

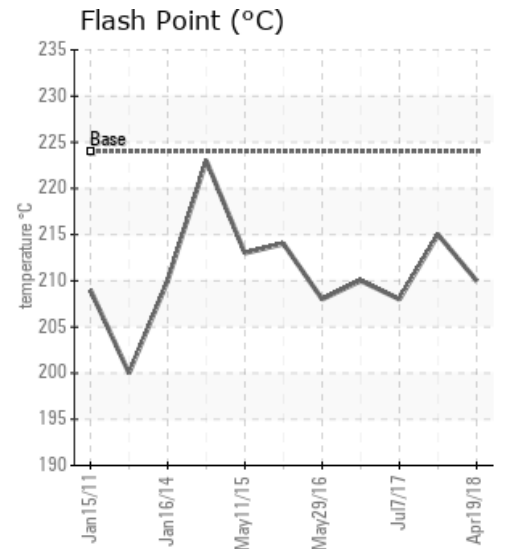
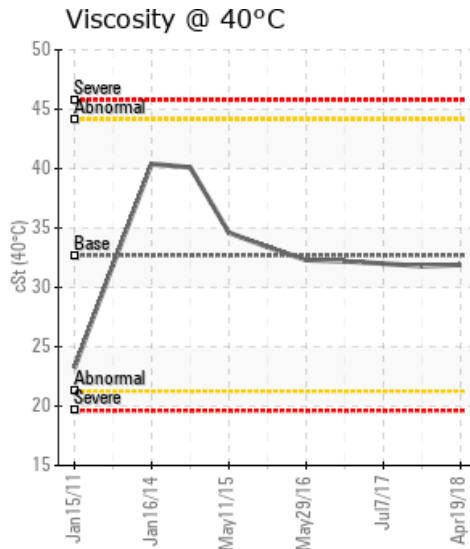
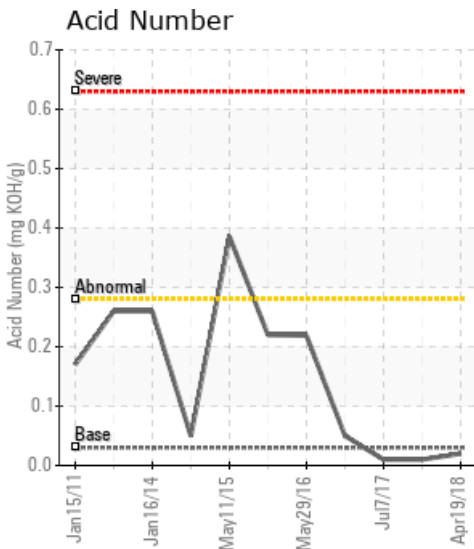
## LINE 2 HOT OIL SYSTEM

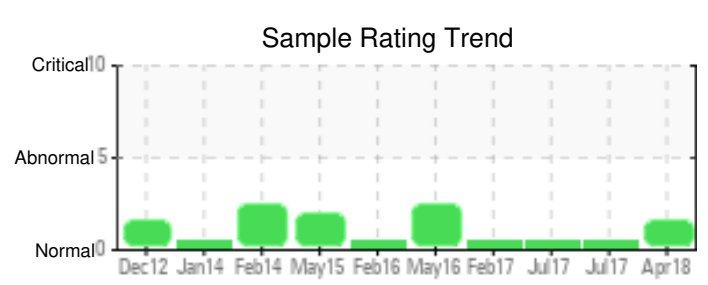
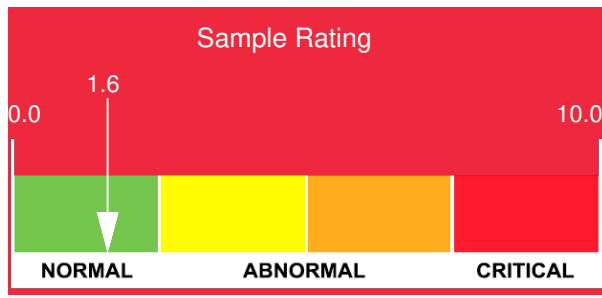
Customer: PTRHTF10059	System Information	Sample Information
CERTAITEED - SAINT GOBAIN 11519 US RT 250 N MILAN, OH 44846 USA Attn: DAVE BLAKELY Tel: (419)541-0843 E-Mail: dave.l.blakely@saint-gobain.com	System Volume: 1265 gal Bulk Operating Temp: 460F / 238C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: FIRST THERMOL	Lab No: 02212716 Analyst: Gaston Arseneault Sample Date: 04/19/18 Received Date: 04/27/18 Completed: 04/30/18 To discuss this report contact Gaston Arseneault at 973-986-6503

Recommendation: The condition of the oil looks very good. Please continue to sample at the same 8-9 months frequency.

Comments:

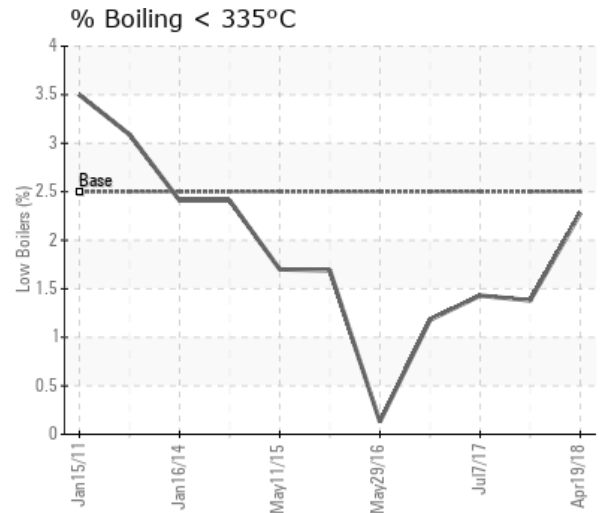
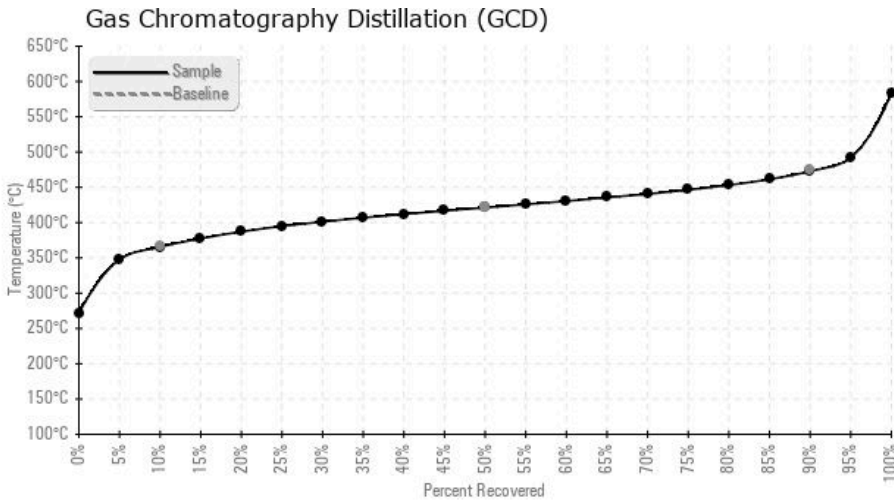
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/19/18	04/27/18	0y	OFF OF HEADER	410 / 210	6.1	31.9	0.02	0.277	690 / 365	790 / 421	883 / 473	2.28
07/12/17	07/28/17	0y		419 / 215	18.5	31.8	0.01	0.314	697 / 369	794 / 424	896 / 480	1.38
07/07/17	07/28/17	0y		406 / 208	15.1	32.0	0.01	0.289	696 / 369	794 / 423	895 / 479	1.43
02/07/17	02/15/17	0y	SIDE STREAM FLTR PRT	410 / 210	8.7	32.2	0.05	0.145	696 / 369	793 / 423	900 / 482	1.18
05/29/16	06/07/16	0y	SEALNAT USE TANK PMP	406 / 208	13.7	32.3	0.219	0.156	692 / 367	780 / 416	877 / 469	0.13
02/29/16	03/10/16	0y	LINE 2 COATER AREA	417 / 214	8.3	33.4	0.22	0.091	692 / 367	792 / 422	899 / 482	1.69
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
04/19/18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0
07/12/17	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	91	0
07/07/17	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	90	0
02/07/17	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	0
05/29/16	12	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	91	0
02/29/16	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	2
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

07/12/17	Everything looks excellent, nothing is flagged. Pls resample at next scheduled interval.
07/07/17	Everything looks excellent, nothing is flagged. Pls resample at next scheduled interval.
02/07/17	The age of the fluid is unknown but it showed as 14 years old in 2014. The fluid looks very dark but its condition doesn't look that bad. We do not want to condemn 1200 gals of fluid based on looks only but if problems described last year with deposits in piping in low lying areas then a good system cleaning to restore its overall good condition should be considered.
05/29/16	The fluid looks very dark but its condition is not as bad as in 2014. Solids are not alarmingly high, oxidation is present but not at levels worth flagging or indicative of major problems. It came to our attention however that the system shows deposits in low lying piping and those signs should not be ignored. This oil analysis is just another tool in the toolbox but the challenge is to determine what the inside looks like based on a 1qt sample of hot oil.
02/29/16	Oil is in good condition, no issues at this time. Re-sample at next scheduled interval.

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