

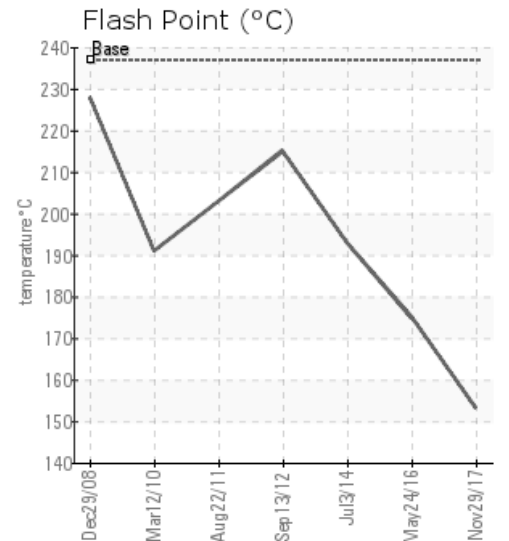
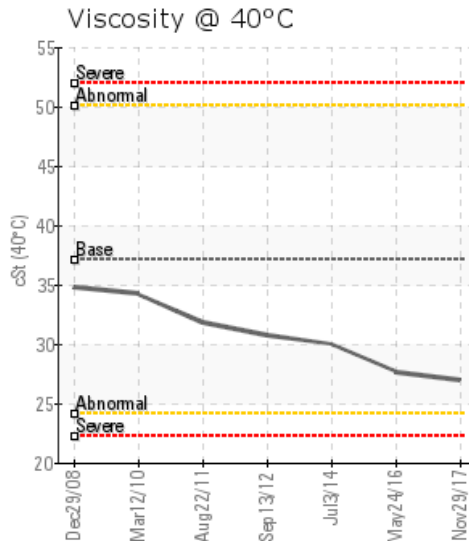
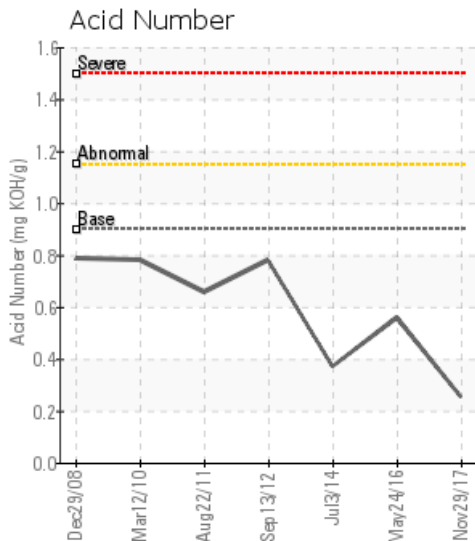
WANSON COMBI 1900

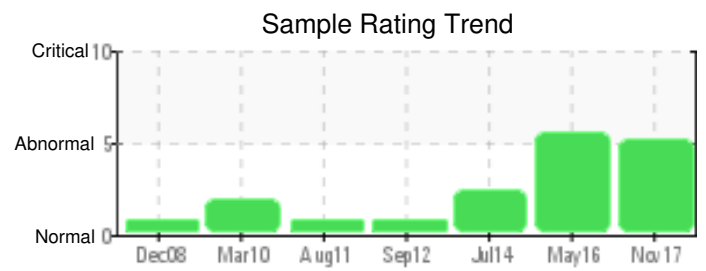
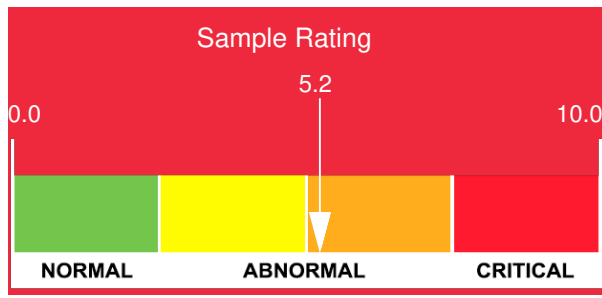
Customer: PTRHTF40035	System Information	Sample Information
GEBR HAKVOORT BV ZUIDOOSTRAK 2 FLEVOLAND URK, FLE NETHERLANDS Attn: Maintenance Manager Tel: E-Mail: w.snyenr@klt.nl	System Volume: 1600 ltr Bulk Operating Temp: 300F / 149C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02185906 Analyst: Philip Riley Sample Date: 11/29/17 Received Date: 12/05/17 Completed: 12/11/17 To discuss this report contact Philip Riley at (440)124-4378171

Recommendation: Flash Point off spec very low, insoluble high showing fluid degradation. Recommend fluid change.

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

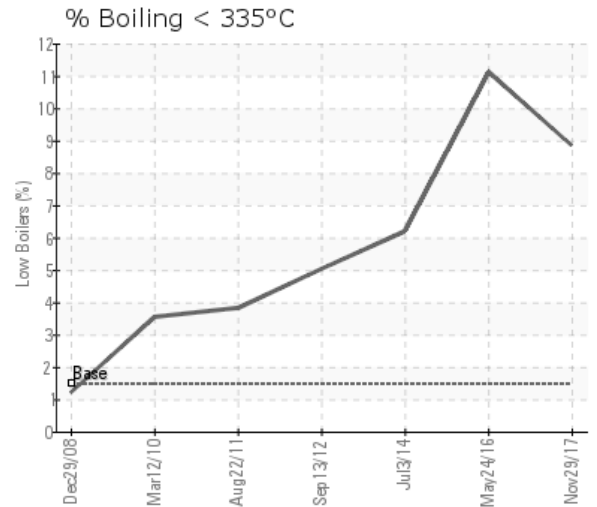
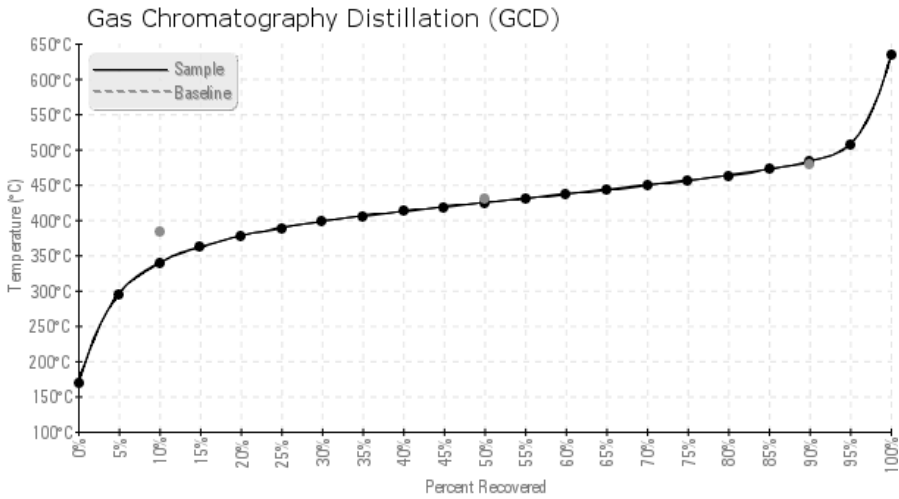
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/29/17	12/05/17	9y		307 / 153	26.5	26.9	0.253	0.463	642 / 339	796 / 424	902 / 483	8.86
05/24/16	05/27/16	8y	PTRHTF40035	347 / 175	9.7	27.7	0.559	0.339	616 / 325	790 / 421	903 / 484	11.14
07/03/14	07/11/14	5y		379 / 193	15.4	30.0	0.37	0.125	665 / 352	796 / 424	891 / 477	6.19
09/13/12	09/25/12	4y	NA	419 / 215	54	30.8	0.78	0.086	690 / 366	809 / 432	902 / 483	5.032
08/22/11	08/26/11			397 / 203	87	31.8	0.66	0.046	702 / 372	812 / 434	899 / 482	3.811
03/12/10	03/19/10	1y		376 / 191	5	34.2	0.78	0.037	702 / 372	807 / 431	888 / 476	3.537
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
11/29/17	3	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	18	0
05/24/16	8	0	0	0	1	0	0	2	0	0	3	1	0	0	0	0	0	0	0	0	2	0	25	1
07/03/14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
09/13/12	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
08/22/11	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	7	2
03/12/10	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Baseline Data			0	0						0			0	0					0				230	

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



Historical Comments

05/24/16	There are some low boilers present. Remove the low boilers if possible. Oil appears to be fit for further service. Suggest sample at next scheduled maintenance interval. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is marginally high.
07/03/14	Oil appears to be in good condition. Sample at next scheduled maintenance interval. (GCD) 10% Distillation Point is marginally low. (GCD) 90% Distillation Point is marginally low.
09/13/12	Oil is fit for further service
08/22/11	
03/12/10	