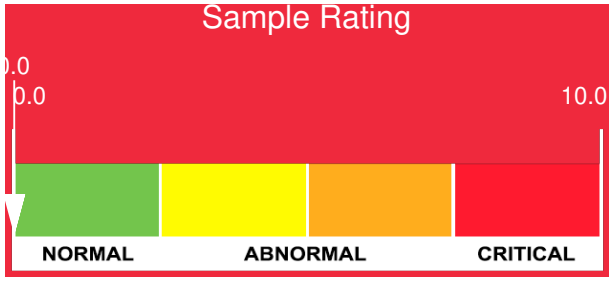
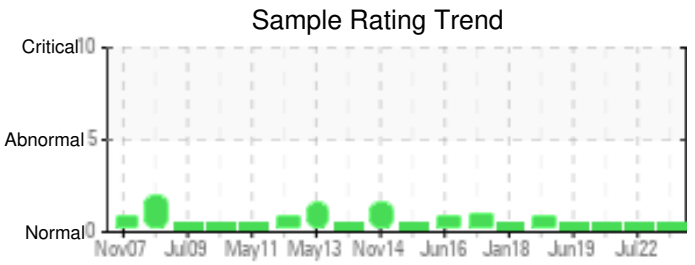




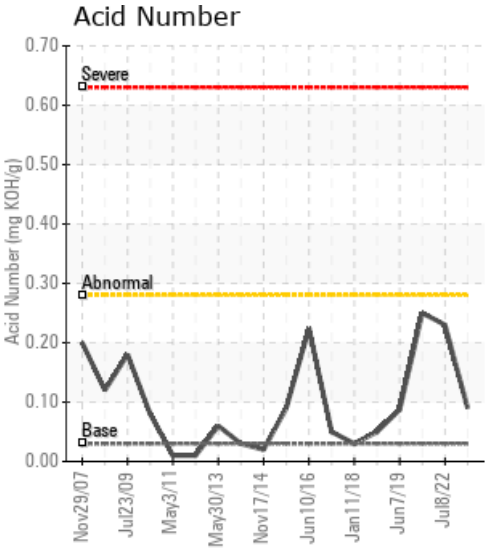
HEAT TRANSFER SYSTEM

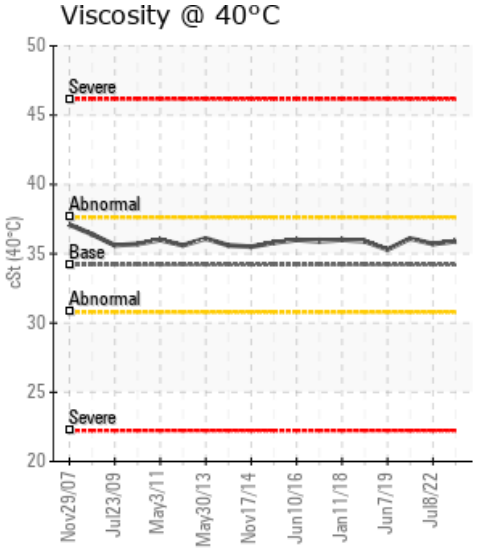
Customer: PTRHTF30019	System Information	Sample Information
IKO INDUSTRIES 628 VICTORIA AVENUE N. HAMILTON, ON L8L 8B3 CA Attn: John Beard Tel: E-Mail: john.beard@iko.com	System Volume: 0 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02623864 Analyst: Yen Garcia Sample Date: 03/20/24 Received Date: 03/21/24 Completed: 04/03/24 Yen Garcia yen.garcia@HFSinclair.com

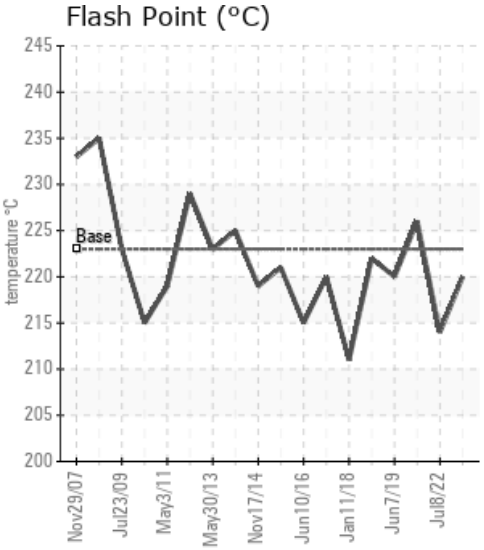
Recommendation: The oil is in a good condition. Please continue monitoring once a year at least.

Comments:

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	%
03/20/24	03/21/24	12.0y		428 / 220	25	35.9	0.09	0.163	713 / 378	812 / 433	911 / 488	1.54
07/08/22	07/11/22	12.0y		417 / 214	27.6	35.7	0.23	0.375	714 / 379	808 / 431	901 / 483	1.11
10/08/20	10/09/20	11.0y	Suction of circ pump	439 / 226	10.5	36.1	0.25	0.183	711 / 377	809 / 431	906 / 486	1.39
06/07/19	06/10/19	10.0y	0019	428 / 220	16.9	35.3	0.087	0.210	706 / 375	802 / 428	903 / 484	0.00
01/24/19	01/25/19	11.5y	SUCTION LINE CIR PP	432 / 222	19.7	35.9	0.05	0.333	683 / 362	781 / 416	879 / 471	1.92
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00







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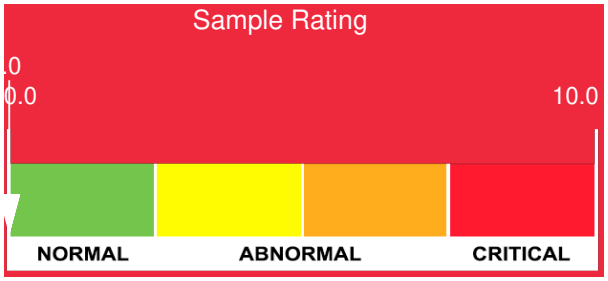
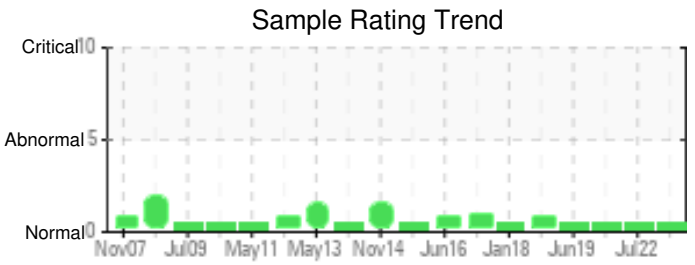
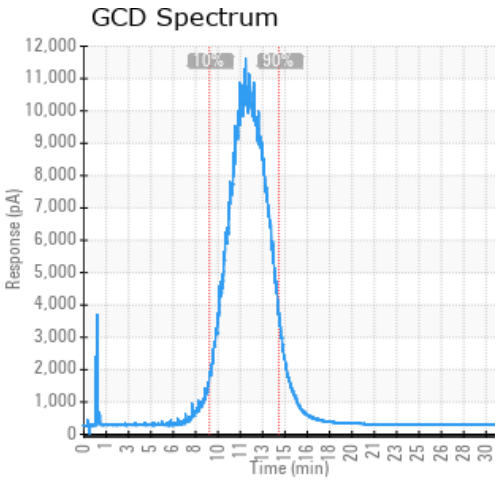
PETRO-CANADA LUBRICANTS

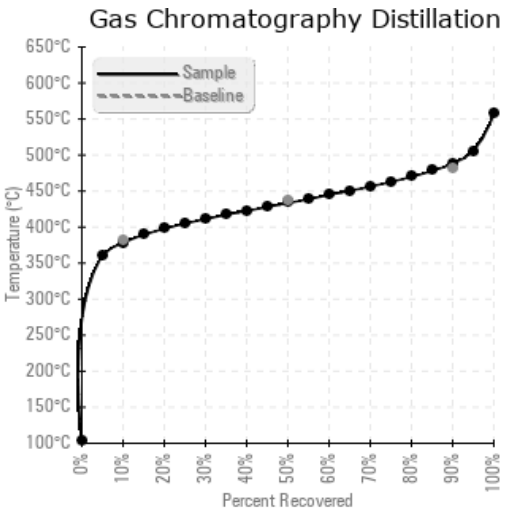


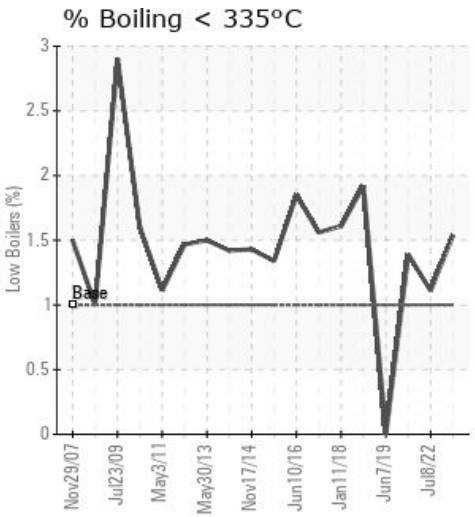


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/20/24	16	0	0	0	0	0	0	0	0	0	0	1	13	0	0	0	0	0	0	0	2	0	13	1
07/08/22	21	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13	0
10/08/20	18	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0
06/07/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0
01/24/19	25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
Baseline Data			0	0						0			0	0					0				0	

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







Historical Comments

07/08/22	Routine Monitoring. No Action needed at this time.Routine Monitoring. No Action needed at this time. Routine Monitoring. No Action needed at this time. Routine Monitoring. No Action needed at this time.
10/08/20	Indication of some cracking of the heat transfer fluid as there is an increase in the GCD% <335°C at 1.39%. Also an indication in a decrease in the initial boiling point to 209°C. Flash Point of the fluid is typical. All other parameters are within normal product typicals for a used Petro-Therm heat transfer fluid. Pentane insolubles have decreased slightly. Fluid is suitable for continued use. Sample at yearly interval (June 2021).
06/07/19	Sample Results indicate the Petro-Therm heat transfer fluid is suitable for continued use. No issues with fluid, pentane insolubles have decreased since previous sample. All other parameters are typical.
01/24/19	The 90% GCD Distillation point is slightly lower @ 470°C versus the typical of 482°C. Possibly some cracking of the fluid has occurred. Slight increase in the GCD %<335°C along with a slight decrease in the 10% and 50% GCD point is noted.Flash and Acid number are consistent with Petro-Therm. There is a slight increase in the Pentane insoluble levels. Pentane insoluble can lead to deposits in lines and dead legs.Fluid is suitable for continued service.Resample at normal interval. (GCD) 90% Distillation Point is marginally low.

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