

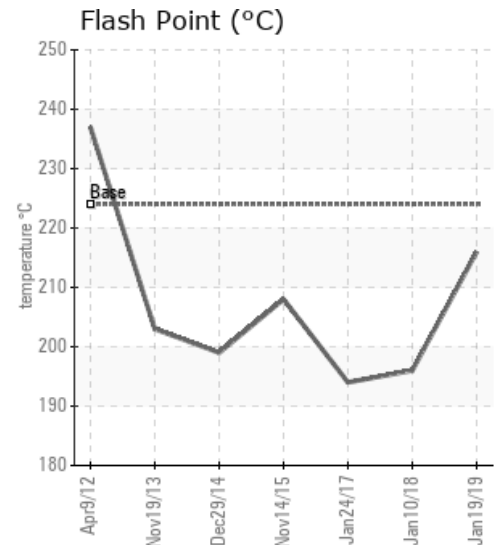
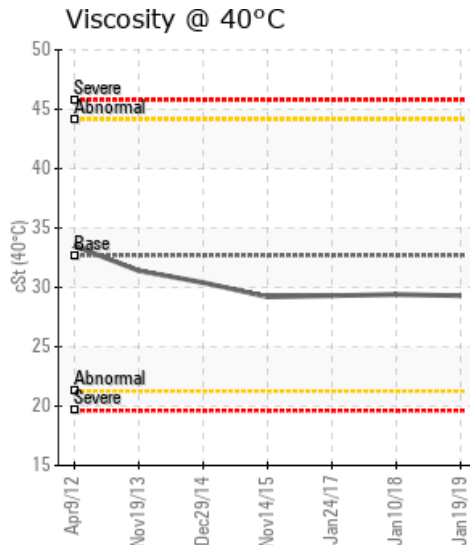
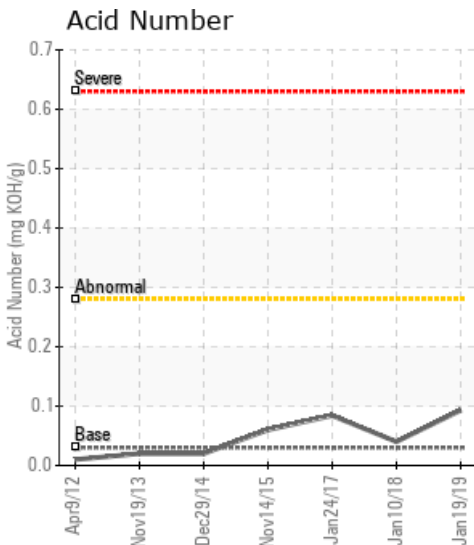
ENNIS HOT OIL SYSTEM

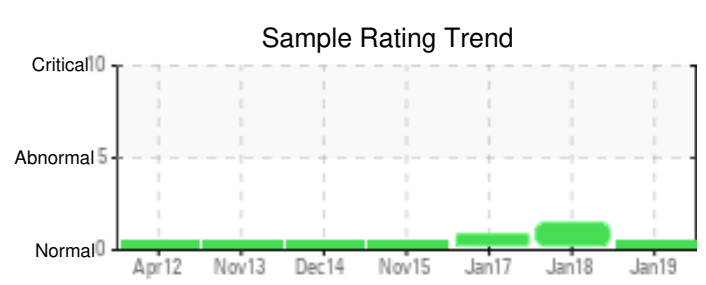
Customer: PTRHTF10112	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 2901 N KAUFMAN ST ENNIS, TX 75119 USA Attn: TUNJI CLIFF ADESANYA Tel: (812)875-4419 E-Mail: olatunji.c.adesanya@saint-gobain.com	System Volume: 2000 gal Bulk Operating Temp: 550F / 288C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02265953 Analyst: Gaston Arseneault Sample Date: 01/19/19 Received Date: 02/04/19 Completed: 02/21/19

Recommendation: The oil condition looks acceptable and no action appears to be needed at this time. Viscosity is normal, flash point is high, other properties are normal. Re-sample at next scheduled interval.

Comments:

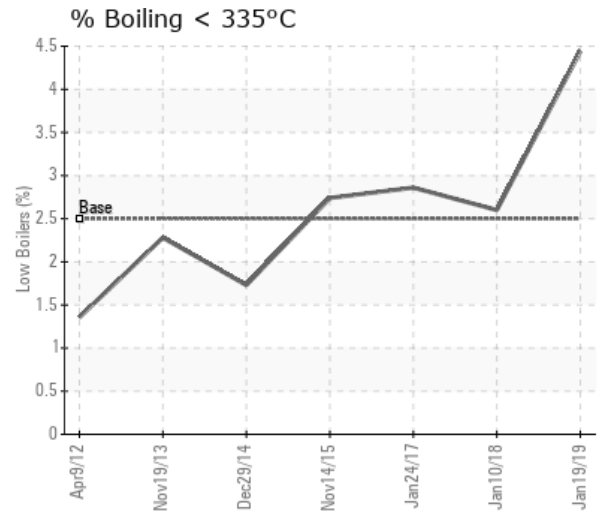
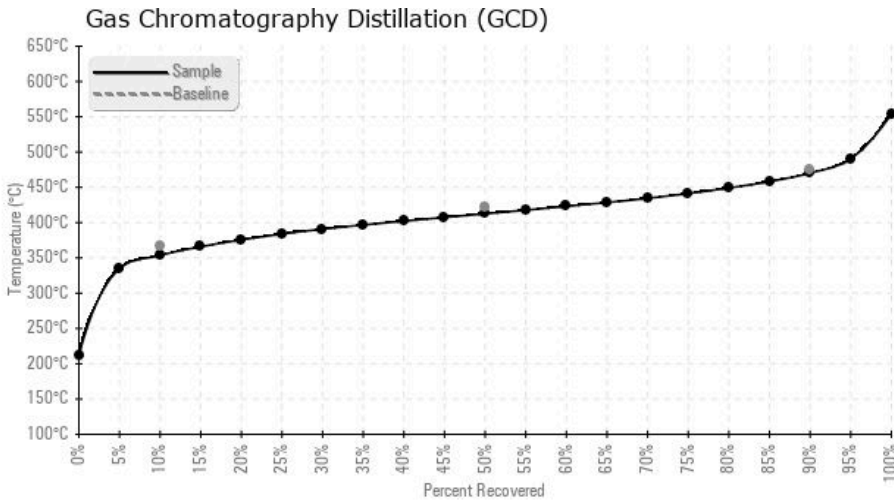
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/19/19	02/04/19	8m	MAIN PUMPS	421 / 216	22.1	29.3	0.093	0.015	668 / 354	775 / 413	879 / 470	4.44
01/10/18	03/22/18	84m		385 / 196	2.8	29.4	0.04	0.093	682 / 361	784 / 418	894 / 479	2.60
01/24/17	02/13/17	66m	MAIN LOOP PUMP	381 / 194	17.8	29.3	0.084	0.085	689 / 365	796 / 424	899 / 482	2.86
11/14/15	11/30/15	55m	MAIN LOOP	406 / 208	30.9	29.2	0.06	0.256	690 / 365	795 / 424	894 / 479	2.74
12/29/14	01/09/15	44m	SAMPLE VALE OUT STRA	390 / 199	10.2	30.4	0.02	0.048	698 / 370	803 / 428	898 / 481	1.73
11/19/13	11/29/13	7m	SAMPLE VALVE	397 / 203	8.8	31.4	0.02	0.069	695 / 368	797 / 425	892 / 478	2.28
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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
01/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0
01/10/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
01/24/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
11/14/15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
12/29/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
11/19/13	9	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	8	0
Baseline Data			0	0						0		0	0					0					270	

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



Historical Comments

01/10/18	The fluid condition appears normal at this time. No action needed other than re-sample at next scheduled interval.
01/24/17	The fluid is in good condition. viscosity remains normal, no apparent contamination, oxidation is minimal. We recommend to sample at the next scheduled interval.
11/14/15	Fluid is suitable for continued use.
12/29/14	No action needed at this time. Reduced viscosity, reduced flash point, and increased GCD curve are all results from addition of Calflo AF on top of Petro-Therm.
11/19/13	The flash point look slike it has dropped slightly but in fact, the previous lab had higher than expected flash point results so I would say it looks normal now. Every test shows a normal result. Only question is the fluid looks more like Petro-Therm than Calflo AF so we will reach out to you to confirm this. No action needed at this time.

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.