

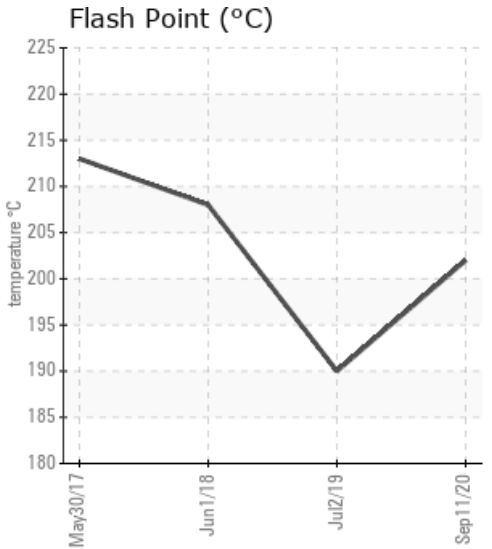
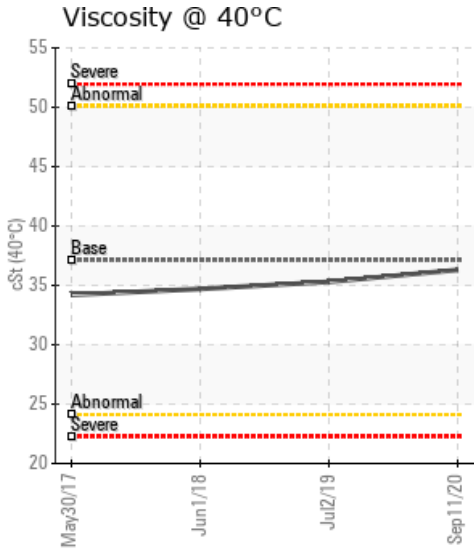
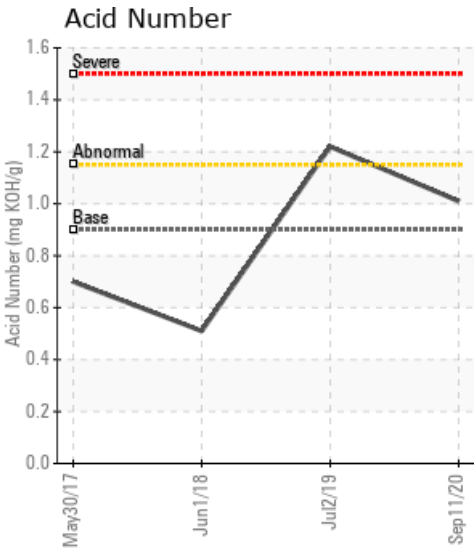
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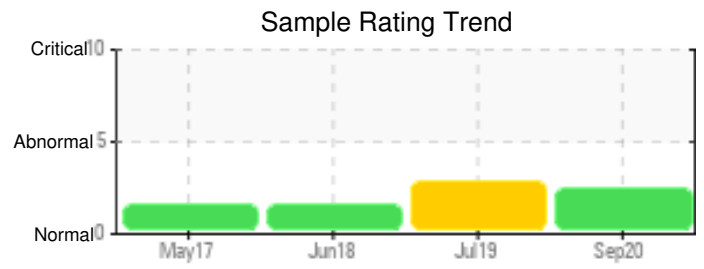
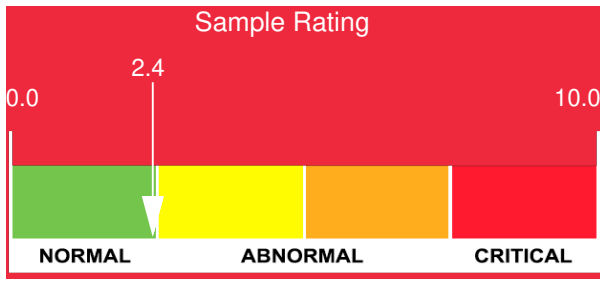
Customer: PTRHTF40007	System Information	Sample Information
BONFAIT FARADAYWEG 2 OVERIJSEL DENEKAMP, OVE NETHERLANDS Attn: Maintenance Manager Tel: E-Mail:	System Volume: 0 ltr Bulk Operating Temp: 0F / -18C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02376399 Analyst: Matthias Voss Sample Date: 09/11/20 Received Date: 09/17/20 Completed: 09/22/20 Matthias Voss Matthias.Voss@petrocanadalsp.com

Recommendation: Oil appears to be fit for further use however we note that the insoluble are very high. If possible filter the insoluble out of the oil.

Comments: Pentane Insolubles levels are severely high.

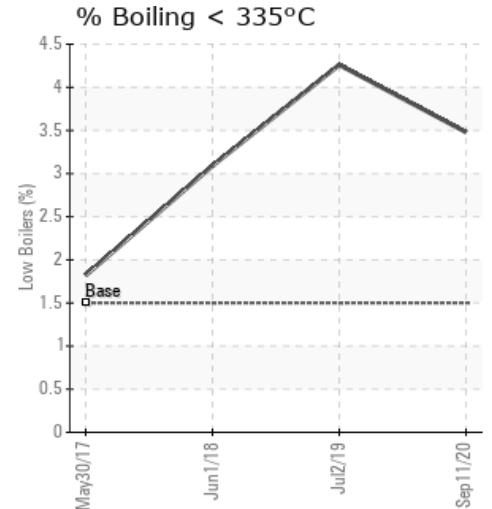
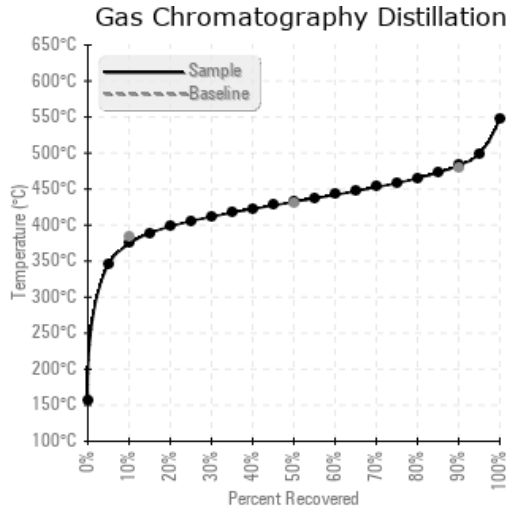
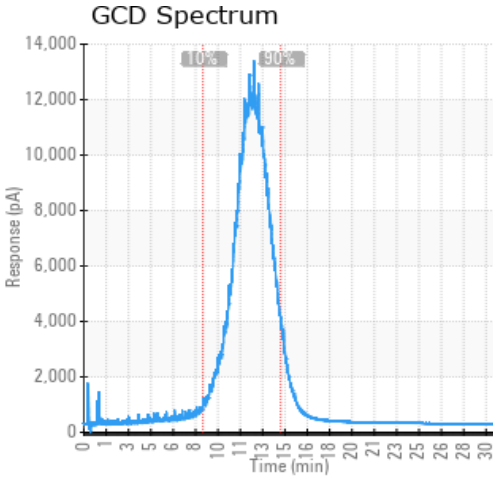
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/11/20	09/17/20	13y		396 / 202	34.1	36.3	1.01	0.642	705 / 374	810 / 432	901 / 483	3.48
07/02/19	07/09/19	12y		374 / 190	42.6	35.3	1.22	0.476	692 / 366	801 / 427	893 / 479	4.26
06/01/18	06/08/18	11y		406 / 208	28.5	34.7	0.51	0.414	703 / 373	801 / 427	890 / 477	3.09
05/30/17	06/02/17	10y		415 / 213	41.1	34.2	0.70	0.805	713 / 378	813 / 434	902 / 483	1.82
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
09/11/20	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0
07/02/19	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0
06/01/18	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	2
05/30/17	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	2
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

07/02/19	Pentane insols are higher than expected, likely linked to the high acid number and some early degradation. COC Flash Pt low and if system can be safely vented it may recover. If some form of filtration/conditioning can be safely employed may reduce the insols. Fit for further use but would expect further degradation over coming months, leading to a potential fluid change over time Pentane Insolubles levels are abnormally high. Acid Number (AN) is abnormally high. COC Flash Point is abnormally low.
06/01/18	All parameters within allowable limits, although Pentane Insols borderline, but improved from previous sample a year ago. Looks like water and insols been removed, has some maintenance and filtration occurred. FLuid fit for further use Pentane Insolubles levels are abnormally high.
05/30/17	Oil appears to be fit for further service however we note that the insoluble are very high. If possible filter the insoluble out of the oil. Pentane Insolubles levels are severely high.

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