

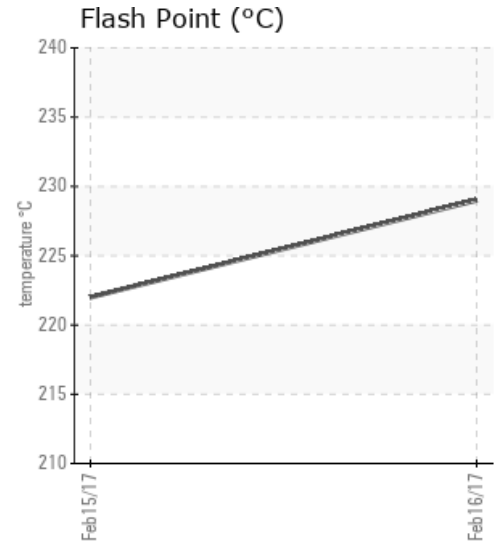
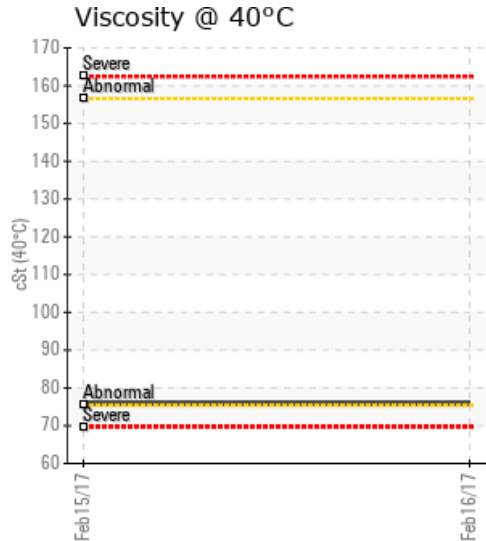
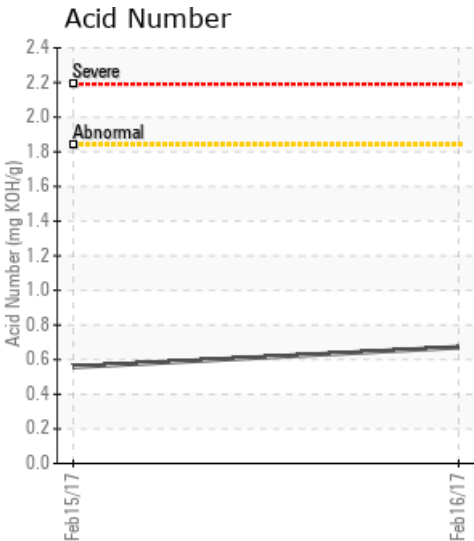
HEAT TRANSFER

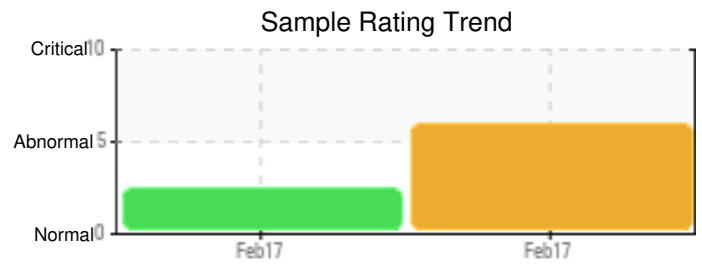
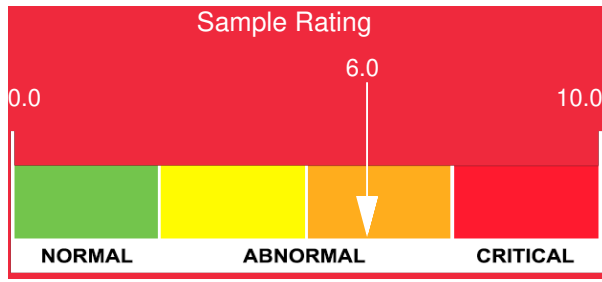
Customer: PTRHTF10185	System Information	Sample Information
Bitumar USA Inc 29 Terminal Road Providence, RI 02905 USA Attn: Dennis Leamy Tel: E-Mail: dleamy@hudsoncompanies.com	System Volume: 28000 gal Bulk Operating Temp: 490F / 254C Heating Source: Blanket: Fluid: N/A Make: WELLS CORP.	Lab No: 02129318 Analyst: Doug Vrooman Sample Date: 02/16/17 Received Date: 02/24/17 Completed: 03/15/17

Recommendation: Analysis show and flag high viscosity at 75.8@ 40 degrees C. Fluid is assumed to be a rebrand of Chevron Heat Transfer fluid with viscosities of either 22 or 46, as it is believed that Ocean State does not produce their own HTF. High viscosity could be the result of current or past Asphalt leak into the system, this is also further supported by the flagged solid content -(Pentane Insolubles) at 2.30 which is, normal would be .5 or below. GCD 90% - 529.1 and is flagged. Fluid is heavy with solids and/or residues from current or past asphalt leak, again consistent with the 2.30 value of Pentane Insolubles. Pentane Insolubles levels are severely high. (GCD) 90% Distillation Point is abnormal.

Comments: Pentane Insolubles levels are severely high. (GCD) 90% Distillation Point is abnormal.

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	%
02/16/17	02/24/17	10y	2 HRS AFTER SHUTDOWN	444 / 229	78.0	75.8	0.671	2.30	726 / 386	851 / 455	984 / 529	1.33
02/15/17	02/24/17	10y		432 / 222	63.1	75.8	0.558	2.48	716 / 380	841 / 450	978 / 526	2.09
Baseline Data				32 / 0								

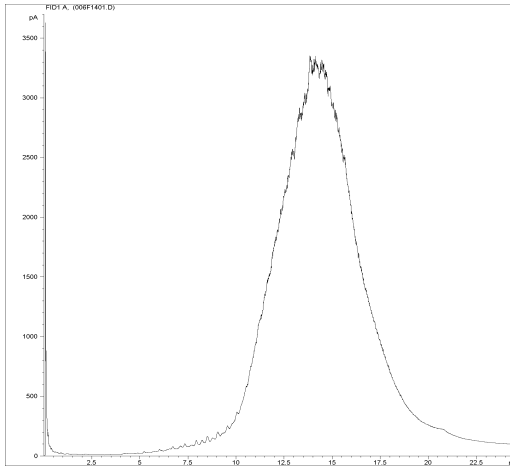




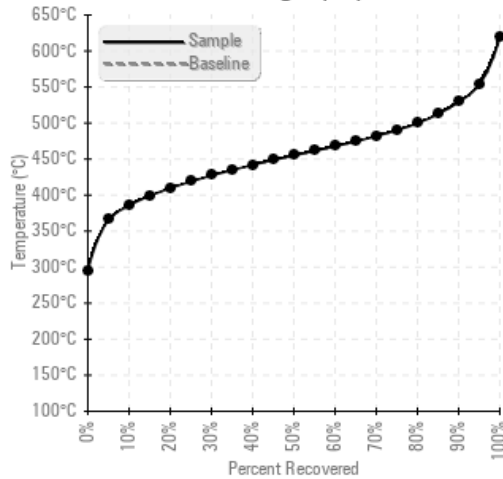
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
02/16/17	80	0	1	0	2	0	0	0	0	1	1	2	0	0	0	0	1	0	2	0	3	0	2	2
02/15/17	79	0	1	0	2	0	0	0	0	1	1	1	0	0	0	0	1	0	2	0	3	0	2	2
Baseline Data													0						0				0	

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

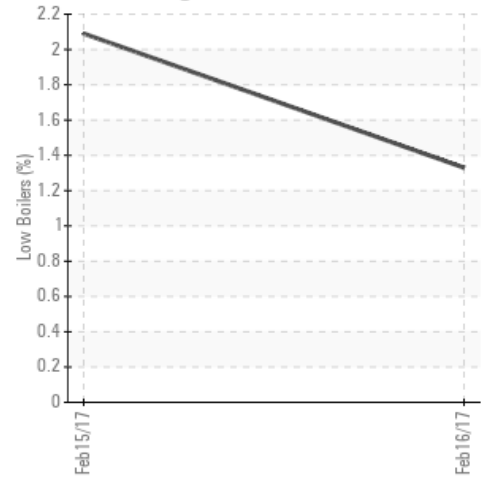
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

02/15/17	Analysis show and flag high viscosity at 75.8@ 40 degrees C. Fluid is assumed to be a rebrand of Chevron Heat Transfer fluid with viscosities of either 22 or 46, as it is believed that Ocean State does not produce their own HTF. High viscosity could be the result of current or past Asphalt leak into the system, this is also further supported by the flagged solid content -(Pentane Insolubles) at 2.48 which is, normal would be .5 or below. GCD 90% - 525.6 and is flagged. Fluid is heavy with solids and/or residues from current or past asphalt leak, again consistent with the 2.48 value of Pentane Insolubles. Pentane Insolubles levels are severely high. (GCD) 90% Distillation Point is abnormal.
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