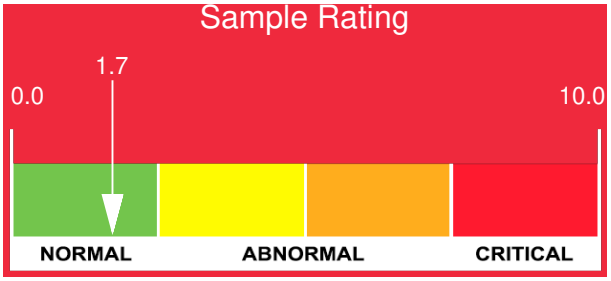
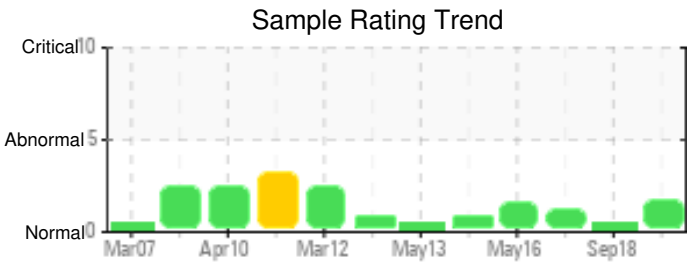




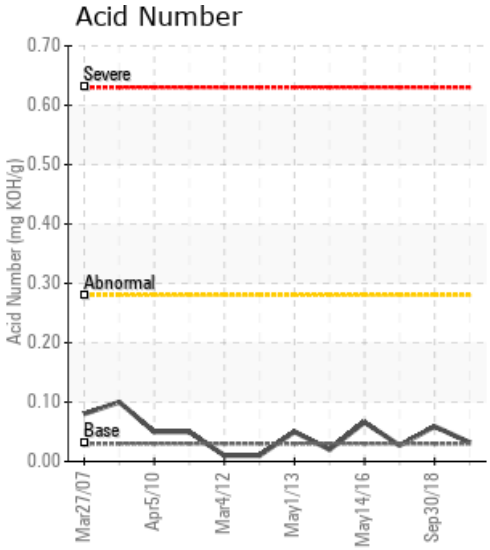
LINE 2 FILLER HEATER SYSTEM

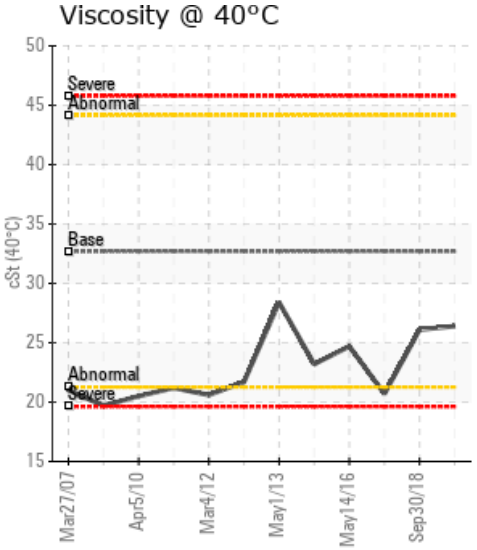
Customer: PTRHTF10069	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 3303 EAST 4TH AVENUE SHAKOPEE, MN 55379 USA Attn: Patrick Wallace Tel: E-Mail: patrick.wallace@saint-gobain.com	System Volume: 5670 gal Bulk Operating Temp: 428F / 220C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02315478 Analyst: Gaston Arseneault Sample Date: 09/24/19 Received Date: 10/21/19 Completed: 11/12/19 Gaston Arseneault gaston.arseneault@hollyfrontier.com

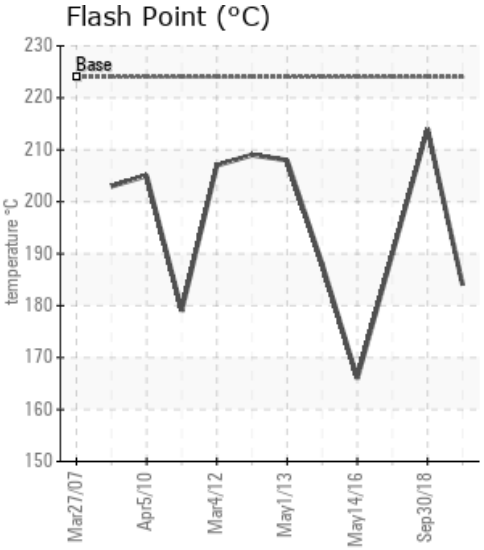
Recommendation: We can't explain why the viscosity remained identical but the flash point dropped by 30C. Contamination by asphalt, water or other elements is insignificant or non-detectable. No actions needed at this time. Re-sample at next scheduled interval.

Comments: COC Flash Point is marginally low.

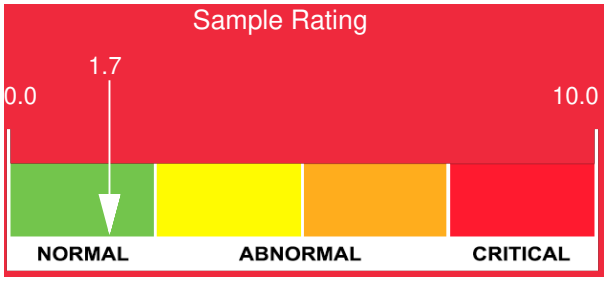
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/24/19	10/21/19	0.0y	MAIN SYSTEM FLOW	363 / 184	7.1	26.4	0.032	0.116	699 / 371	794 / 424	895 / 479	1.69
09/30/18	10/10/18	0.0y		417 / 214	0.00	26.1	0.059	0.027	687 / 364	778 / 415	874 / 468	1.90
09/03/17	09/12/17	4.0y	MAIN SYSTEM FLOW	374 / 190	0.00	20.7	0.027	0.042	682 / 361	785 / 419	891 / 477	3.93
05/14/16	05/24/16	0.0y	MAIN SYSTEM FLOW	331 / 166	2.3	24.7	0.066	0.080	665 / 352	773 / 411	866 / 463	6.19
06/06/14	06/17/14	0.0y	MAIN FLOW NEAR PUMP	370 / 188	3.2	23.2	0.02	0.034	669 / 354	783 / 417	888 / 475	6.18
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

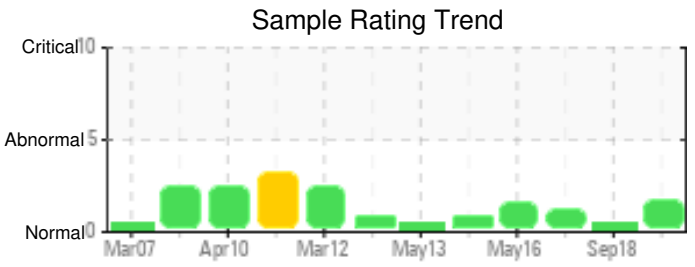






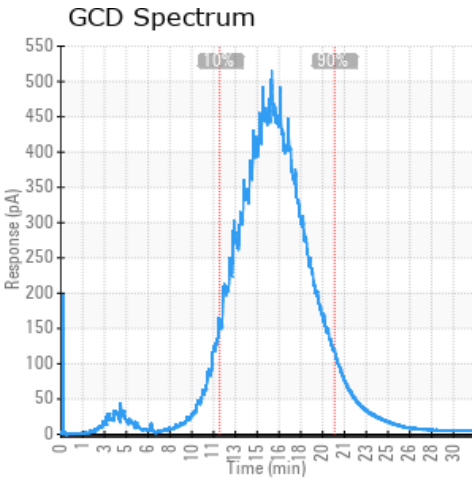
PETRO-CANADA LUBRICANTS

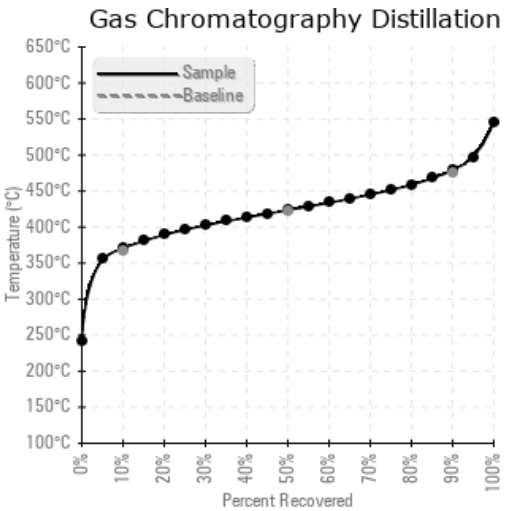


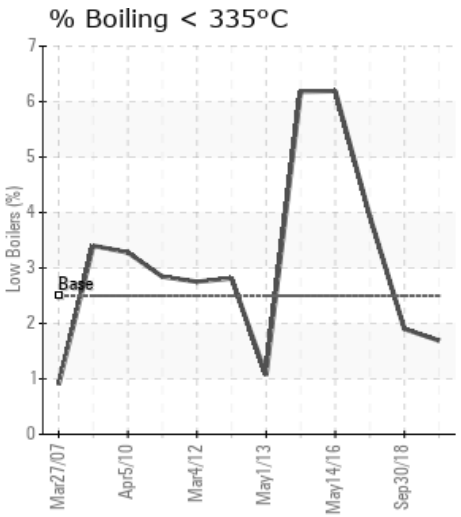


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
09/24/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	0
09/30/18	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	48	0
09/03/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0
05/14/16	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0
06/06/14	6	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	14	0	69	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

09/30/18	Flash point remains strong even if the viscosity hovers around 15% lower than fresh oil. Results appear to remain stable from year to year. Re-sample at next scheduled interval. No trace of contamination by asphalt or the elements or fluid degradation.
09/03/17	We can not explain why the oil viscosity dropped 20% yet the flash point increased by dozens of degrees. Anywho, no immediate action seems required at this time. Re-sample at next normal interval. Visc @ 40°C is abnormally low. COC Flash Point is marginally low.
05/14/16	COC Flash Point is abnormally low. GCD % at 335C is marginally high at 6.19% and should consider venting. Other properties look good. Resample next interval to monitor.
06/06/14	The oil carries a certain amount of low boilers. We recommend to vent them out and replace lost volume with fresh oil addition. COC Flash Point is marginally low.