

[ASPEN LEAF ENERGY / 10-22-50-26W4] HEAT TRANSFER

Customer: PTRHTF20174

Quadra Chemicals
 700 4th Ave S.W Suite 470
 Calgary, AB T2P 3J4 Canada
 Attn: Quadra Samples
 Tel:
 E-Mail: quadra_samples@quadra.ca

System Information

System Volume: 12069 ltr
 Bulk Operating Temp: 376F / 191C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: ALCO

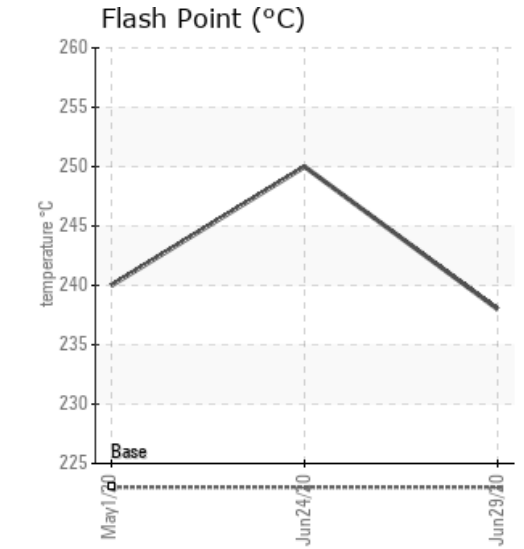
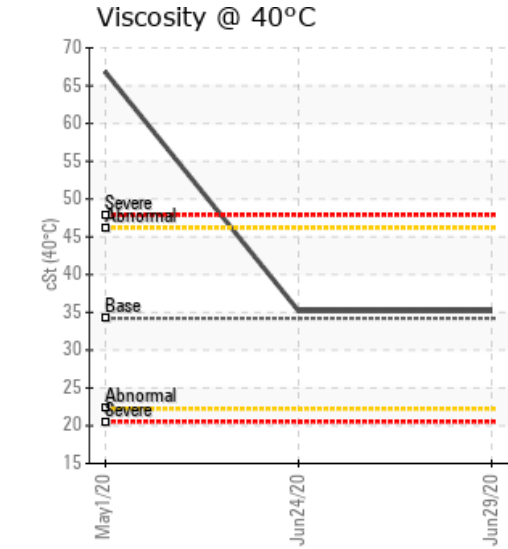
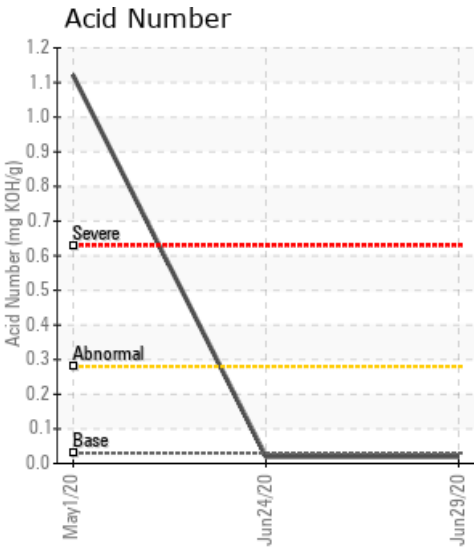
Sample Information

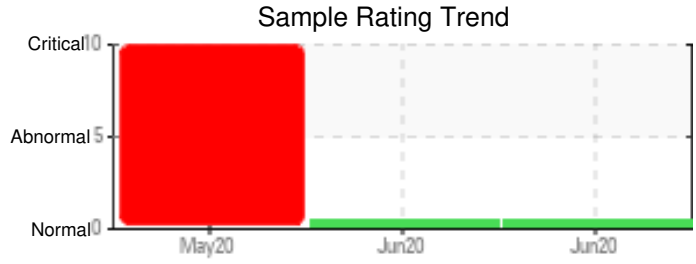
Lab No: 02364499
 Analyst: Terry Veenstra
 Sample Date: 06/29/20
 Received Date: 07/14/20
 Completed: 07/16/20
 Terry Veenstra
 terry.veenstra@petrocanadalsp.com

Recommendation: This sample is in good condition, Insolubles are low, Flashpoint is high, TAN is low. GCD is in the range of new oil. Resample in 6 months

Comments:

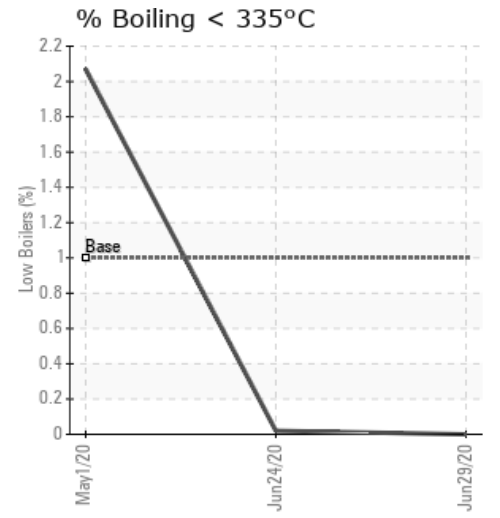
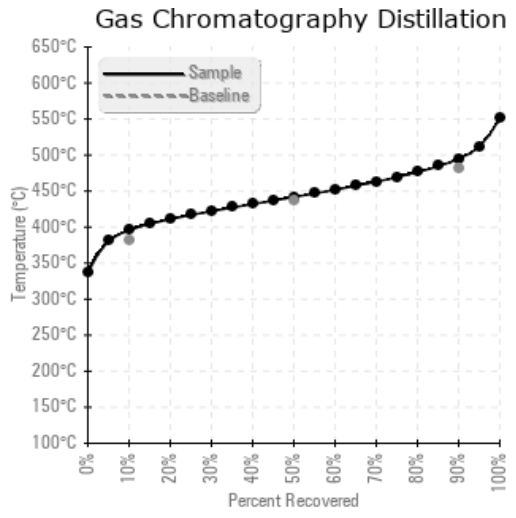
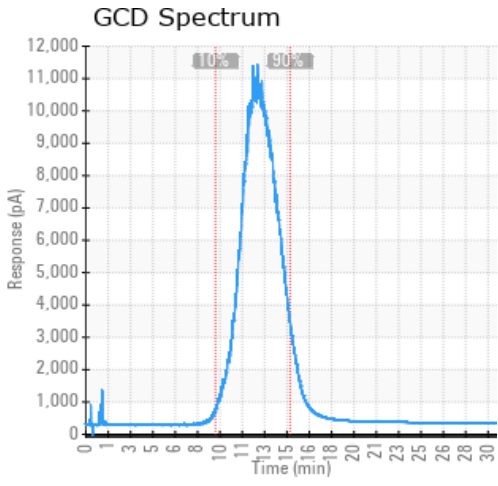
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/29/20	07/14/20	120h		460 / 238	92.0	35.2	0.02	0.047	744 / 396	827 / 442	923 / 495	0.00
06/24/20	07/14/20	0h		482 / 250	201.9	35.2	0.02	0.049	744 / 396	827 / 442	923 / 495	0.02
05/01/20	05/05/20	55h	SUCTION	464 / 240	192.0	66.8	1.12	2.52	733 / 390	833 / 445	932 / 500	2.07
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
06/29/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	2
06/24/20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	2
05/01/20	1157	1	0	4	0	0	0	0	0	0	1	0	0	0	0	0	14	0	1	0	2	0	0	1
Baseline Data			0	0						0			0	0					0				0	

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



Historical Comments

06/24/20	This sample is in good condition and OK for continued use. Pentane Insolubles are low and flash is high, GCD is in the range of close to new oil. Resample in 6 months
05/01/20	Fluid is in very poor condition due to severe oxidation. Very high iron content indicates corrosion. The Acid Number, viscosity and solids content also all extremely high. System will require internal cleaning and fluid replacement.

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