

# ECLIPSE HEATER

**Customer: PTRHTF10059**  
 CERTAINTEED - SAINT GOBAIN  
 11519 US RT 250 N  
 MILAN, OH 44846 USA  
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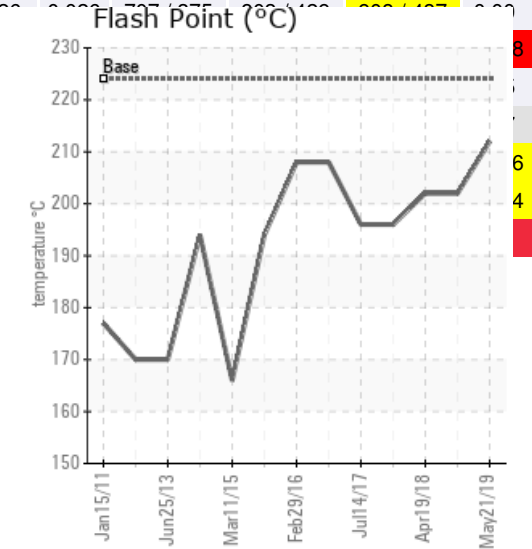
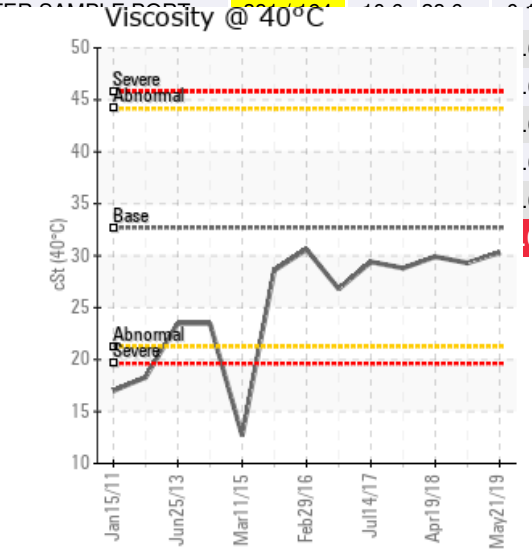
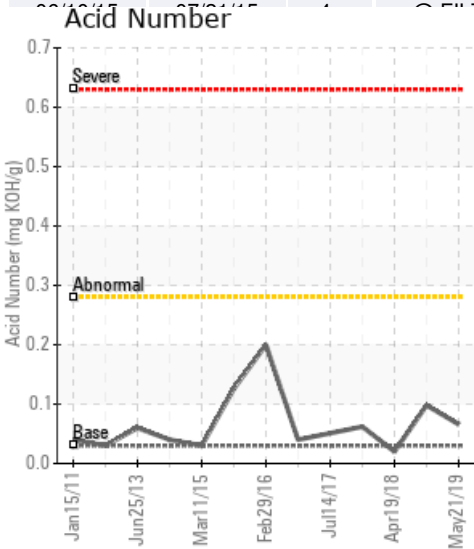
**System Information**  
 System Volume: 605 gal  
 Bulk Operating Temp: 525F / 274C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO AF  
 Make: FIRST THERMO

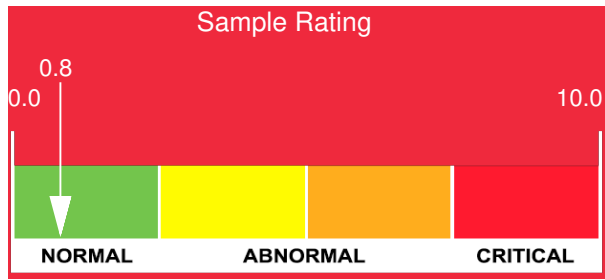
**Sample Information**  
 Lab No: 02288394  
 Analyst: Gaston Arseneault  
 Sample Date: 05/21/19  
 Received Date: 05/31/19  
 Completed: 06/03/19

Recommendation: Everything looks good, the fluid condition is great and degradation and contamination are not detected.

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	%
05/21/19	05/31/19	0y		414 / 212	10.2	30.3	0.066	0.016	690 / 366	791 / 422	896 / 480	1.87
10/11/18	10/24/18	0y		396 / 202	17.5	29.3	0.098	0.047	697 / 370	794 / 423	883 / 473	0.80
04/19/18	04/27/18	0y	HEADER	396 / 202	4.2	29.9	0.02	0.061	692 / 367	802 / 428	907 / 486	2.55
01/20/18	01/29/18	2y		385 / 196	0.00	28.8	0.062	0.035	694 / 368	782 / 417	882 / 472	0.00
07/14/17	07/28/17	0y		385 / 196	33.2	29.4	0.051	0.027	698 / 370	796 / 425	900 / 482	1.67
02/07/17	02/15/17	12y	SIDE STREAM FLTR PRT	406 / 208	14.4	26.8	0.04	0.043	698 / 370	796 / 425	899 / 482	1.27
02/29/16	03/10/16	6y	RETURN LINE PUMP	406 / 208	9.7	30.6	0.20	0.162	695 / 369	799 / 426	903 / 484	1.77





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												
05/21/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0												
10/11/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	0											
04/19/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	0											
01/20/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0											
07/14/17	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	6	0	0	0	0	95	0											
02/07/17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0											
02/29/16	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	0											
Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]														2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0
03/11/15	11	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	1	0	0	119	0											
01/16/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0											
06/25/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	0											
12/12/12	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0											
01/15/11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	7	0	6	8												
Baseline Data			0	0						0			0	0					0					270												

Historical Comments	
10/11/18	The fluid appears to be in excellent condition after 2.5 years, with minimal discoloration. Flash point remains strong. All properties tested are normal and well within acceptable limits. Acid Number (oxidation), moisture and overall contaminants are barely detectable. Pls re-sample at next scheduled interval.
04/19/18	The fluid appears to be in excellent condition after 2 years, with minimal discoloration. Flash point remains strong. All properties tested are normal and well within acceptable limits. Moisture and overall contaminants are barely detectable. Pls re-sample at next scheduled interval. (GCD) 90% Distillation Point is marginally high.
01/20/18	The fluid appears to be in excellent condition after 2 years, with minimal discoloration. Flash point remains strong. All properties tested are normal and well within acceptable limits. Moisture and overall contaminants are barely detectable. Pls re-sample at next scheduled interval.
07/14/17	The sample appears to be in good condition. Re sample at next scheduled interval
02/07/17	The fluid appears to be in good condition with no apparent contamination or degradation. Re-sample at next scheduled interval.
02/29/16	Oil is in good condition, no issues at this time. Re-sample at next scheduled interval.
06/10/15	Sample appears to be in good condition, please re-sample at the next maintenance interval. (GCD) 90% Distillation Point is marginally high. COC Flash Point is marginally low.

03/11/15



06/25/13

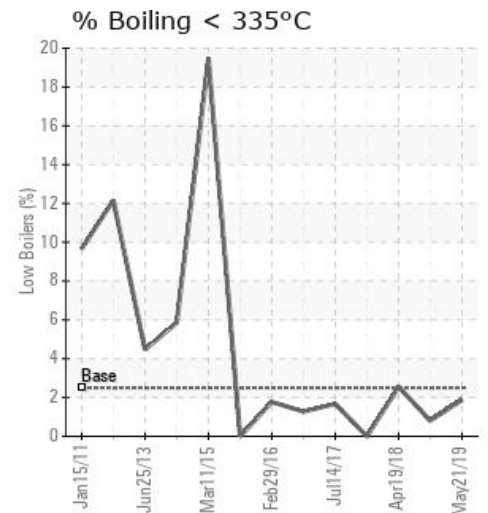
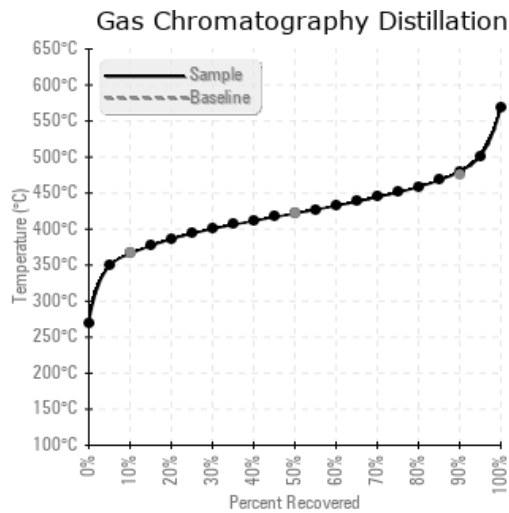
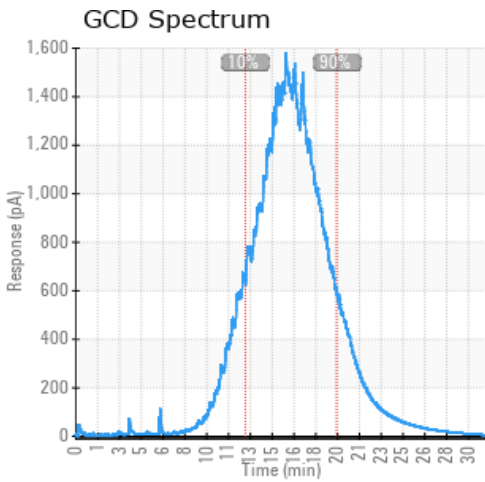
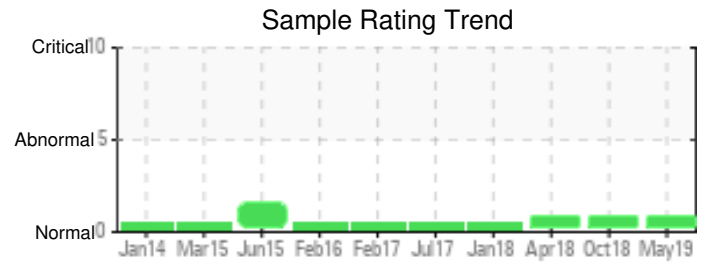
The fluid has not changed much since the last test in June 2013. It is still a mixture of Therminol 55 and Calflo AF. The flash point is now higher which is always good news. Everything looks normal. Re-sample as part of your PM in another 6 months or so. COC Flash Point is marginally low.

12/12/12

The oil condition is improving as the fluid is starting to look more like Calflo AF than Therminol 55. There is a reduction in the low boilers in the system, but I recommend we continue to monitor them closely to see if an additional venting is needed. Please continue to sample at the regular interval (9-12 months). COC Flash Point is abnormally low.

01/15/11

Some properties are flagged as severe but it's because the computer is trying to Calfo AF. Please re-sample at next normal interval. (GCD) 90% Distillation Point is abnormally low. (GCD) % < 335°C and (gcd) 10% distillation point are



The sample is flagged because it doesn't look much like Cafflo AF, that's why. The fluid condition shows it as a Therminol 55 product that suffer from thermal degradation, hence the reduced flash point and increased low boilers. Venting those low boilers out of the systm and replace vapors lost with fresh oil will help keep the flash and fire points at a high and safe level.