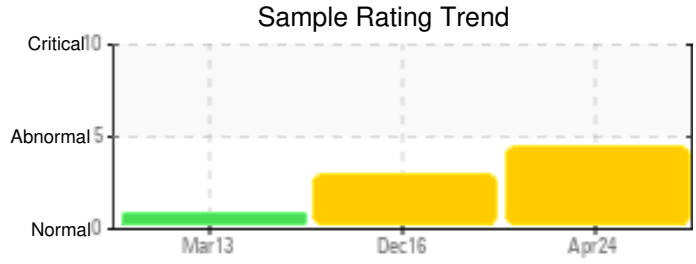
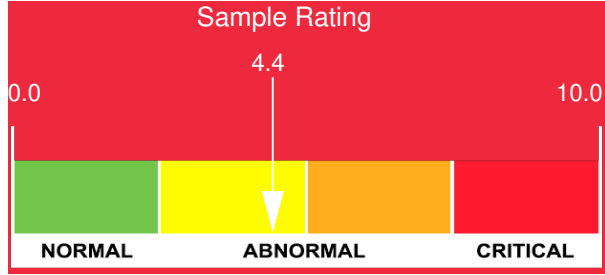
Customer: PTRHTF10011	System Information	Sample Information
G.F.S. CHEMICAL 851 Mckinley Avenue COLUMBUS, OH 43222 US Attn: Jamie Walters Tel: (800)446-4910 E-Mail: jamie@gfschemicals.com	System Volume: 50 gal Bulk Operating Temp: 400F / 204C Heating Source: Blanket: Fluid: EASTMAN THERMINOL 59 Make:	Lab No: 02635907 Analyst: Joe Goecke Sample Date: 04/02/24 Received Date: 05/15/24 Completed: 06/04/24 Joe Goecke joe.goecke@HFSinclair.com

Recommendation: Sample appears to be out of specification for this product. However it is identified as Thermanol 59. I would suggest changing this product based on the data provided.

Comments: (GCD) % < 335°C is severely high. Visc @ 40°C is abnormally high.

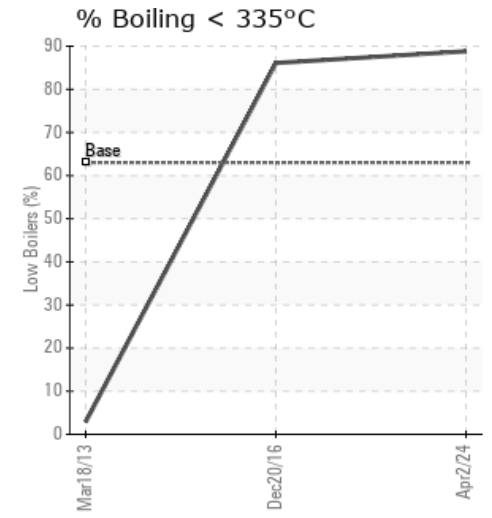
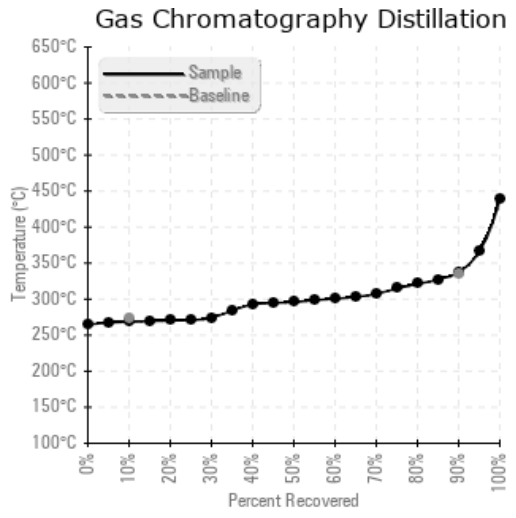
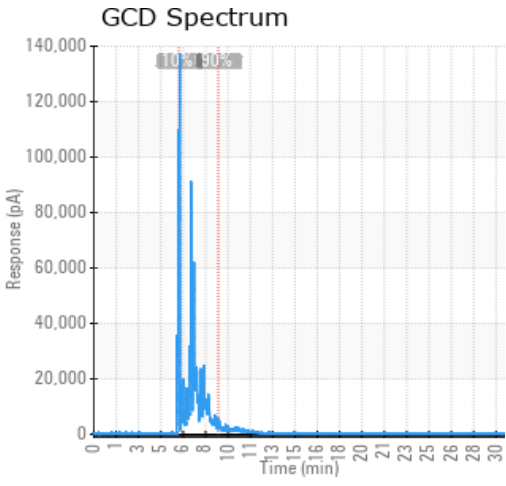
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/02/24	05/15/24	14.0y		302 / 150	89	4.7	0.03	0.024	515 / 269	565 / 296	639 / 337	88.81
12/20/16	12/20/16	0.0y		306 / 152	25.3	4.2	0.046	0.014	507 / 264	562 / 295	663 / 351	86.11
03/18/13	03/28/13	0.0y	RECIRC LINE	417 / 214	28.1	20.0	0.031	0.157	675 / 357	763 / 406	837 / 447	2.91
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	
04/02/24	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	2	0	
12/20/16	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0
03/18/13	0	0	0	0	0	0	0	0	0	0	3	1	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

12/20/16	(GCD) % < 335°C is abnormally high. (GCD) 90% Distillation Point is abnormally high. Viscosity and Flash point appear normal. Suggest resampling at 1/2 normal cycle due to high Light ends, suitable for continued use (GCD) % < 335°C is abnormally high. (GCD) 90% Distillation Point is abnormally high.
03/18/13	The oil condition appears to be good at this time. (GCD) 90% Distillation Point is marginally low.

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