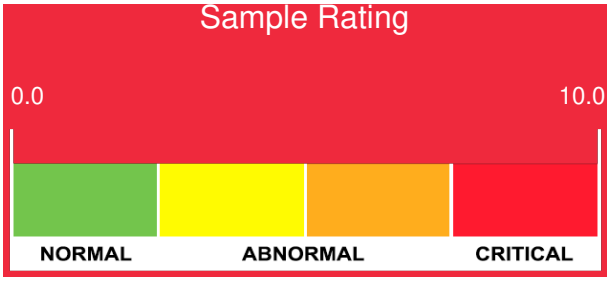
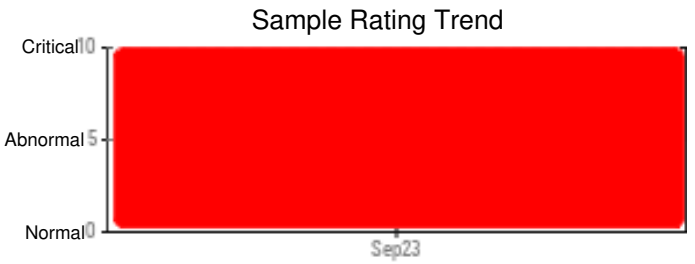




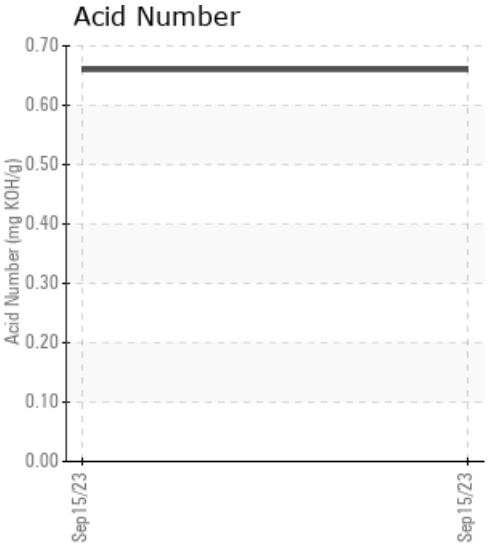
PEARSON MATERIALS

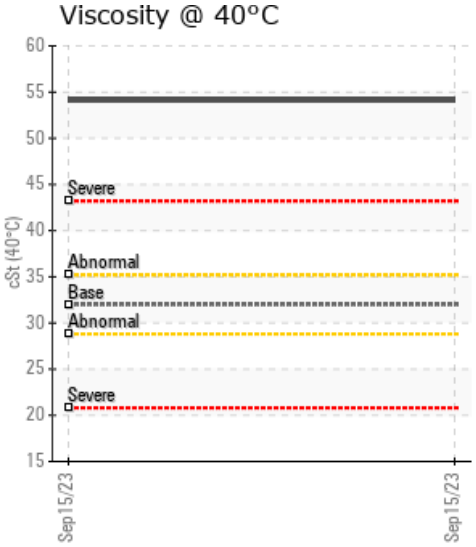
Customer: PTRHTF60043	System Information	Sample Information
Security Oil 951 E Dewey Street Wichita, KS 67202 US Attn: Dennis Maloney Tel: E-Mail: dennism@secoilco.com	System Volume: 0 gal Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: DYNA-PLEX 21C ALCOR 628 ISO 32 Make:	Lab No: 02588042 Analyst: Garrett Bapp Sample Date: 09/15/23 Received Date: 10/10/23 Completed: 10/18/23 Garrett Bapp Garrett.Bapp@HFSinclair.com

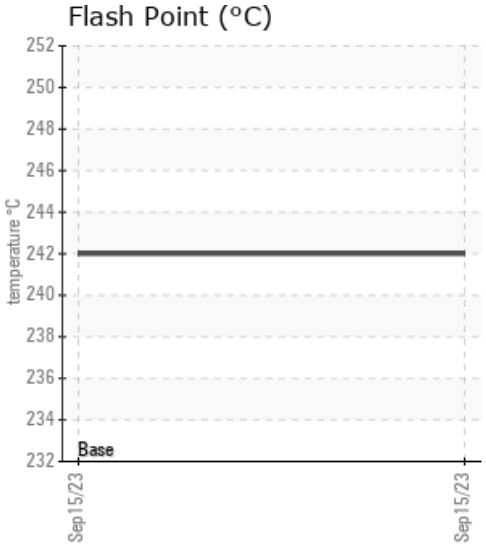
Recommendation: Fluid is no longer suited for use. Oxidation of the fluid has occurred and is present with the vast increase in viscosity, high acid number (AN) and rising Flash Point. The likelihood of sludge deposits in the system due to the extended life of the oil past the condemning limits is very likely. Warning limit of 0.5% of Insolubles is far surpassed and almost at 1%. Also advise to inspect pumps for slurry damage. There are also other foreign contaminants of Sodium and Calcium. Sodium usually comes from a coolant leak as sodium is one of the main chemicals. It can also come from cross contamination from other oils such as engine oils but very rare. Calcium is typically used in the formulation of engine oils as a detergent and corrosion inhibitor. A investigation should occur to identify how the sources of Sodium and Calcium entered the system. Best recommendation is to fully drain, clean and flush the system before refilling with new oil. This will ensure that the new heating oil will have the best and longest life.

Comments: Pentane Insolubles levels are severely high. Sodium ppm levels are severely high. Acid Number (AN) is severely high. Calcium ppm levels are severely high. (GCD) 90% Distillation Point is abnormally high. Visc @ 40°C is abnormally high. (GCD) 50% Distillation Point is marginally high.

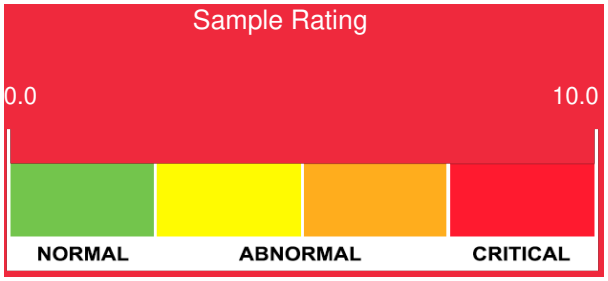
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/15/23	10/10/23	0.0y		468 / 242	59.7	54.1	0.66	0.980	717 / 380	827 / 442	936 / 502	1.45
Baseline Data				415 / 213		32			693 / 367	799 / 426	903 / 484	3.5

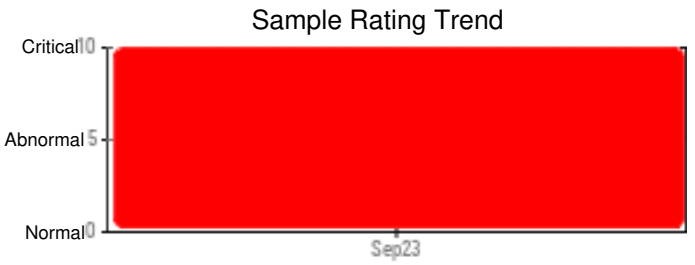






PETRO-CANADA LUBRICANTS

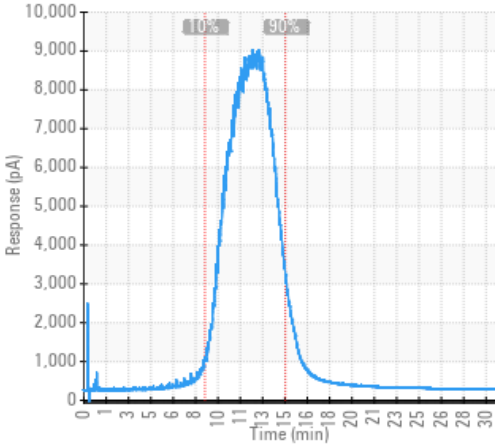




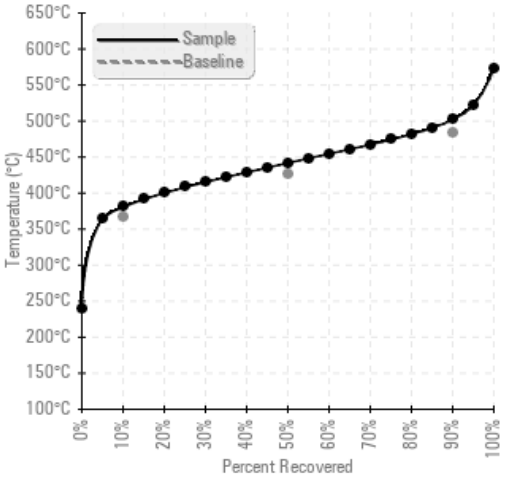
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
09/15/23	17	0	0	0	0	0	2	0	0	0	2	340	0	0	0	0	0	0	1	3	832	1	4	4
Baseline Data			0	0						0			0	0				0	0				0	

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

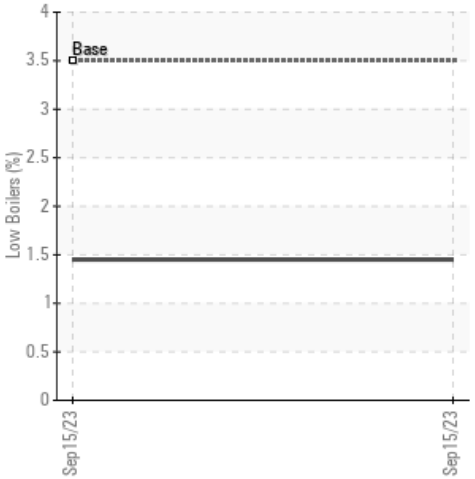
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

