

# 1531 HOT OIL EXP TANK

**Customer: PTRHTF10083**  
 KAO SPECIALTIES AMERICAS LLC  
 243 WOODBINE ST/PO BOX 2316  
 HIGH POINT, NC 27260 USA  
 Attn: ROBERT WILLIAMS  
 Tel: (336)878-4225  
 E-Mail: rwilliams@ksallc.com

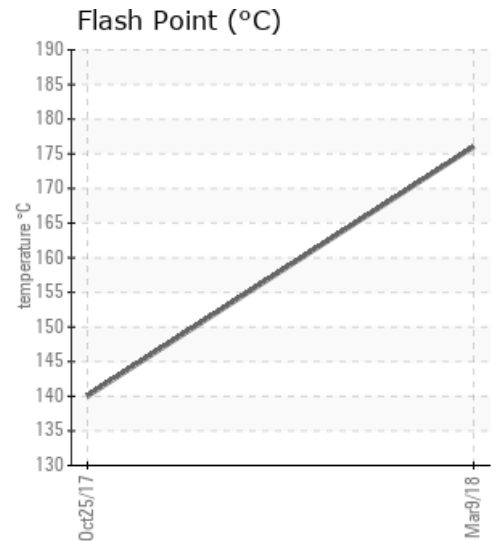
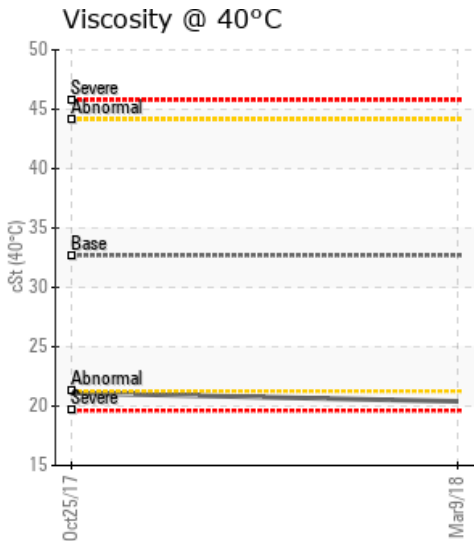
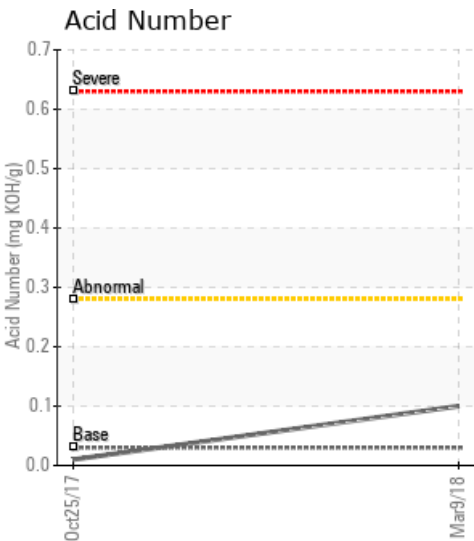
**System Information**  
 System Volume: 500 gal  
 Bulk Operating Temp: 550F / 288C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO AF  
 Make: FIRST THERMAL

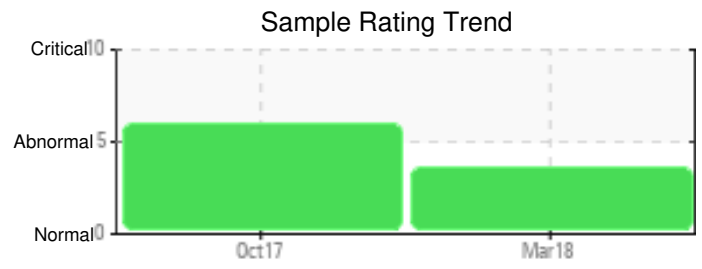
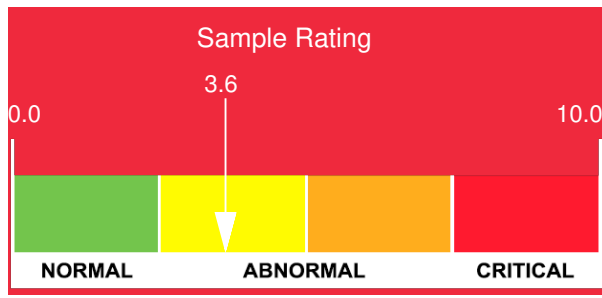
**Sample Information**  
 Lab No: 02205772  
 Analyst: Manny Garcia  
 Sample Date: 03/09/18  
 Received Date: 03/22/18  
 Completed: 03/29/18  
 To discuss this report contact Manny Garcia at 954-384-7259

**Recommendation:** Oil condition has declined in the last 4 months. Flash point has improved which is the most critical of the concerning parameters. 'Venting' the system may assist in correcting some of the parameters. If any filter changes or filtration of oil is performed to clean up the oil or any other maintenance, please re-send sample for lab analysis.

**Comments:** Iron ppm levels are abnormal at 133ppm from 0 on previous sample Pentane Insolubles levels are severely high and have increased by almost 5 times. COC Flash Point is abnormally low although an improvement from the previous sample has been noticed of 36oC. Visc @ 40°C is abnormally low by a full grade or 12 Cst @40oC

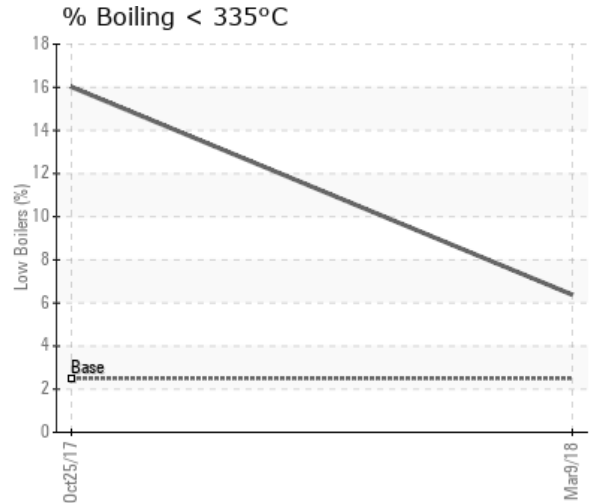
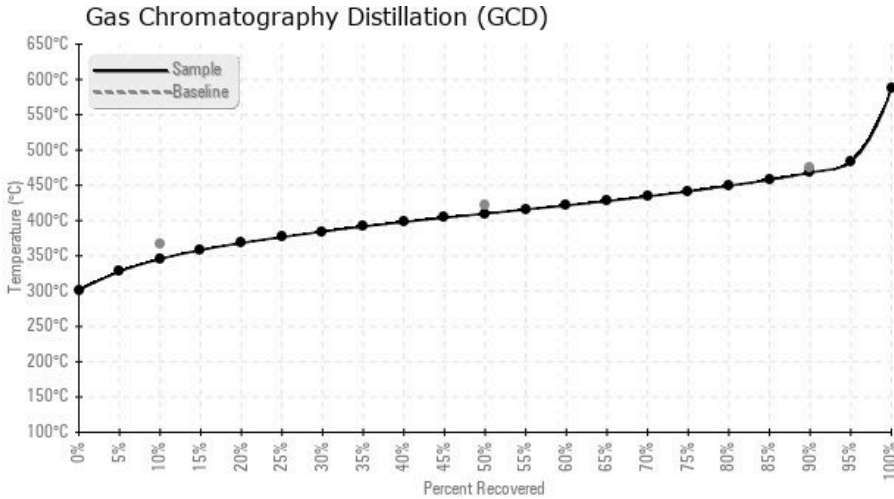
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/09/18	03/22/18	4y		349 / 176	8.5	20.4	0.10	1.46	654 / 346	770 / 410	875 / 468	6.38
10/25/17	02/23/18	13y		284 / 140	7.5	21.1	0.01	0.307	561 / 294	772 / 411	886 / 475	16.02
<b>Baseline Data</b>				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
03/09/18	133	0	0	0	0	0	0	1	0	0	4	4	0	0	0	0	1	0	1	0	1	0	107	1
10/25/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	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

10/25/17	Fluid may have reached its useful life. Thermal and oxidative life may have been exhausted due to the severe laboratory parameters. Recommended drain, flush and re-fill with virgin Petro-Canada Calflo AF fluid. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. This is the most concerning as 140oC flash point is 84oC below design parameters. (GCD) % < 335°C is abnormally high. Visc @ 40°C is abnormally low. Silt is evident in the sample. Condition of the fluid is very poor.
----------	--