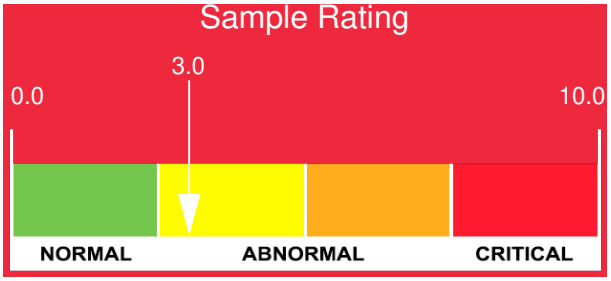
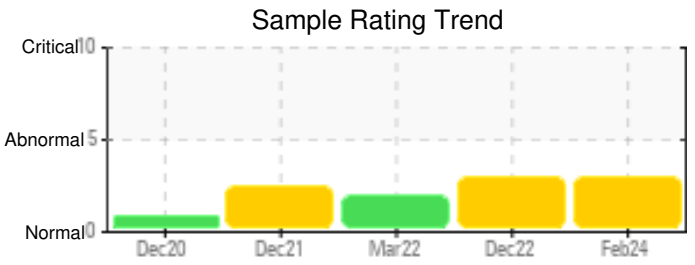




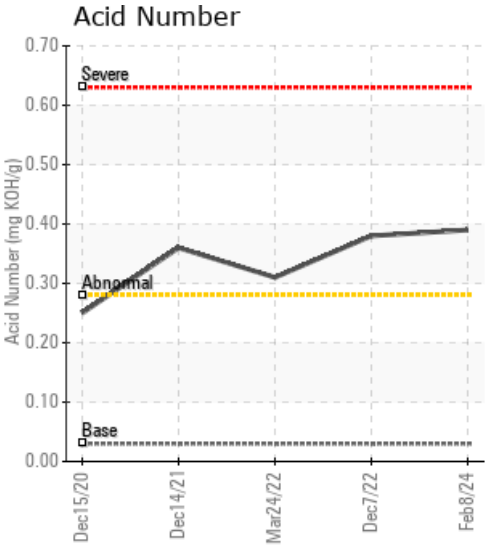
[D-4 Morris plant] LISBON IL

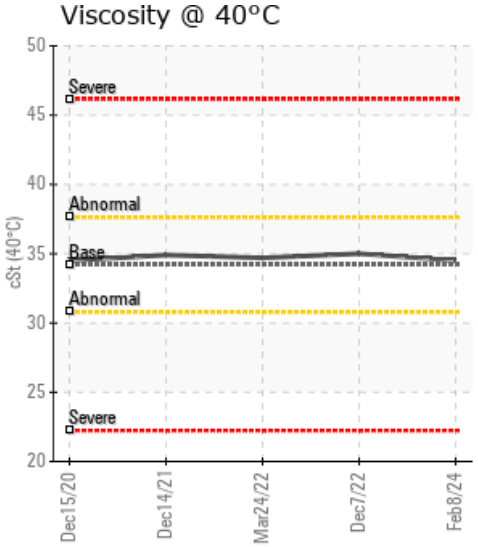
Customer: PTRHTF30107	System Information	Sample Information
D-CONSTRUCTION 16805 QUARRY RD MORRIS, IL 60450 US Attn: Chris Lenzie Tel: (815)405-6831 E-Mail: clenzie@sandenoinc.com	System Volume: 400 g Bulk Operating Temp: 350F / 177C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: HEAT TECH	Lab No: 02617271 Analyst: Yvette Trzcinski Sample Date: 02/08/24 Received Date: 02/21/24 Completed: 03/06/24 Yvette Trzcinski yvette.trzcinski@HFSinclair.com

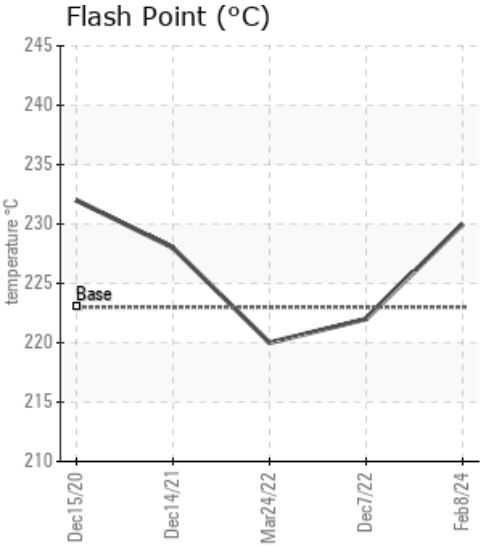
Recommendation: Continuing to see some thermal degradation the low boilers has increased as well as the acid number and insolubles. Product is acceptable for continued use resample in 6-9 months

Comments:

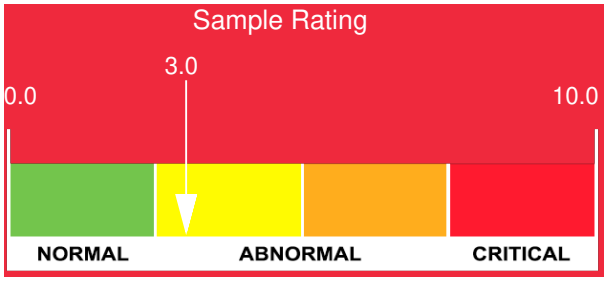
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/08/24	02/21/24	0.0y		446 / 230	116	34.5	0.39	0.251	718 / 381	815 / 435	921 / 494	1.18
12/07/22	02/28/23	0.0y		432 / 222	17.3	35.0	0.38	0.207	723 / 384	818 / 436	918 / 492	0.87
03/24/22	03/30/22	3.0y	RETURN LINE	428 / 220	28.9	34.7	0.31	0.109	723 / 384	818 / 436	923 / 495	0.48
12/14/21	12/30/21	4.0y	return, before pump	442 / 228	19.4	34.9	0.36	0.263	720 / 382	814 / 435	921 / 494	0.58
12/15/20	12/24/20	2.0y	Return	450 / 232	18.8	34.5	0.25	0.082	723 / 384	816 / 435	922 / 494	0.29
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

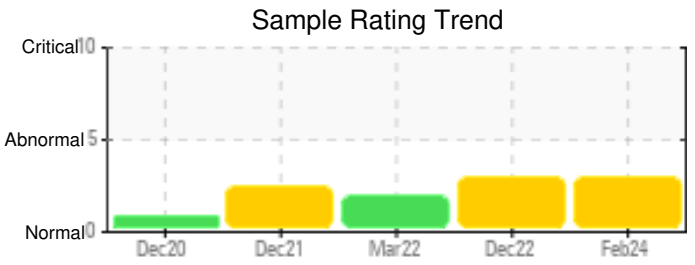






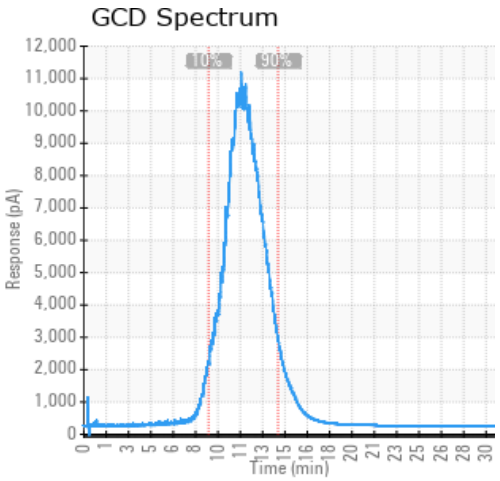
PETRO-CANADA LUBRICANTS

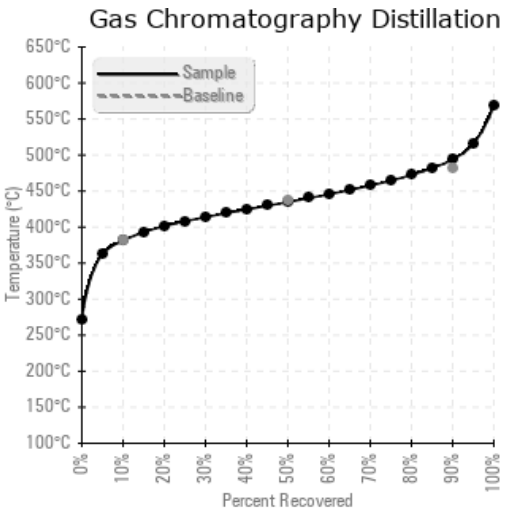


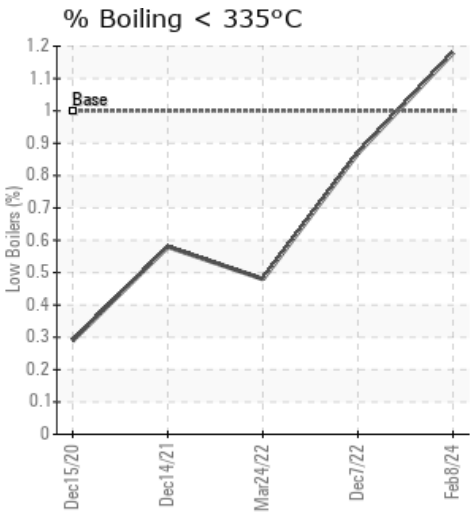


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
02/08/24	13	0	0	0	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	1
12/07/22	2	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1
03/24/22	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
12/14/21	1	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
12/15/20	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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







Historical Comments

12/07/22	Some continued oil oxidation is occuring as evidence of the increase in the Acid number and the Pentane Insolubles and the GCD 90% boiling point temperature. Fluid is acceptable for continued use resample in 6-12 months Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.
03/24/22	Acid number is slightly high but all other parameters look good. Continue to use an resample at next scheduled interval. Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.
12/14/21	There is some degradation and oxidation occuring in the system. The Acid number is increasing as well as the boiling point - GCD 90%. Fluid is suitable for continued use but resample in 12 months to monitor acid number and degradation level Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.
12/15/20	Sample specifications are all within acceptable limits and product looks good for continued service. Re-sample in 6-12 months (GCD) 90% Distillation Point is marginally high.

