

SUPPLY CARGILL MEAT THAILAND

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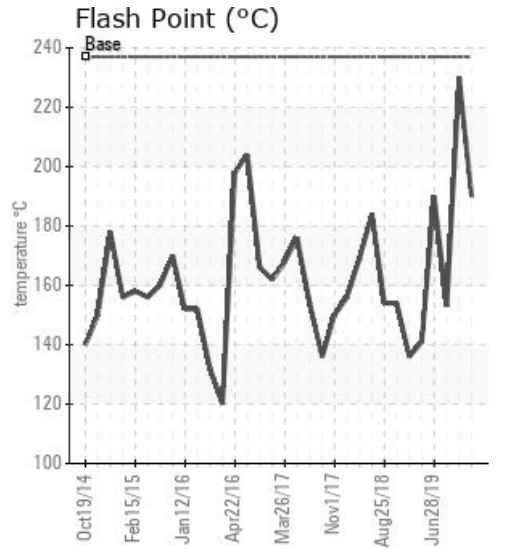
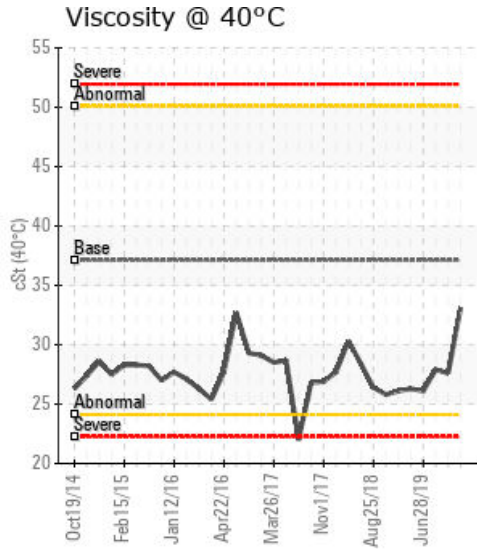
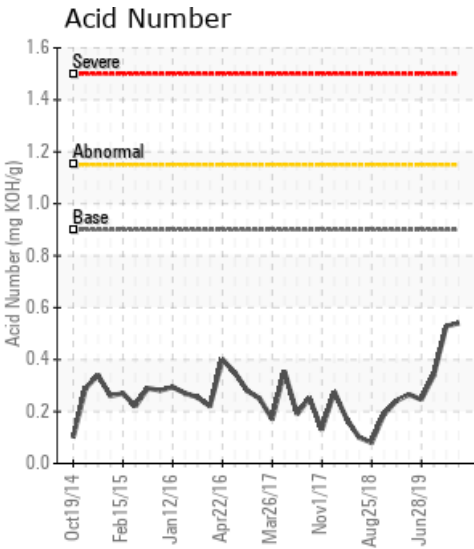
System Information
 System Volume: 11275 ltr
 Bulk Operating Temp: 554F / 290C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID
 Make: WANSON

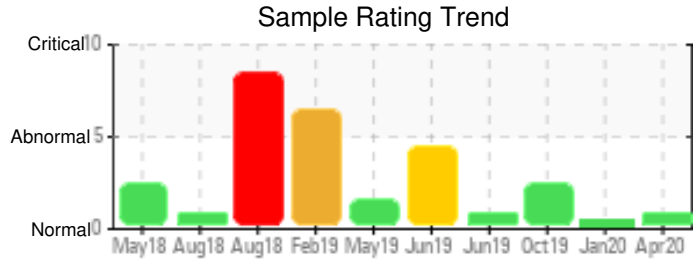
Sample Information
 Lab No: 02348709
 Analyst: Philip Riley
 Sample Date: 04/06/20
 Received Date: 04/14/20
 Completed: 04/26/20
 Philip Riley
 philip.riley@petrocanadalsp.com

Recommendation: All parameters test to specification with the exception of the COC Flash Pt which is marginally low. The fluid remains suitable for operation, but recommend safe venting if possible to remove the low boiling point molecules. Please re-sample after normal frequency

Comments: COC Flash Point is abnormally low.

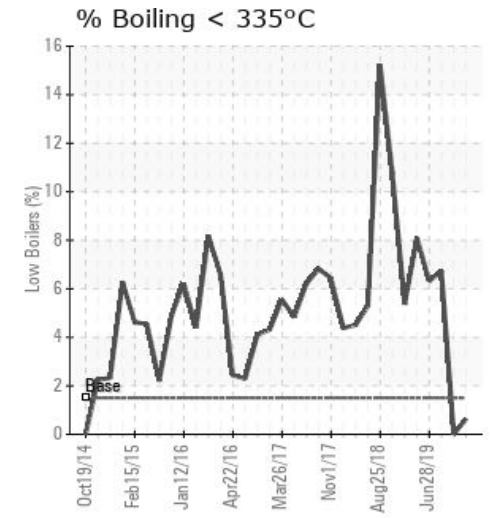
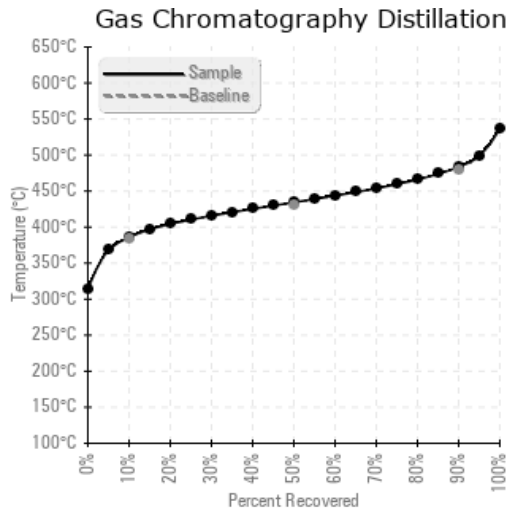
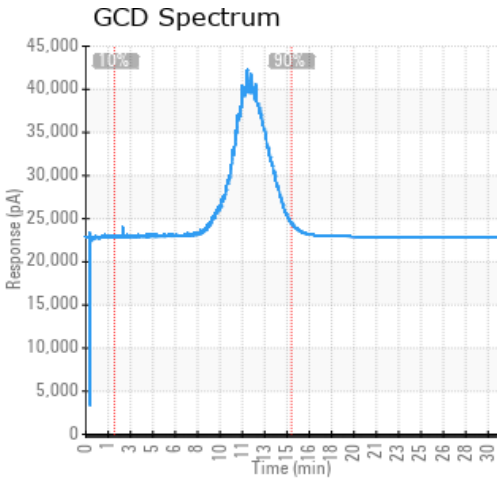
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/06/20	04/14/20	3m	SUPPLY AND RETURN	374 / 190	13.0	33.1	0.54	0.181	727 / 386	814 / 434	902 / 484	0.64
01/14/20	01/30/20	10m		446 / 230	0.2	27.6	0.529	0.077	734 / 390	802 / 428	892 / 478	0.00
10/12/19	10/25/19	42m	SUPPLY/RETURN	307 / 153	13.3	27.9	0.340	0.086	666 / 352	788 / 420	883 / 473	6.73
06/28/19	07/11/19	38m		374 / 190	28.8	26.1	0.246	0.038	673 / 356	795 / 424	886 / 475	6.32
06/02/19	06/11/19	38m		286 / 141	9.9	26.3	0.266	0.054	654 / 346	792 / 422	890 / 477	8.10
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
04/06/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	1
01/14/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0
10/12/19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0
06/28/19	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
06/02/19	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0
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

01/14/20	Oil tests to spec and all parameters as expected. Fit for further use and re-sample at normal frequency
10/12/19	Strong evidence of cracking indicated by the lowering viscosity and the low flash point. This looks to have been recovered in the past and if safe to do so the system must be vented. Distillation points remain mainly in line with fresh fluid. Please vent the system and take another sample to check how the system has recovered from removal of the light end molecules. COC Flash Point is severely low. (GCD) 10% Distillation Point is marginally low.
06/28/19	The current fluid has normal distillation points. The acid number and solid content are all normal. The current fluid is suitable for operation. Please do the system venting as one of the routine maintenance activities to release the low boiler. Please take one sample in 6 months to monitor the conditions.
06/02/19	The current fluid conditions are slightly better than the previous oil sample two months ago. However, the flash point is still severely low considering the elevated low boiler generated by the thermal cracking? The oil Acid Number and Solid contents are all low. Please conduct a long and effective system venting to release the light oil moisture.

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