

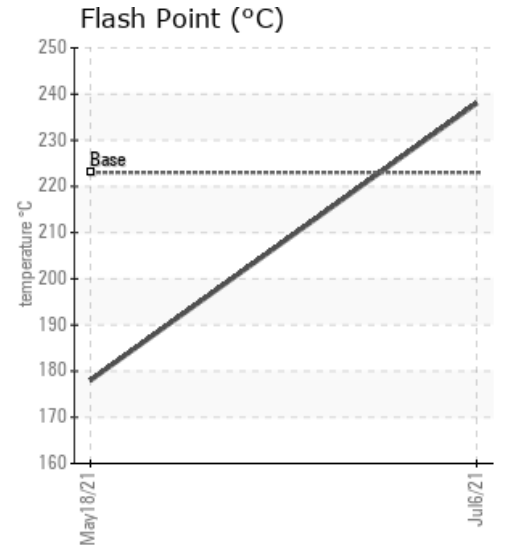
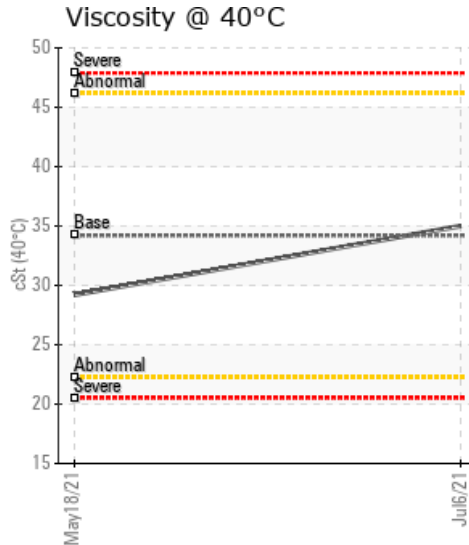
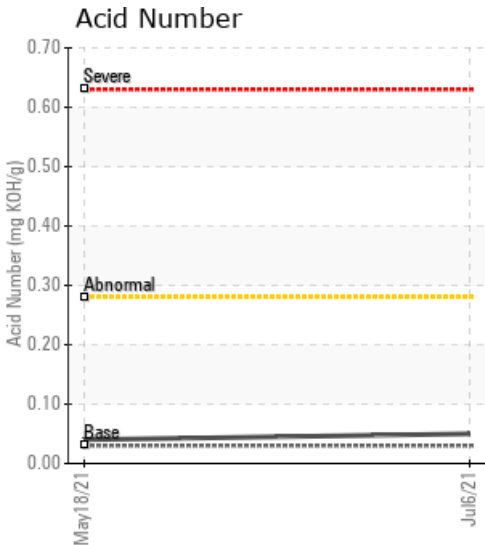
## [BRAZEAU LOAD 3 / LSD: 9-6-63-25-W5] RE4 STORAGE TANK

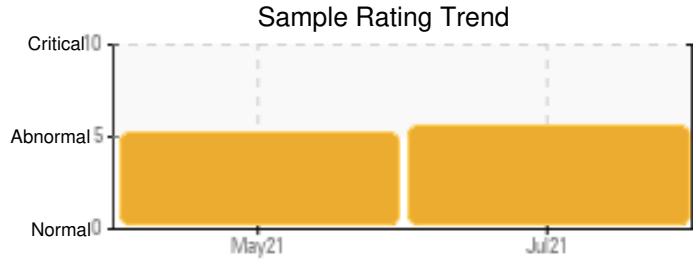
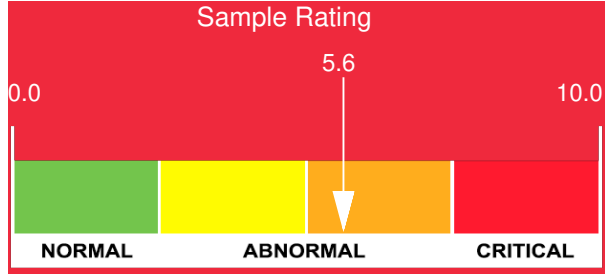
Customer: PTRHTF20187	System Information	Sample Information
KEYERA ENERGY- SIMONETTE GAS PLANT PO BOX 58 VALLEYVIEW, AB T0H 3N0 Canada Attn: Iain Hamilton Tel: (403)651-2408 E-Mail: Iain_Hamilton@keyera.com	System Volume: 20000 ltr Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02433308 Analyst: Clinton Buhler Sample Date: 07/06/21 Received Date: 07/16/21 Completed: 07/27/21 Clinton Buhler Clinton.Buhler@hollyfrontier.com

Recommendation: The fluid is contaminated with excess water (1623 ppm and 0.2% emulsified water). If this sample is representative, there is risk of boil-over once put into service. High water content also is a catalyst for fluid oxidation and additive hydrolysis. It is advised to remove water from the fluid before use and before long-term storage.

Comments:

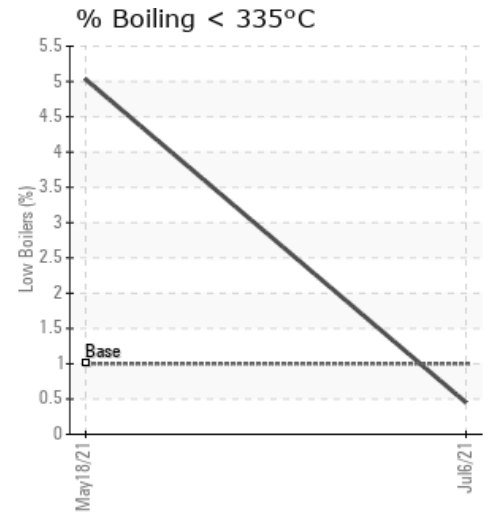
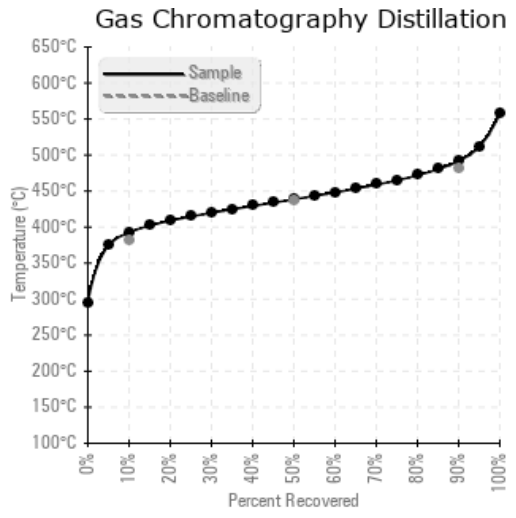
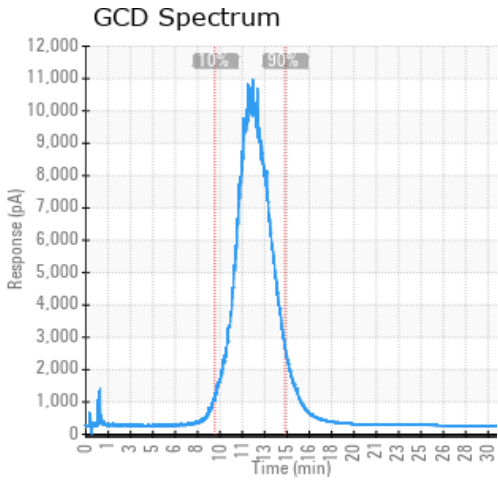
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/06/21	07/16/21	0.0h		460 / 238	1623.5	35.0	0.05	0.165	739 / 393	821 / 439	917 / 492	0.45
05/18/21	06/08/21	0.0h	Truck 1 - delivery	352 / 178	6552.4	29.2	0.04	0.013	688 / 365	793 / 423	902 / 484	5.03
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
07/06/21	0	0	0	0	0	0	0	0	0	0	0	2	8	0	0	0	0	0	3	0	0	0	3	2
05/18/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
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

05/18/21	The fluid is contaminated with excess water (6552 ppm and 1% emulsified water). If this sample is representative, there is risk of boil-over once put into service. High water content also is a catalyst for fluid oxidation and additive hydrolysis. It is advised to remove water from the fluid before use and before long-term storage. 5% low boiling vapor content, reduce flashpoint and fluid viscosity likely indicate mixing with process hydrocarbon if not from thermal degradation. This fluid would need to be vented once in service to remove low boiling vapors. Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. COC Flash Point is abnormally low.

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