

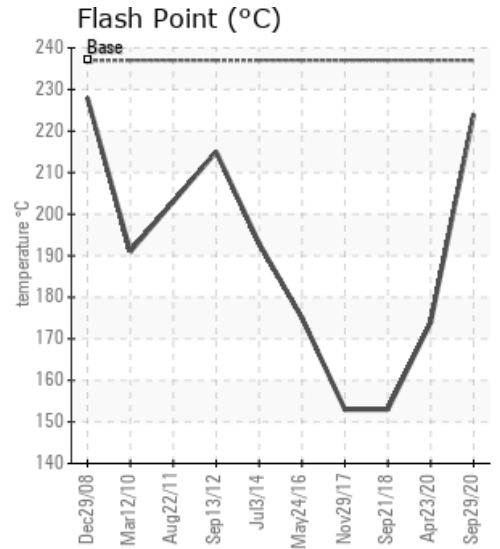
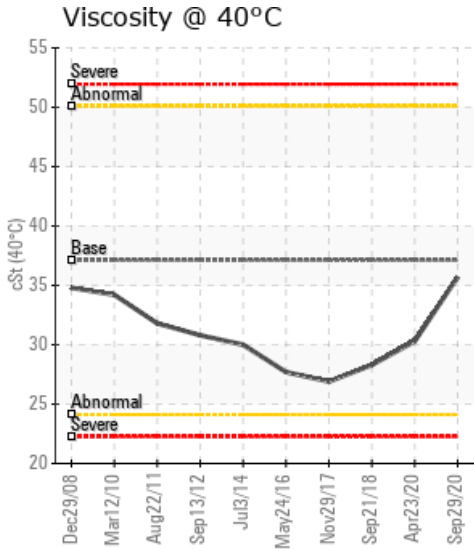
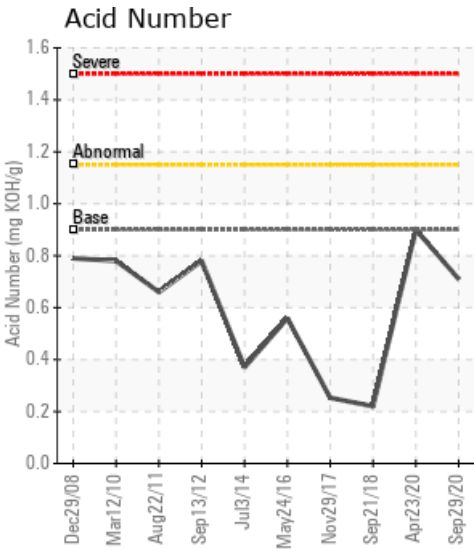
WANSON COMBI 1900

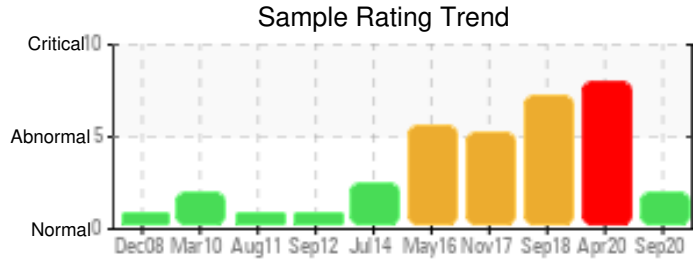
Customer: PTRHTF40035	System Information	Sample Information
GEBR HAKVOORT BV ZUIDOOSTRAK 2 FLEVOLAND URK, FLE NETHERLANDS Attn: Maintenance Manager Tel: E-Mail: w.snyenr@klt.nl	System Volume: 1600 ltr Bulk Operating Temp: 300F / 149C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02379737 Analyst: Matthias Voss Sample Date: 09/29/20 Received Date: 10/06/20 Completed: 10/08/20 Matthias Voss Matthias.Voss@petrocanadalsp.com

Recommendation: Fluid fit for further use. Send in sample at next scheduled interval.

Comments: (GCD) 90% Distillation Point is severely high.

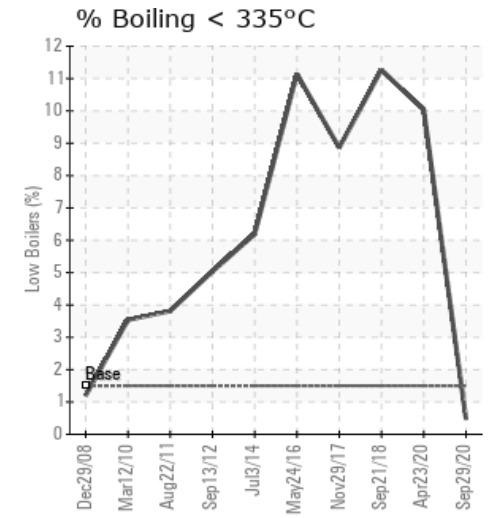
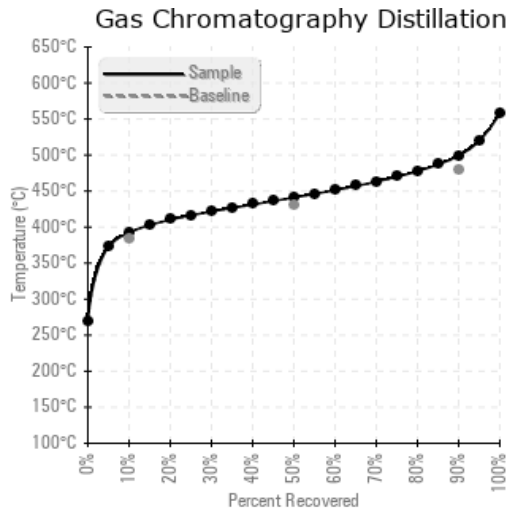
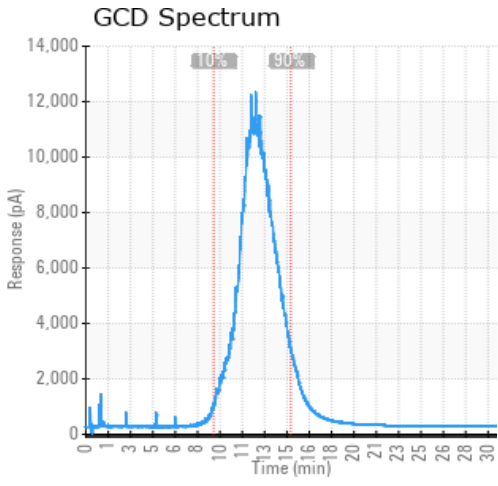
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/29/20	10/06/20	1w		435 / 224	64.5	35.7	0.71	0.147	738 / 392	826 / 441	931 / 499	0.48
04/23/20	04/30/20	12w		345 / 174	189.7	30.3	0.90	0.760	628 / 331	801 / 427	912 / 489	10.03
09/21/18	09/27/18	10w		307 / 153	59.7	28.3	0.22	0.713	611 / 322	790 / 421	892 / 478	11.27
11/29/17	12/05/17	9w		307 / 153	26.5	26.9	0.253	0.463	642 / 339	796 / 424	902 / 483	8.86
05/24/16	05/27/16	8w	PTRHTF40035	347 / 175	9.7	27.7	0.559	0.339	616 / 325	790 / 421	903 / 484	11.14
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
09/29/20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	34	0
04/23/20	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	1
09/21/18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
11/29/17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0
05/24/16	8	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	2	0	25	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

04/23/20	Although Flash Pt (COC) and GCD have improved since the last analysis, recommendation to change oil remains. The overall sample rating has got worse, insoluble have increased and this supports further fluid degradation. GCD plot shows strong evidence of cracking Pentane Insolubles levels are severely high. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally high.
09/21/18	Flash point off spec low again, sample rating and pentane insols both worse than previous year showing further fluid degradation. Recommend a fluid change at earliest opportunity Pentane Insolubles levels are severely high. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is marginally high.
11/29/17	Flash Point off spec very low, insoluble high showing fluid degradation. Recommend fluid change. 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.
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.

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