

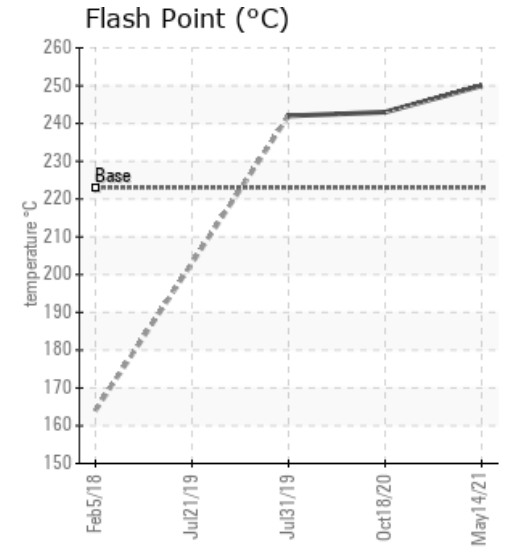
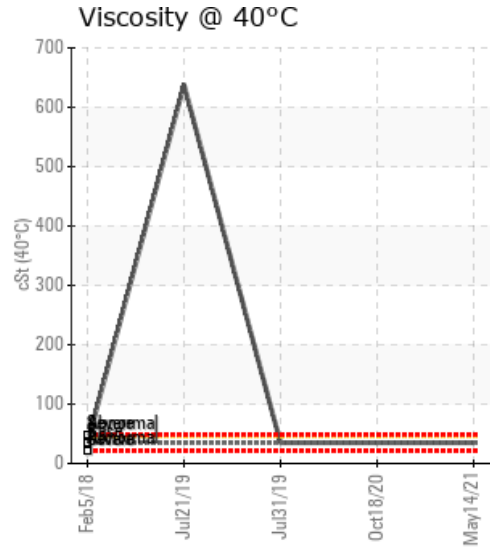
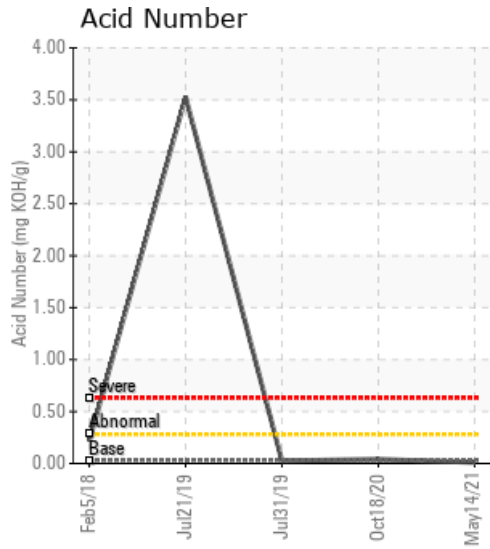
[DAIBER A-54-C/94-B-16] STABILIZER REBOILER

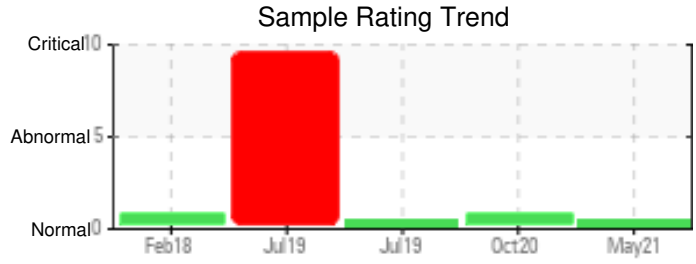
Customer: PTRHTF20194	System Information	Sample Information
KANATA ENERGY GROUP DAIBER GAS PLANT A-54-C/94-B-16 FORT ST. JOHN, BC V1J 0H8 Canada Attn: Jason Carew Tel: (250)261-9197 E-Mail: jason.carew@kanataenergy.com	System Volume: 5580 ltr Bulk Operating Temp: 293F / 145C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: ALCO GAS & OIL	Lab No: 02425926 Analyst: Clinton Buhler Sample Date: 05/14/21 Received Date: 06/08/21 Completed: 06/11/21 Clinton Buhler Clinton.Buhler@hollyfrontier.com

Recommendation: Sample results indicate that the fluid is suitable for continued service. Please note that the system site glass sample location may not be representative of system condition; please sample from a hot, turbulent zone such as pump discharge in 12 months

Comments:

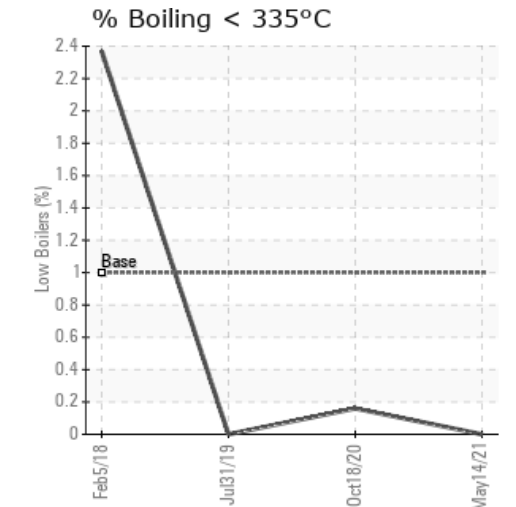
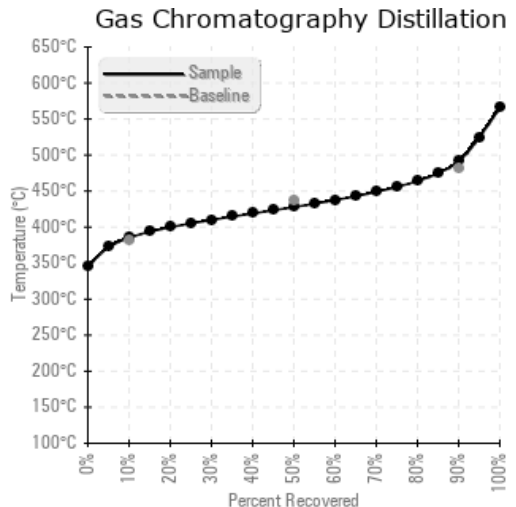
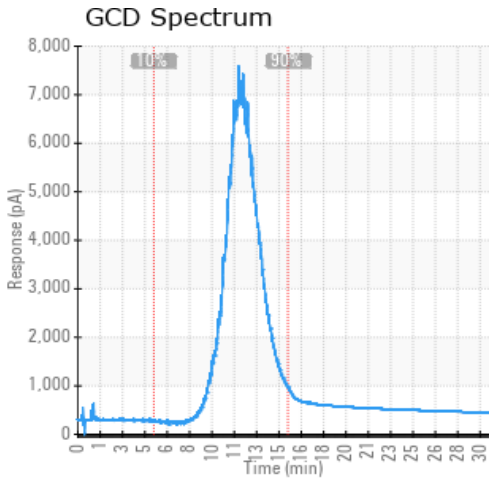
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/14/21	06/08/21	24.0m	sightglass	482 / 250	0.00	34.9	0.01	0.007	725 / 385	802 / 428	916 / 491	0.00
10/18/20	12/01/20	19.0m	sight glass	469 / 243	84.7	34.9	0.04	0.106	735 / 391	819 / 437	922 / 495	0.16
07/31/19	08/13/19	6.0m	SITE GLASS	468 / 242	29.8	34.9	0.026	0.084	717 / 380	786 / 419	886 / 475	0.00
07/21/19	07/22/19	6.0m	BOTTOM DRAIN		900000	638	3.53					
02/05/18	02/26/18	3.1m		327 / 164	159.7	34.8	0.214	0.263	707 / 375	808 / 431	912 / 489	2.37
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	
05/14/21	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
10/18/20	13	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
07/31/19	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	
07/21/19																									
02/05/18	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	
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	
10/18/20	Sample results indicate that the fluid is suitable for continued service. Please re-sample in 12 months
07/31/19	Sample results indicate that the heat transfer fluid is suitable for continued service. It was prudent that the fluid was re-sampled after the July 21, 2019 results as these new results show the fluid to be very healthy and free of contaminants. Please re-sample in 12 months
07/21/19	*** Diagnostician's Note: This sample is mostly water. Suggest the client drain off the water from the reservoir, then take a more representative sample. ***An immediate re-sample is required! Excess water in system. Please note that the fluid's acidity and viscosity is excessive and may not be representative. Please re-sample immediately. Please draw sample from most representative area of the heater vessel as possible. First drain all free water from system. Follow this by a purge of at least 20 liters of fluid until the fluid coming out is hot per normal operating temperatures. Collect sample and submit to the lab for analysis and Petro-Canada Technical Services will review and provide recommendations. Water contamination levels are severely high. ppm Water contamination levels are severely high. Acid Number (AN) is severely high. Visc @ 40°C is severely high.
02/05/18	sample results indicate that the fluid is suitable for continued service. However, the reduced flash point, and slightly increased GCD % < 335°C can be indications of thermal degradation (cracking of the fluid molecules creating light ends). To help bring the flash point closer to new spec, perform a venting regime of the expansion tank. During venting, turn off the blanket gas to allow the light end vapors to escape. Re-sample in 6 months. Please ensure sample point is from a fluid zone most representative of system condition and that a thorough purge precedes the sample. COC Flash Point is abnormally low.

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