

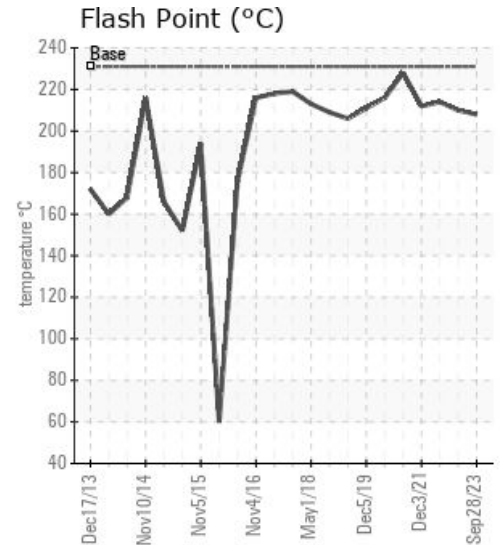
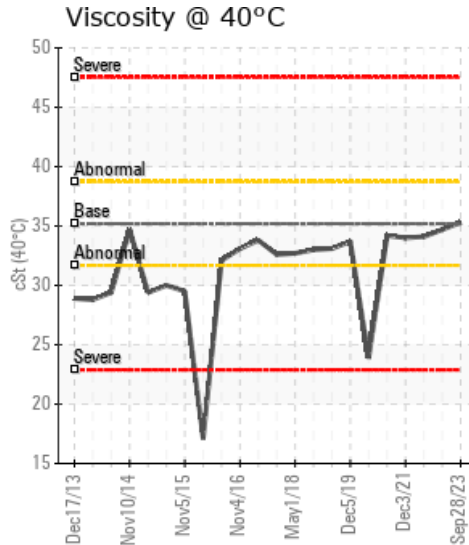
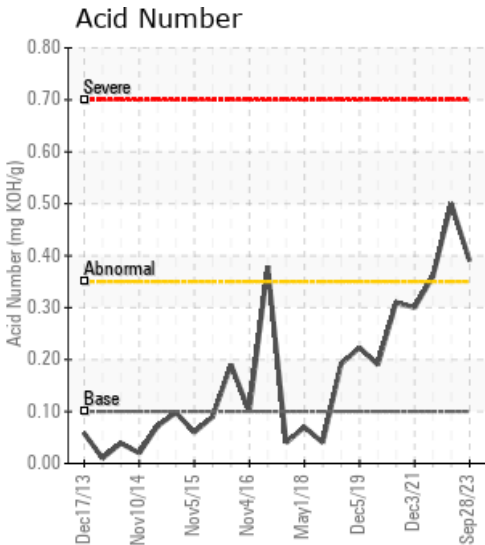
Laminate Storage/Delivery Hot Oil System

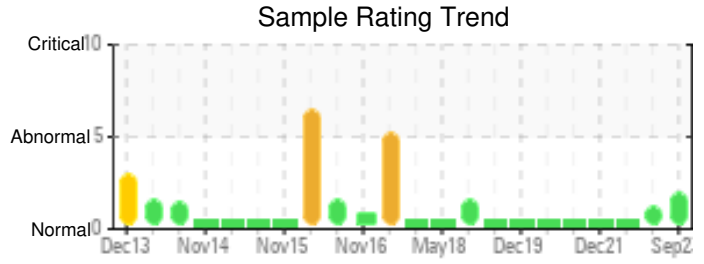
Customer: PTRHTF10141	System Information	Sample Information
TAMKO BUILDING PRODUCTS 2300 35TH ST TUSCALOOSA, AL 35401 US Attn: Greg Colburn Tel: (205)752-3555 E-Mail: gregory_colburn@tamko.com	System Volume: 110 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: Hy-Way	Lab No: 02586954 Analyst: Jake Finn Sample Date: 09/28/23 Received Date: 10/04/23 Completed: 10/06/23 Jake Finn jake.finn@HFSinclair.com

Recommendation: Acid number is still high but has improved from the previous sample that was taken earlier this year. Continue to monitor fluid condition and resample in 12 months.

Comments: Acid Number (AN) is abnormally high. (GCD) 10% Distillation Point is marginally low.

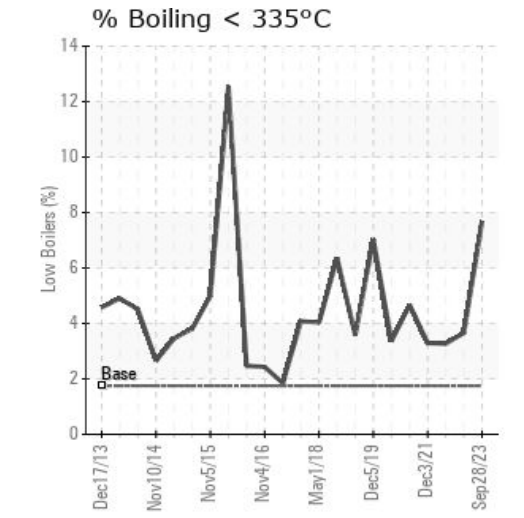
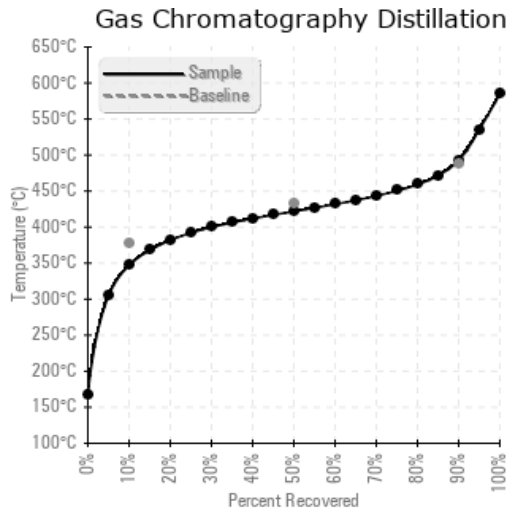
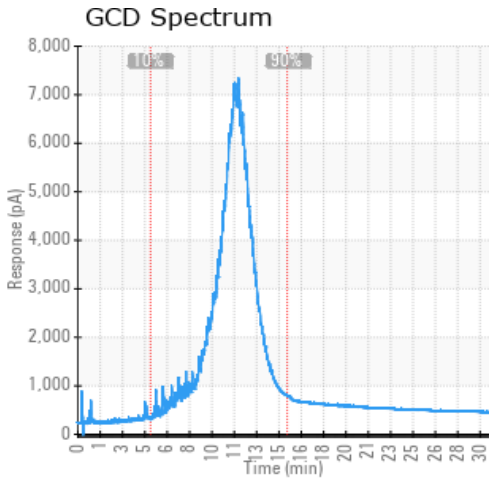
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/28/23	10/04/23	0.0m		406 / 208	257.5	35.3	0.39	0.185	657 / 347	791 / 422	918 / 492	7.68
04/27/23	05/10/23	0.0m		410 / 210	77.0	34.7	0.50	0.205	702 / 372	809 / 432	904 / 484	3.66
05/20/22	05/31/22	0.0m		417 / 214	27.1	34.1	0.36	0.153	705 / 374	810 / 432	905 / 485	3.27
12/03/21	12/13/21	0.0m		414 / 212	36.5	34.0	0.30	0.134	706 / 374	810 / 432	905 / 485	3.29
06/18/21	06/24/21	0.0m		442 / 228	39.8	34.2	0.31	0.103	686 / 363	795 / 424	905 / 485	4.67
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75





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
09/28/23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0
04/27/23	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0
05/20/22	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	62	0
12/03/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0
06/18/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0
Baseline Data			0	0						0			0	0				0	0				280	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments	
04/27/23	Sample shows no signs of wear or contamination. Acid number for this sample is high, but it does not appear that has any ill effect on the fluid or system, yet. There's no indication of how old the oil in the system is, but it may be time to consider replacing the fluid before the higher concentration of acids leads to adverse effects within the system. Otherwise the current fluid appears to be suitable for use. Please resubmit for testing in 12 months. Acid Number (AN) is abnormally high.
05/20/22	Sample indicates no signs of wear, contamination or fluid degradation. This fluid is suitable for continued use, please resample and submit for testing in 12 months.N/A
12/03/21	Sample is in good condition and indicates oil is suitable for continued use. Please resubmit for testing in one year.N/A
06/18/21	Results indicate that this system and fluid are in good condition, and the fluid is suitable for continued use. Please resubmit sample in 12 months for testing.N/A

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