

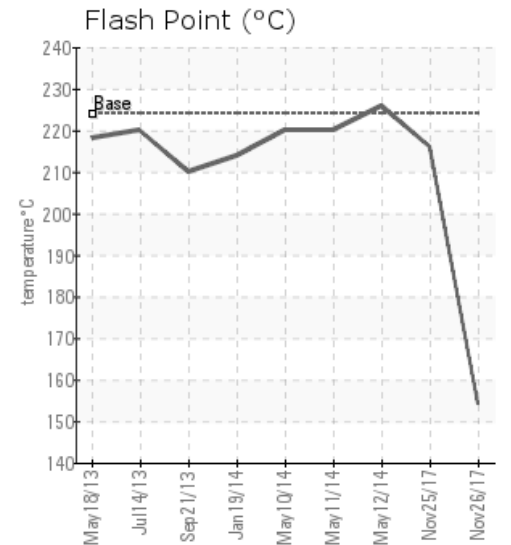
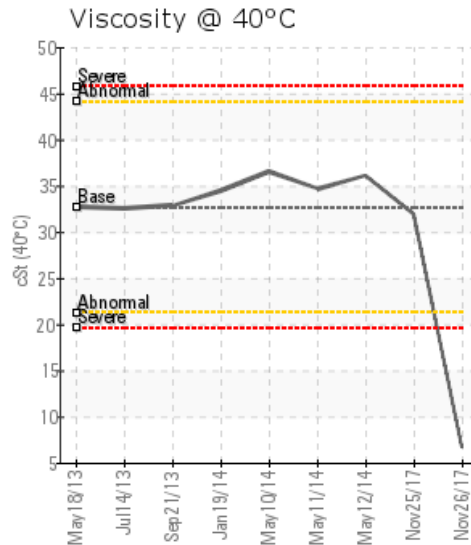
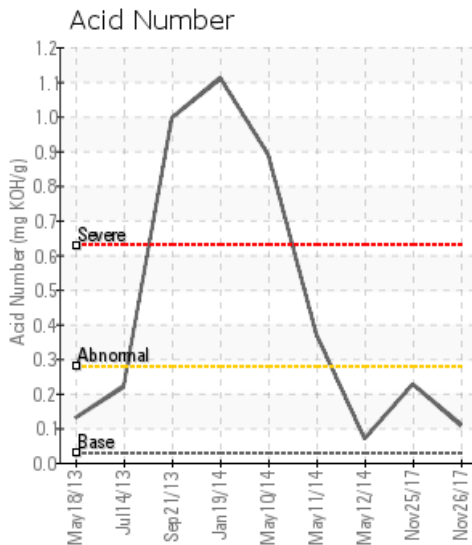
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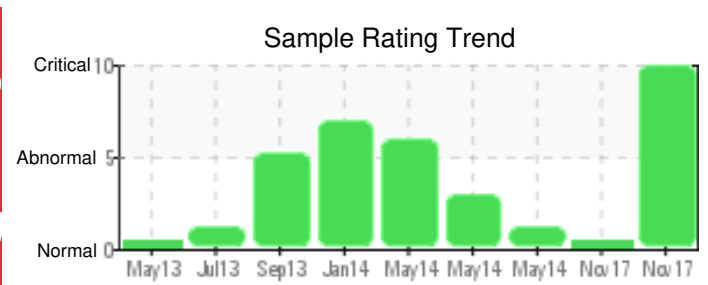
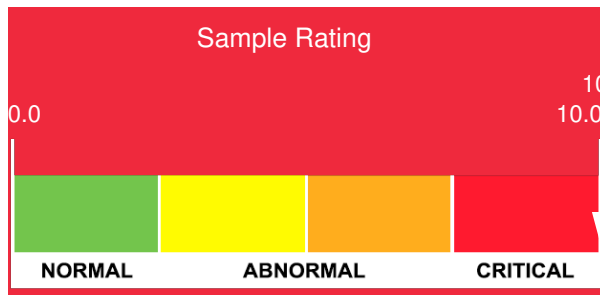
Customer: PTRHTF60017	System Information	Sample Information
DAISHINKAKO CO. LTD 1-18-22 HIGASHI - NAKAJIMA OSAKA, 533-0033 Japan Attn: Tomohiko Kimura Tel: (810)663-2507 x:14 E-Mail: kimura@daishinkako.com	System Volume: 28 ltr Bulk Operating Temp: 356F / 180C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: MATSUI MFG CO.	Lab No: 02193087 Analyst: Yutong Gao Sample Date: 11/26/17 Received Date: 01/17/18 Completed: 01/30/18 To discuss this report contact Yutong Gao at (403)873-1876

Recommendation: Not sure what the sample of Nov 26th 2017 is. The oil has extremely low viscosity, low flash point and low distillation point. It is an open system, so it is not possible to see such low viscosity if there is a thermal cracking. Most likely it is a wrong oil. Not sure why the oil samples were taken on Nov 26th and 25th. Not sure why the oils were such different only one day apart. Need background information. Looks like the new oil is currently running in the system at the moment. Please keep running the new oil and take one sample in 12 months.

Comments: (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is severely low. (GCD) 50% Distillation Point is severely low. (GCD) 90% Distillation Point is severely low. COC Flash Point is severely low. Zinc ppm levels are severely high. Visc @ 40°C is severely low. Visc @ 100°C is abnormally low. Phosphorus ppm levels are noted.

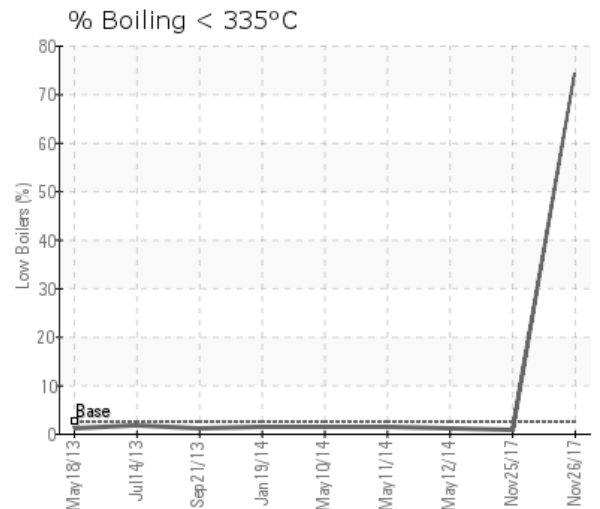
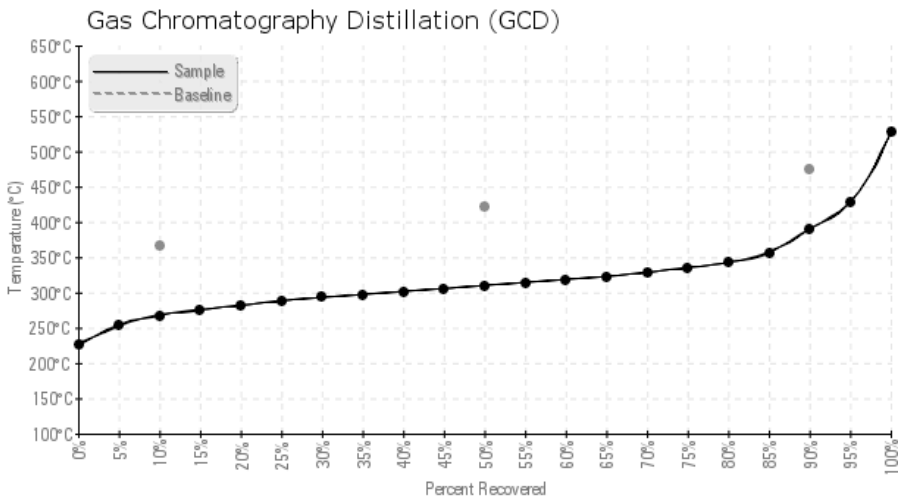
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/26/17	01/17/18	0h		309 / 154	16.7	6.7	0.108	0.189	514 / 268	590 / 310	733 / 389	74.36
11/25/17	01/17/18	0h		421 / 216	3.3	31.9	0.228	0.029	701 / 372	798 / 426	898 / 481	0.63
05/12/14	05/21/14	1h	BOTTOM	439 / 226	0.00	36.1	0.07	0.321	698 / 370	794 / 423	897 / 481	1.16
05/11/14	05/21/14	1h	BOTTOM	428 / 220	4.3	34.7	0.37	0.505	697 / 369	793 / 423	899 / 482	1.36
05/10/14	05/21/14	5664h	BOTTOM	428 / 220	41.0	36.6	0.89	0.930	695 / 368	789 / 421	902 / 484	1.45
01/19/14	01/27/14	3888h	BOTTOM	417 / 214	22.0	34.5	1.11	0.600	694 / 368	789 / 421	899 / 482	1.52
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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	
11/26/17	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	45	45
11/25/17	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	257	17
05/12/14	1	0	0	0	1	0	0	1	0	0	3	1	0	0	0	0	0	0	0	0	1	0	264	75	
05/11/14	1	0	0	0	1	0	0	2	0	0	2	1	0	0	0	0	0	0	0	0	2	0	248	229	
05/10/14	3	0	0	0	3	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	209	602	
01/19/14	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	215	599	
Baseline Data			0	0						0			0	0					0					270	

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



Historical Comments

11/25/17	The current fluid has normal viscosity, acid number, flash point and distillation points. The water and solid contents are all low. Please take one sample in 12 months to monitor the conditions.
05/12/14	The current fluid has good conditions, please take one sample every 6 months to monitor. Please investigate how Zinc get to the system. Zinc ppm level is high.
05/11/14	Think this is the new oil after the system drain without the flushing. There are still some old oxidized fluid left over in the system, so the new oil has the warning level of the TAN and Solid. Please flush the system during the oil change. Investigate the Zinc ingress. Keep monitoring the condition. Pentane Insolubles levels are abnormally high. Zinc ppm levels are severely high. Acid Number (AN) is abnormally high.
05/10/14	TAN and Solid levels are all very high. The severely high Zinc level indicate there is third party contamination. Please drain the current fluid, flush and fill the new fluid. Please take sample every 6 months to monitor the conditions.
01/19/14	The current oil has reached the end of its useful life because of the oxidation. Total Acid Number (TAN), Zn level and Solid level are high. The viscosity increases about 5.5%, which still provide not bad heat transfer efficiency. I recommend to drain the system thoroughly and refill with oil. Pentane Insolubles levels are high. Acid Number (AN) is high. Zinc ppm level is high.