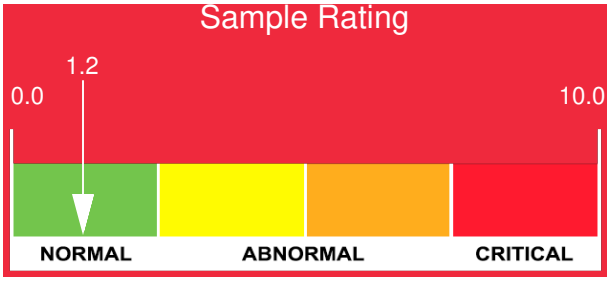
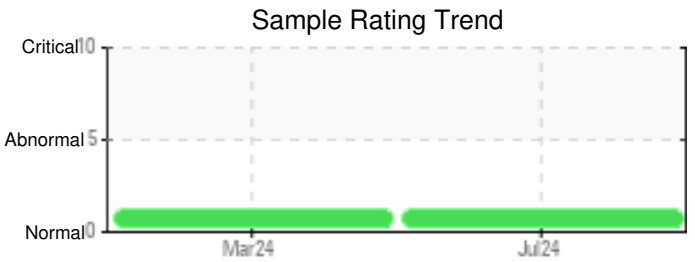




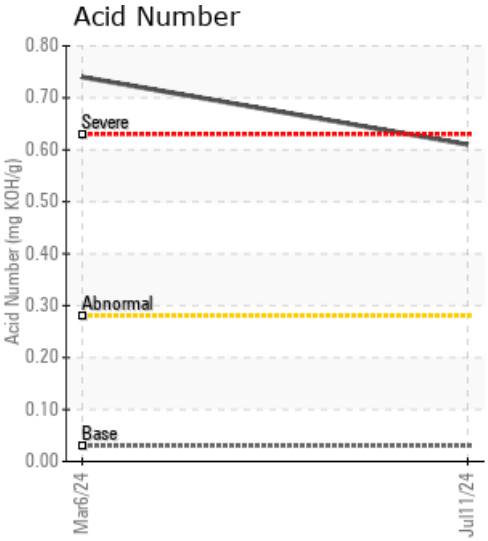
[3-6-39-11W5] WESTBRICK

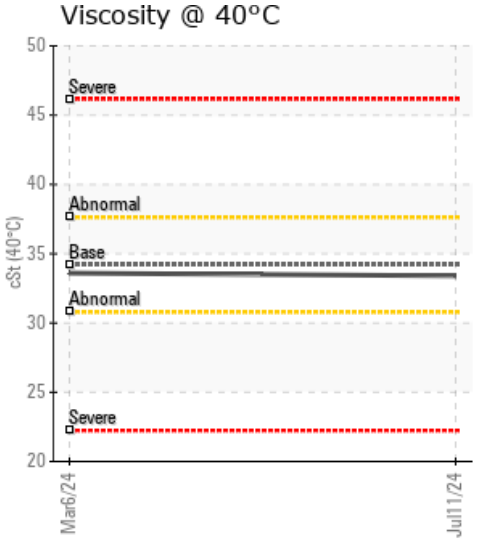
Customer: PTRHTF20243	System Information	Sample Information
CFR CHEMICALS 38451 RRZZ RED DEER, AB T4E 2N6 CA Attn: Andrew Schacher Tel: (780)982-8478 E-Mail: aschacher@cfrchemicals.com	System Volume: 5000 ltr Bulk Operating Temp: 185F / 85C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02648260 Analyst: Lyle Dach Sample Date: 07/11/24 Received Date: 07/16/24 Completed: 07/17/24 Lyle Dach lyle.dach@HFSinclair.com

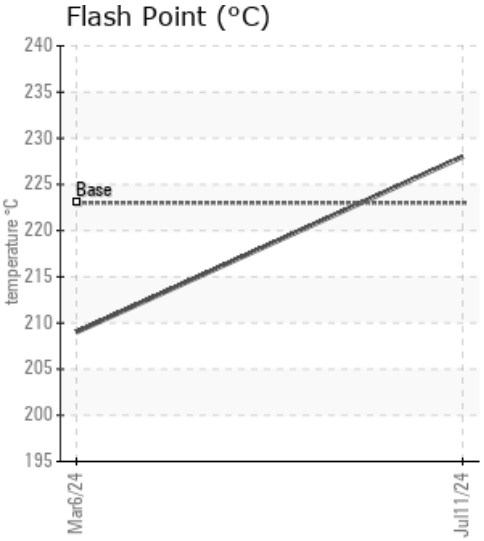
Recommendation: This sample confirms the elevated acid number that we saw in March. Iron levels and pentane insolubles are low, it does not appear that the elevated acid number is causing corrosive wear. The AN levels have dropped slightly from previously, was the system topped up with fresh oil?Overall the fluid appears to be in reasonable condition but the acid number is still a concern and should be monitored. Sweetening does help but for a system of this size it maybe better to plan to replace the fluid instead of sweetening. Draining, cleaning the system and installing new fluid will have a better service life than fluid that is used to sweeten a system. Acid number does increase exponentially and has tendencies to cause increased sludge deposits and system corrosion. Resample in 6 months.

Comments: Acid Number (AN) is abnormally high.

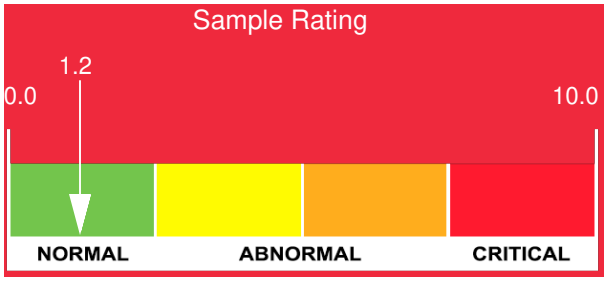
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/11/24	07/16/24	0.0y		442 / 228	34	33.4	0.61	0.069	699 / 371	802 / 428	902 / 484	2.73
03/06/24	03/19/24	3.0y		408 / 209	62	33.6	0.74	0.369	702 / 372	802 / 428	902 / 484	1.61
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

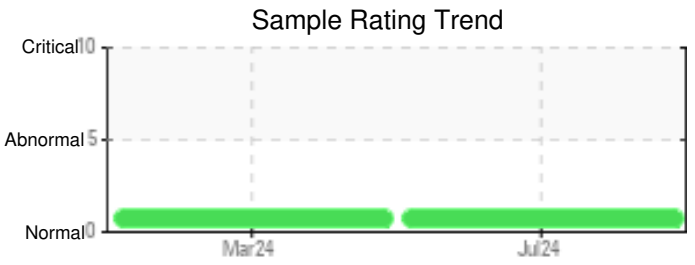






PETRO-CANADA LUBRICANTS

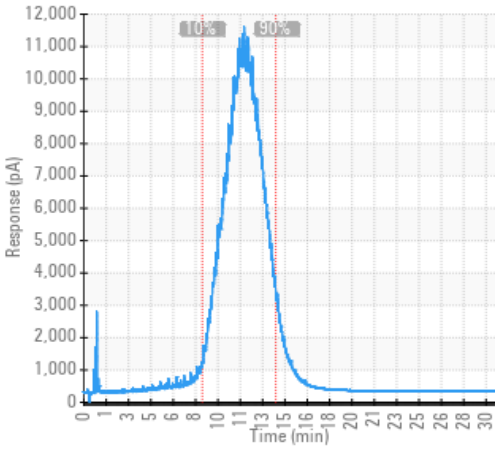




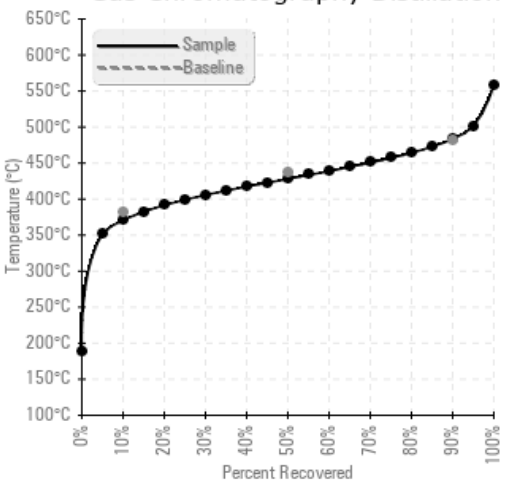
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
07/11/24	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	23	0
03/06/24	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	31	0
Baseline Data			0	0						0			0	0					0				0	

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

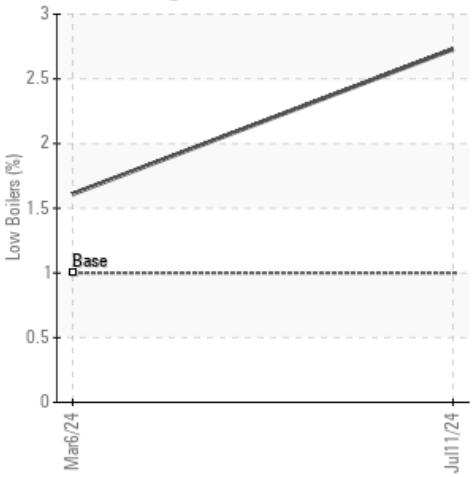
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

03/06/24	Overall the fluid appears to be in reasonable condition the fluids acid number is elevated to a level where fluid sweetening should be considered. Acid number does increase exponentially and has tendencies to cause increased sludge deposits and system corrosion. Resample to confirm these results. Acid Number (AN) is abnormally high.