



### [3-09-81-16W6] HOT OIL PH1

Customer: PTRHTF20257	System Information	Sample Information
ARC RESOURCES LTD. 721 HIGHWAY 2 DAWSON CREEK, BC V1G 0B8 Canada Attn: Elliot MacTavish Tel: (250)219-0874 E-Mail: emactavish@arcresources.com	System Volume: 35000 ltr Bulk Operating Temp: 210F / 99C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: HEATECH	Lab No: 02434765 Analyst: Clinton Buhler Sample Date: 07/16/21 Received Date: 07/23/21 Completed: 08/04/21 Clinton Buhler Clinton.Buhler@hollyfrontier.com

Recommendation: Sample results indicate that the fluid is in suitable condition for continued service. It is understood that this system is a blend of Sun Oil 21 and Petro-Therm and we can see that in the results: the fluid's viscosity, 10% and 50% GCD temperature and flash point are elevated over new Petro-therm yet there aren't obvious signs of fluid degradation (Acid Number is low and solids content acceptable). The mixture of fluids can, unfortunately, make it more difficult to identify thermal degradation. Please re-sample 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	%
07/16/21	07/23/21	10.0y	downstream of pump	471 / 244	7.3	47.7	0.07	0.160	791 / 422	852 / 456	902 / 483	0.28
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00



