

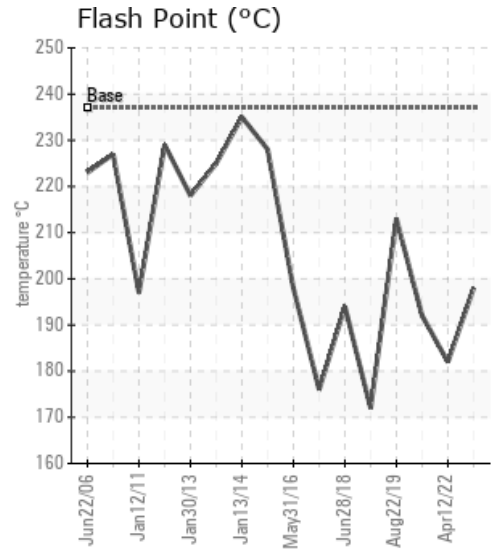
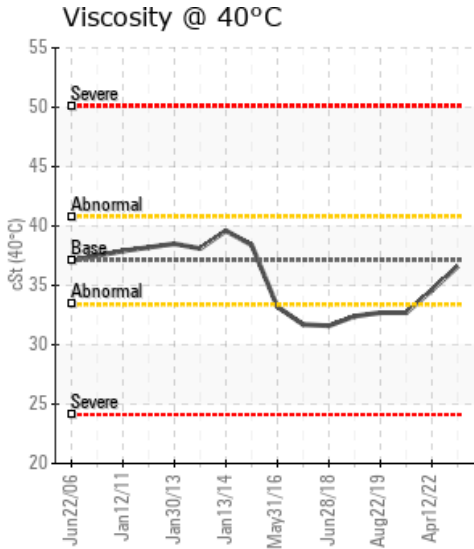
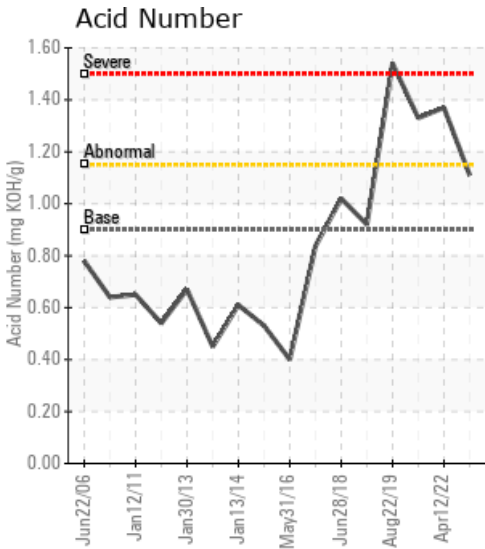
[Kings Cupboard] B300 GROEN

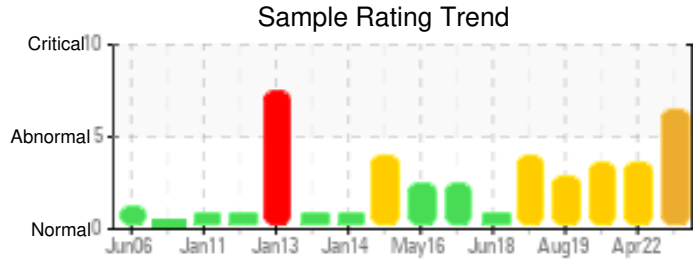
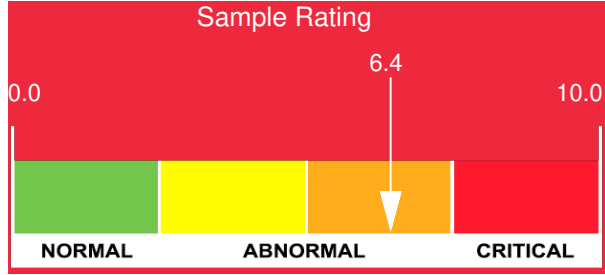
Customer: PTRHTF10078	System Information	Sample Information
WEST FORK CREATIONS 15 PEPSI DRIVE RED LODGE, MT 59068 US Attn: Becky Rietz Tel: (406)426-3060 E-Mail: foodsafety@kingscupboard.com	System Volume: 70 gal Bulk Operating Temp: 475F / 246C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: STERLCO	Lab No: 02639037 Analyst: Ron LeBlanc Sample Date: 05/20/24 Received Date: 05/30/24 Completed: 06/10/24 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

Recommendation: Sample indicates Flashpoint is low. The (GCD) 10% Distillation Point is abnormally low. Pentane insolubles indicates possible varnish/sludge deposits. The sample almost appears to have been taken without proper purging before collection. Take another sample to confirm results we see here after purging properly.

Comments: Pentane Insolubles levels are severely high. Potassium ppm levels are abnormally high. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high. COC Flash Point is marginally low.

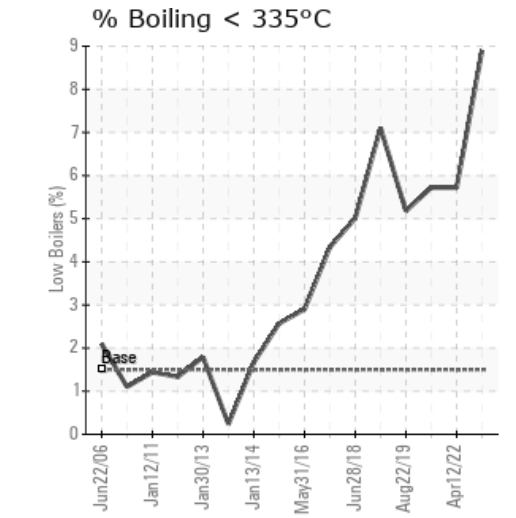
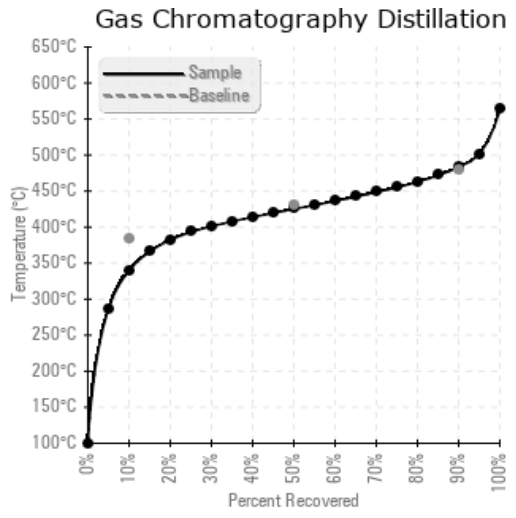
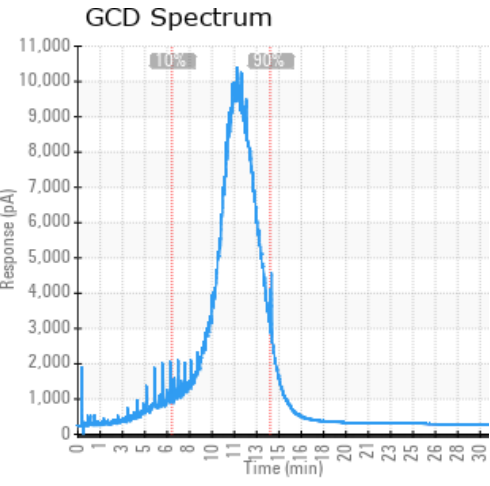
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/20/24	05/30/24	0.0m	back drain valve	388 / 198	120	36.6	1.11	4.48	644 / 340	797 / 425	902 / 483	8.90
04/12/22	08/03/22	12.0m	drain	360 / 182	117.2	34.6	1.37	2.97	683 / 362	805 / 429	905 / 485	5.72
10/29/20	11/11/20	0.0m	Drain	378 / 192	61.4	32.7	1.33	1.08	686 / 363	804 / 429	905 / 485	5.72
08/22/19	09/06/19	6.0m	DRAIN	415 / 213	64.5	32.7	1.54	0.597	685 / 363	801 / 427	900 / 482	5.18
07/22/19	08/01/19	0.0m	DRAIN VALVE	342 / 172	74.5	32.4	0.920	0.618	664 / 351	792 / 422	895 / 480	7.11
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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
05/20/24	14	0	0	0	0	0	0	0	0	0	7	0	33	0	0	0	0	0	0	2	0	0	173	1
04/12/22	7	0	0	0	0	0	0	0	0	0	5	0	20	0	0	0	0	0	0	0	0	0	166	1
10/29/20	4	0	0	0	0	0	0	0	0	0	4	0	11	0	0	0	0	0	0	0	0	0	158	0
08/22/19	1	0	0	0	0	0	0	0	0	0	4	0	6	0	0	0	0	0	0	0	0	0	161	0
07/22/19	2	0	0	0	0	0	0	0	0	0	4	0	7	0	0	0	0	0	0	0	0	0	159	0
Baseline Data			0	0						0			0	0				0	0				230	

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



Historical Comments	
04/12/22	Pentane Insolubles levels are severely high. ORGANIC AND INORGANIC SOLIDS ARE DETERMINED. Organic solids usually come from oxidation. Inorganic solids such as iron (rust, corrosion or erosion of piping) or contamination. Acid Number (AN) is abnormally high. Measure of acidic compounds in the oil. These acids would normally come from oil oxidation unless an acidic contaminant enters the oil. COC Flash Point is abnormally low. Resample in 1 month: Be sure to purge a good amount of oil before collecting sample. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high. COC Flash Point is abnormally low.
10/29/20	The sample indicates very high pentane insolubles. The flash point has dropped from previous samples. This could be from lighter fractions boiled off. The flash point, Acid Number and insolubles might indicate not enough fluid was purged before the sample was taken. Take another sample and make sure oil is purged before capturing the sample. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high. COC Flash Point is abnormally low.
08/22/19	Acid number is elevated. COC Flash Point is rising back to normal. Pentane insoluble stayed about the same as previous sample. Take another sample in 3 months. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high.
07/22/19	COC Flash Point is severely low. Pentane insoluble has risen in last 3 samples. Possible process leak? Be sure to purge the system before taking sample. Resample and check results. Oil could have been heated too high or too quickly if shut down and started back up. Add new oil to bring COC Flash Point back up. Pentane Insolubles levels are severely high. COC Flash Point is severely low. (GCD) 10% Distillation Point is marginally low.

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.