

# HOT OIL HEATER #1

**Customer: PTRHTF10070**  
 CERTAINTEED - SAINT GOBAIN  
 6350 NW FRONT AVE  
 PORTLAND, OR 97210 USA  
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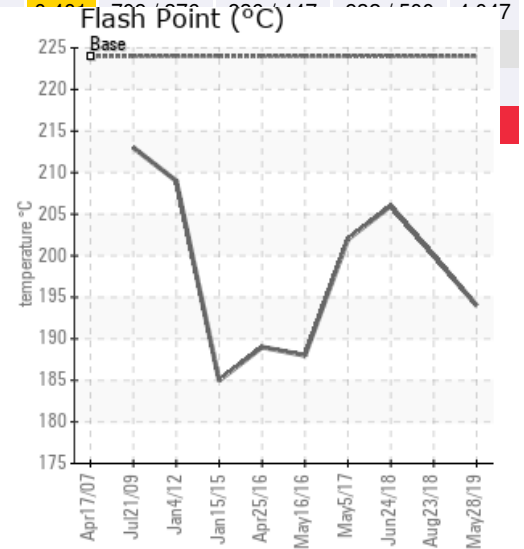
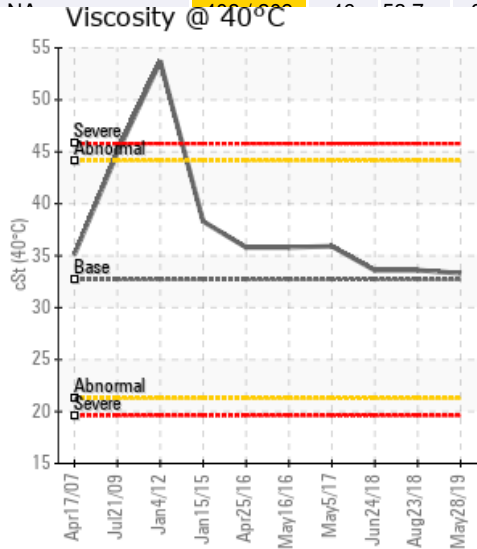
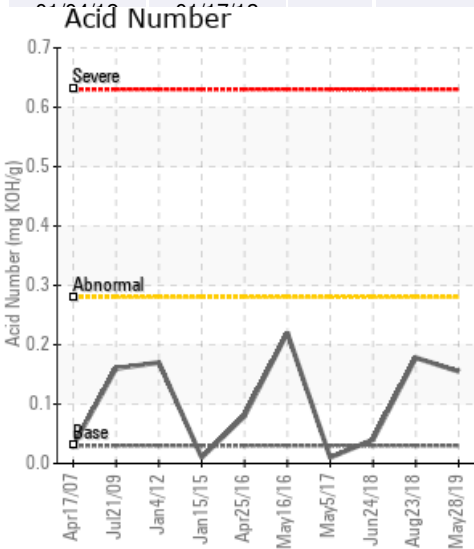
**System Information**  
 System Volume: 600 ltr  
 Bulk Operating Temp: 0F / -18C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO AF  
 Make:

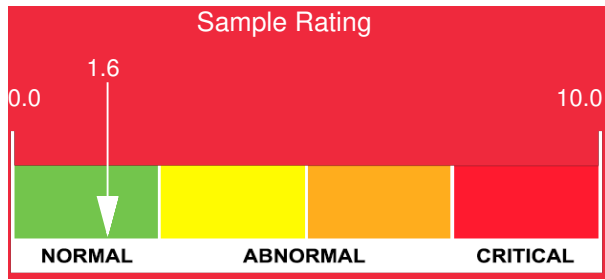
**Sample Information**  
 Lab No: 02290053  
 Analyst: Ron LeBlanc  
 Sample Date: 05/28/19  
 Received Date: 06/10/19  
 Completed: 06/12/19

Recommendation: Resample in 1 month. Purge sample line before collecting oil.

Comments: (GCD) 90% Distillation Point is abnormally high. 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	%
05/28/19	06/10/19	0m		381 / 194	12.9	33.3	0.155	0.335	701 / 372	803 / 428	918 / 492	0.56
08/23/18	08/31/18	0m	PORT ON HEATER	392 / 200	10.7	33.6	0.178	0.311	702 / 372	808 / 431	922 / 494	1.34
06/24/18	07/12/18	0m	SAMPLE PORT	403 / 206	10.6	33.6	0.04	0.307	691 / 366	770 / 410	861 / 461	0.00
05/05/17	05/29/17	22m	COATER	396 / 202	22.0	35.9	0.01	0.238	698 / 370	812 / 434	933 / 501	2.24
05/16/16	05/20/16	1m	BY DIESEL TANK	370 / 188	16.4	35.8	0.22	0.117	694 / 368	805 / 430	920 / 493	2.42
04/25/16	05/02/16	1m	BY FLUX TANK	372 / 189	16.0	35.8	0.08	0.162	698 / 370	813 / 434	940 / 505	2.51
01/15/15	01/26/15	2m	HOT ASHPAL HEAT 1	365 / 185	76.1	38.3	0.01	0.360	721 / 383	832 / 445	931 / 500	0.00



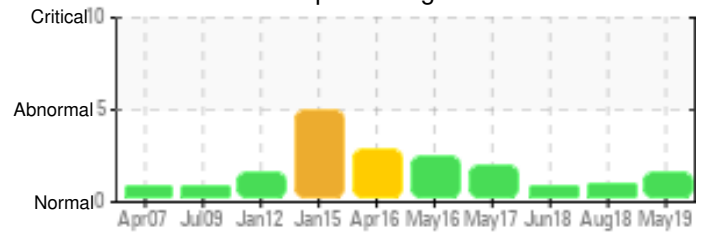


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc	
05/28/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	
08/23/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0
06/24/18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0
05/05/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0
05/16/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0
04/25/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0
01/15/15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0
Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]																									
07/21/09	0	0	0	0	0	0	0	0	0	0	15	2		0	0		0			0	0	0	0	0	0
04/17/07																									
Baseline Data			0	0						0			0	0					0					270	

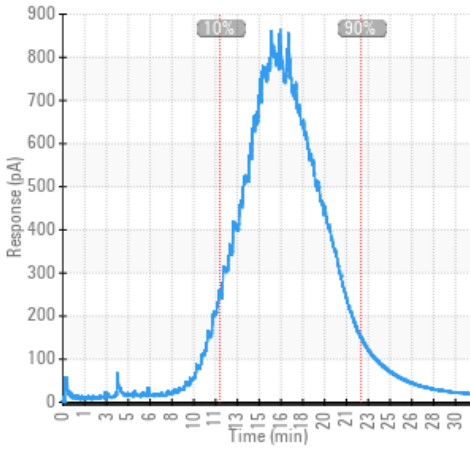
Historical Comments	
08/23/18	The oil is in excellent condition as all properties are within normal limits. Resample in 1 year. (GCD) 90% Distillation Point is abnormally high.
06/24/18	Pentane insoluble are elevated along with (GCD) 90% Distillation Point. Suggest purging oil from sample point and resample to confirm. (GCD) 90% Distillation Point is marginally low.
05/05/17	Everything looks normal and consistent with previous results. Contamination or oil degradation is not a concern, flash point is strong. re-sample at next scheduled interval. (GCD) 90% Distillation Point is severely high.
05/16/16	This was a re-sample and the results indicate it's very similar to the last sample. Everything seems normal and suggest to re-sample at the normal 1yr interval. (GCD) 90% Distillation Point is abnormally high. COC Flash Point is marginally low.
04/25/16	*** NOTE Fluid changed to Petro-Canada CALFLO AF as per customer instruction. *** Understand new samples were taken and sent for testing. Report will be issued when those samples are completed. (GCD) 90% Distillation Point is severely high. COC Flash Point is marginally low.
01/15/15	(GCD) 90% Distillation Point is severely high. Visc @ 40°C is abnormally high. (GCD) 10% Distillation Point is marginally high. (GCD) 50% Distillation Point is marginally high. COC Flash Point is marginally low. Viscosity has increased. Check heating temperature and system operating temp to confirm proper operation. Resample in 200 hrs to check system condition. (GCD) 90% Distillation Point is severely high. Visc @ 40°C is abnormally high. (GCD) 10% Distillation Point is marginally high. (GCD) 50% Distillation Point is marginally high. COC Flash Point is marginally low.
01/04/12	Similar to System #3, the oil has a certain amount of solids in it. The Total Acid Number is getting up there (0.17 currently), which means the oils are going through oxidation process. Topping up with our Calflo AF as per Joe Quaranta's directive will help retard the fluid oxidation by providing a fresh boost of anti-oxidants. Resample once per year.



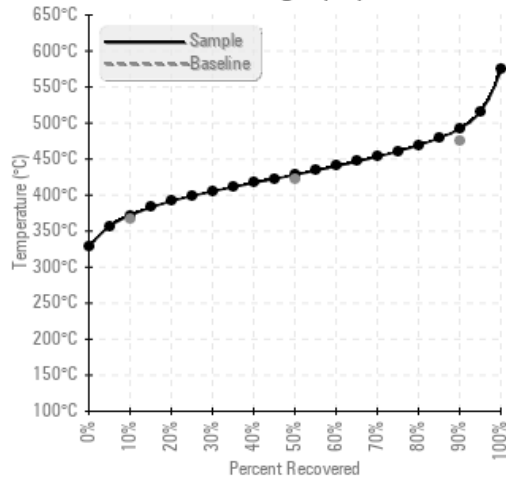
### Sample Rating Trend



### GCD Spectrum



### Gas Chromatography Distillation



### % Boiling < 335°C

