

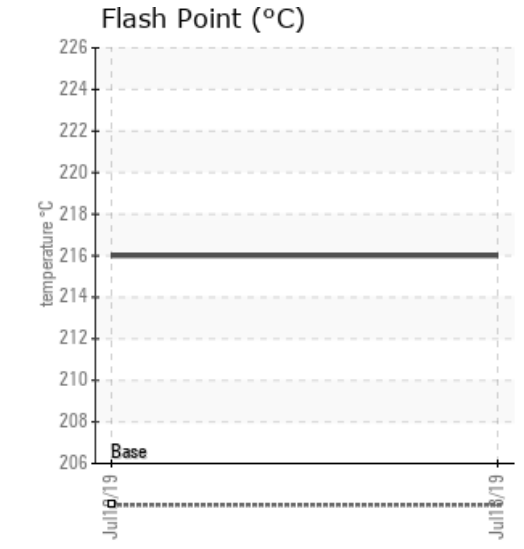
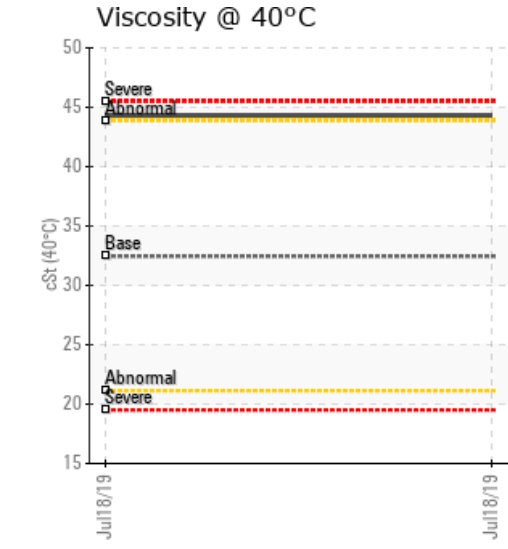
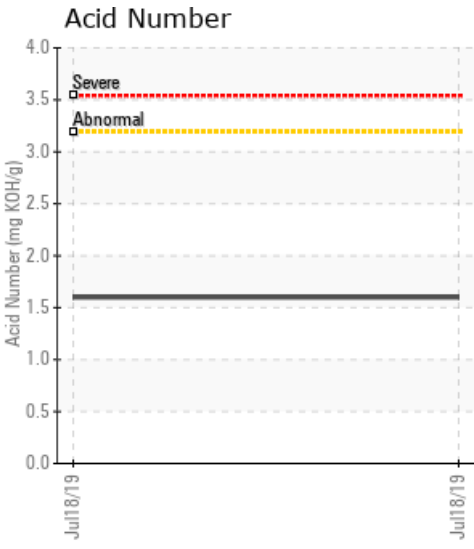
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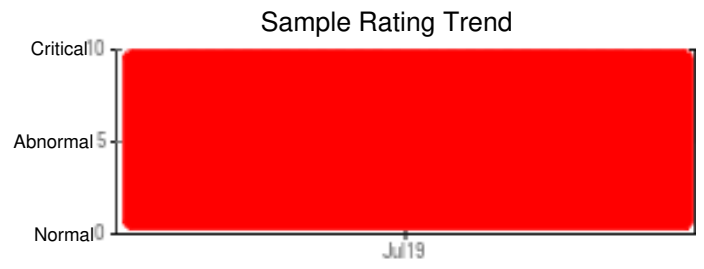
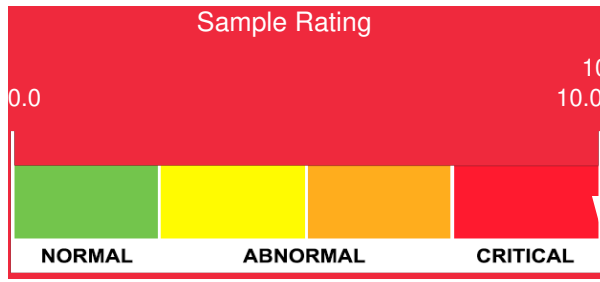
Customer: PTRHTF20215	System Information	Sample Information
McAsphalt Industries LTD 600 Arcola Ave Regina, SK S4N 0S5 Canada Attn: Joe Nurkowsky Tel: (306)781-6960 E-Mail: jnurkowski@mcasphalt.com	System Volume: 15000 ltr Bulk Operating Temp: 338F / 170C Heating Source: Blanket: Fluid: ESSO THERMOIL 32 Make: HEATEC	Lab No: 02298693 Analyst: Yutong Gao Sample Date: 07/18/19 Received Date: 07/23/19 Completed: 07/29/19 Yutong Gao yutong.gao@HFSinclair.com

Recommendation: The current fluid Therm Oil 32 has extremely high Acid Number and Viscosity comparing with the fresh fluid indicating the oil has been oxidized and creating the tremendous solids and deposits in the system. The heat transfer coefficient is reduced because of the oil oxidation and deposits. Please arrange the fluid change as soon as possible. A system inspection is also recommended to determine if a system cleaning or flushing is needed.

Comments: Iron ppm levels are abnormal. Potassium ppm levels are severely high. Solid levels are severely high. Visc @ 40°C is high.

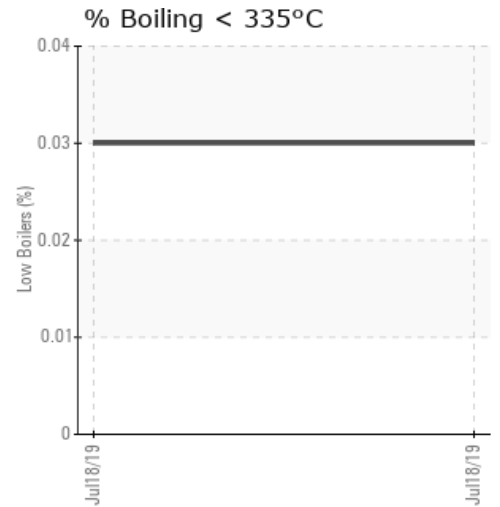
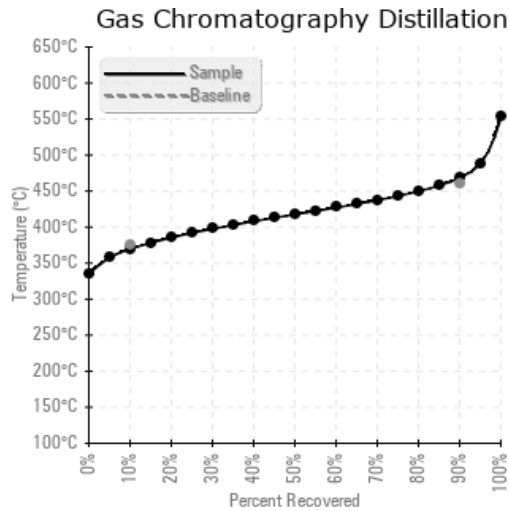
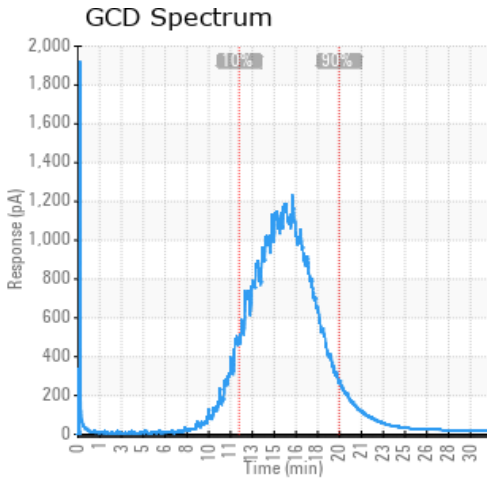
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/18/19	07/23/19	8.0y	SYSTEM LINE	421 / 216	61.0	44.3	1.60	1.82	697 / 369	784 / 418	875 / 468	0.03
Baseline Data				399 / 204		32.45			705 / 374		858 / 459	





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
07/18/19	202	0	0	0	0	0	0	0	0	0	0	11	41	0	0	0	4	0	0	0	1	0	2	2
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

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