



HOT OIL HEATER ABQ-2

Customer: PTRHTF10213	System Information	Sample Information
HOLLY FRONTIER ASPHALT 4949 EDITH BLVD N.E. ALBUQUERQUE, NM 87107 USA Attn: Luis A Contreras Tel: (316)323-4680 E-Mail: luis.contreras@hollyfrontier.com	System Volume: 650 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: MONSANTO THERMINOL 55 Make: INDUSTRIAL COMBUSTIO	Lab No: 02267071 Analyst: Matthew Hoeffner Sample Date: 10/18/18 Received Date: 02/11/19 Completed: 02/26/19

Recommendation: Fluid acid numbers are very high as well as the pentane insolubles which both indicate a severely degraded fluid. The fluid also appears to have been topped off with different chemistry than the Therminol 55 believed to be present. To prevent issues with reliability and operations going forward planning should begin for cleaning the system and refilling with fresh fluid.

Comments: Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. (GCD) 90% Distillation Point is severely high. Calcium ppm levels are severely high. Visc @ 40°C is severely high. COC Flash 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	%
10/18/18	02/11/19	15y	TK151 COIL DRAIN VAL	421 / 216	85.5	47.5	1.42	3.25	652 / 344	756 / 402	884 / 473	5.49
Baseline Data				349 / 176		19.0	0.03		655 / 346		790 / 421	3.40



