



VEOLIA NORTH AMERICA CHICAGO BIOSOLIDS

Customer: PTRHTF30090	System Information	Sample Information
VEOLIA NORTH AMERICA 6001 W. PERSHING RD CICERO, IL 60804 USA Attn: Richard Jania Tel: (708)652-0575 E-Mail: richard.jania@veolia.com	System Volume: 38200 gal Bulk Operating Temp: 585F / 307C Heating Source: Blanket: Fluid: PARATHERM HE Make: GTS ENERGY INC	Lab No: 02060082 Analyst: Gaston Arseneault Sample Date: 03/11/16 Received Date: 03/21/16 Completed: 04/07/16 Gaston Arseneault gaston.arseneault@petrocanadalsp.com

Recommendation: The fluid contains a fair amount of low boilers, which contribute to the reduced viscosity (about 50% down from fresh oil) and lower flash point (also about 50% of fresh oil). Although 2.67% low boilers doesn't sound alarming, multiplied by 38,000 gallons that means ~1000 gallons of low flash point hydrocarbons in the fluid. We suggest to perform venting to remove those low boilers and replace the loss by adding fresh oil.

Comments: (GCD) 10% Distillation Point is severely high. COC Flash Point is severely low. Visc @ 40°C is severely low. (GCD) 90% Distillation Point is abnormally high.

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	%
03/11/16	03/21/16	9y	#1 SECONDARY LOOP	216 / 102	0.1	24.5	0.06	0.044	811 / 433	887 / 475	980 / 527	2.67
Baseline Data				410 / 210		45	0.004		725 / 385		945 / 507	0.74



