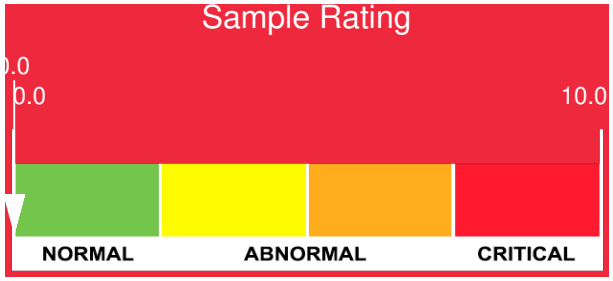
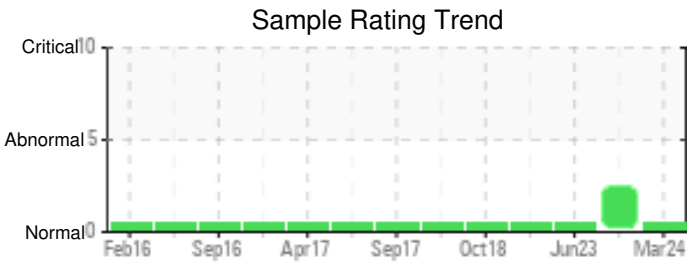




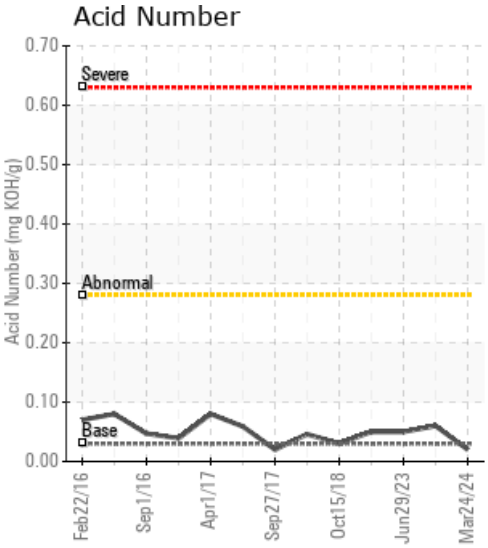
SILANE 3.0 DISTILLATION

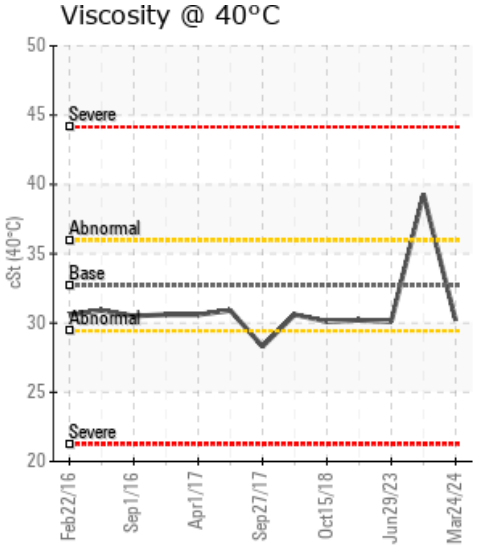
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N N.E. MOSES LAKE, WA 98837 US Attn: Chris Fuller Tel: (509)793-0723 E-Mail: chris.fuller@recsilicon.com	System Volume: 700 gal Bulk Operating Temp: 300F / 149C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: CCI	Lab No: 02626261 Analyst: Ron LeBlanc Sample Date: 03/24/24 Received Date: 04/02/24 Completed: 04/23/24 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

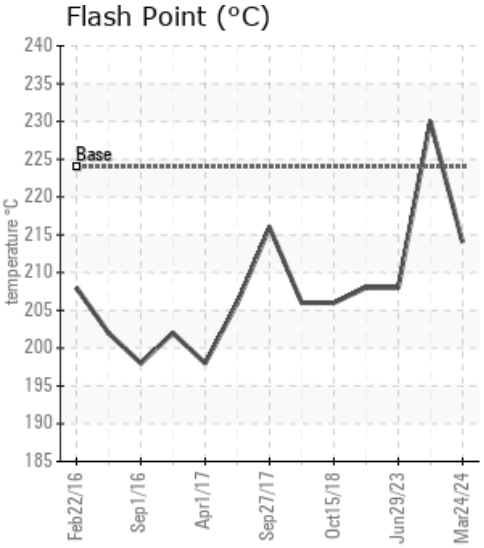
Recommendation: The sample shows phosphorus depleted to 21 ppm. the new typical is 270 ppm. This indicates the antioxident packages can be depleted below acceptable operating ranges. When R&D broke down 3.0 last year it was found the antioxident packages were depleted and suggested the oil be changed to obtain mamximum heat transfer qualities.

Comments:

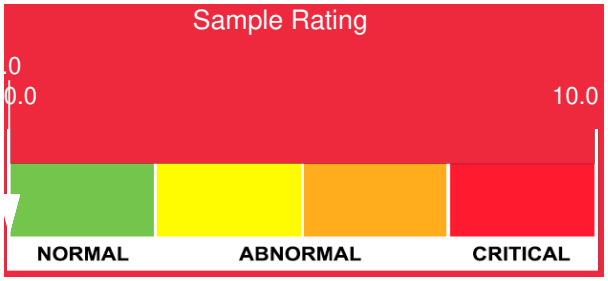
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/24/24	04/02/24	180.0m		417 / 214	6	30.2	0.02	0.037	698 / 370	799 / 426	894 / 479	1.91
07/15/23	07/20/23	171.0m	mole sieve preheater	446 / 230	4.5	39.3	0.06	0.044	714 / 379	816 / 436	936 / 502	1.14
06/29/23	07/05/23	0.0m	expansion tank	406 / 208	6.6	30.2	0.05	0.041	697 / 370	800 / 427	895 / 480	2.25
06/29/23	07/05/23	171.0m	expansion tank	406 / 208	6.0	30.1	0.05	0.046	696 / 369	799 / 426	895 / 479	2.25
10/15/18	11/06/18	114.0m		403 / 206	15.2	30.1	0.03	0.045	690 / 366	796 / 425	890 / 477	2.39
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

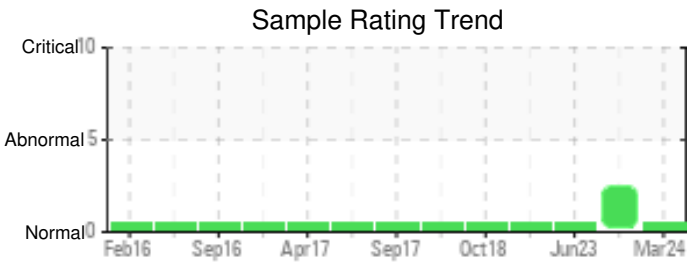






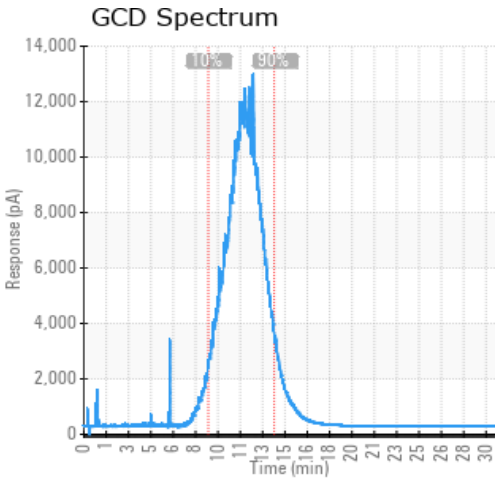
PETRO-CANADA LUBRICANTS

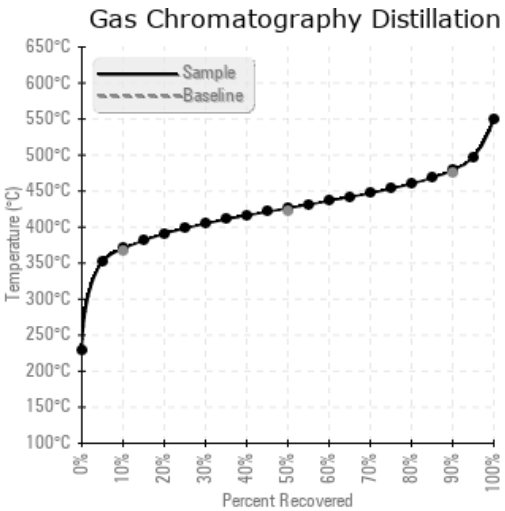


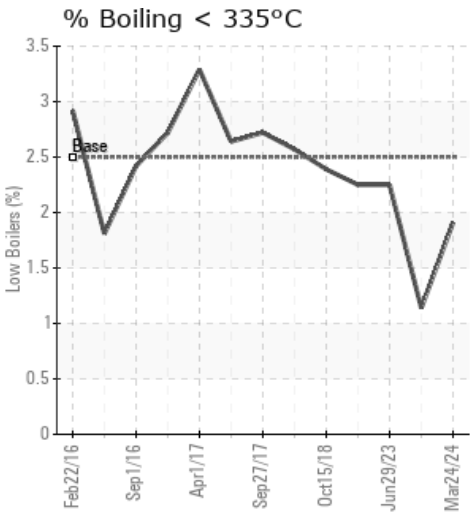


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/24/24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0
07/15/23	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	297	2
06/29/23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1
06/29/23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1
10/15/18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
Baseline Data			0	0						0			0	0					0				270	

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







Historical Comments

07/15/23	The viscosity is abnormally high. The GCD 90% Distillation point is severely high indicating increase in viscosity. Pentane insolubles is elevated compared to previous sample. Sludge may be forming causing 90% Distillation Point to increase. Consider taking another sample. Purge plenty of oil before taking sample. Make sure oil is hot when pulling the sample. (GCD) 90% Distillation Point is severely high. Visc @ 40°C is abnormally high.
06/29/23	Sample looks excellent. Resample at normal interval.
06/29/23	Sample looks excellent. Resample at next normal interval.
10/15/18	Sample is normal. Re-sample at regular interval.