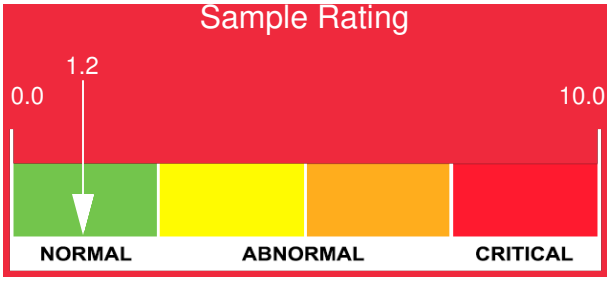
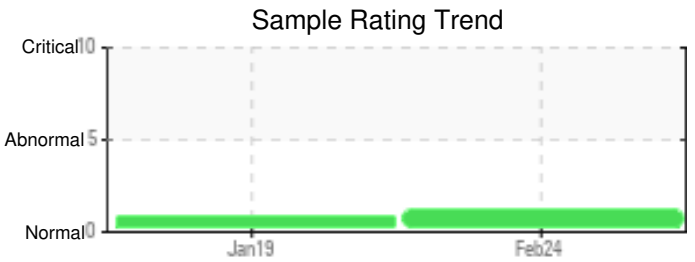




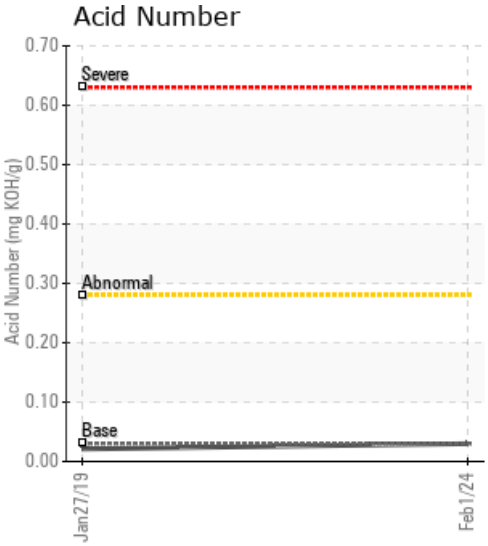
[B-88-J/94G1] J1 HOT OIL SYSTEM

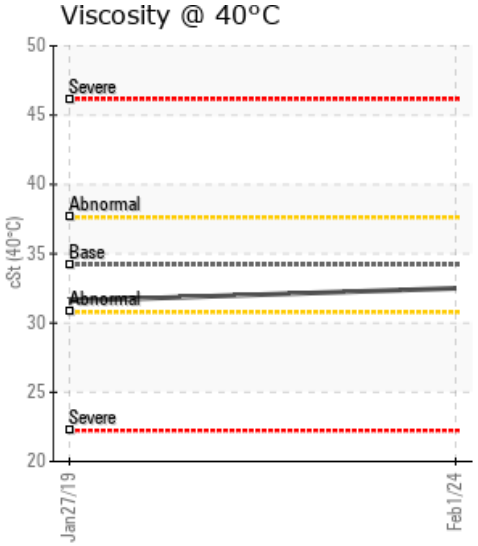
Customer: PTRHTF20209	System Information	Sample Information
NORTH RIVER MIDSTREAM B-88-J/94-6-1 CHARLIE LAKE OFFICE MILE 53 FORT ST. JOHN, BC V1N 4H7 CA Attn: Lindsey Kessler Tel: (403)952-9999 E-Mail:	System Volume: 12000 ltr Bulk Operating Temp: 401F / 205C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: HEATECH	Lab No: 02619440 Analyst: Clinton Buhler Sample Date: 02/01/24 Received Date: 03/01/24 Completed: 03/12/24 Clinton Buhler Clinton.Buhler@HFSinclair.com

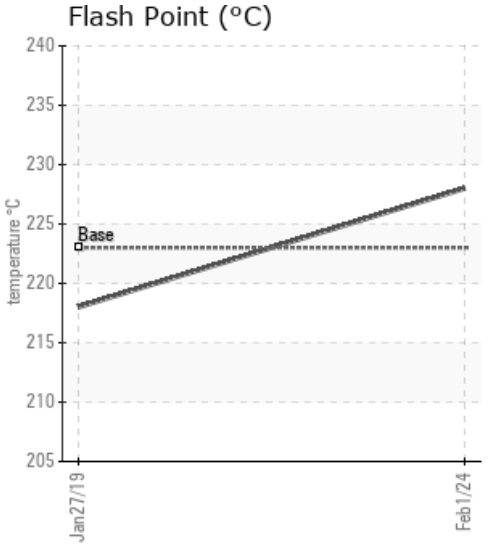
Recommendation: Sample results indicate the fluid is in suitable condition for continued service. Please re-sample in 12 months.

Comments: (GCD) 90% Distillation Point is abnormally high. Sulfur ppm levels are noted.

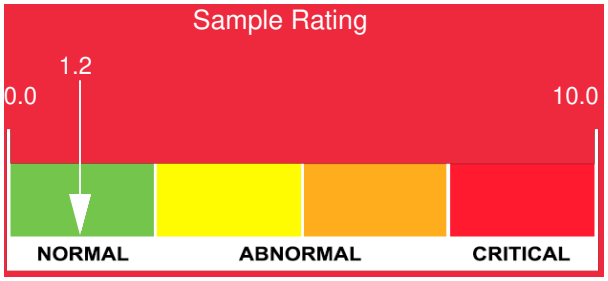
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/01/24	03/01/24	5.0y	PUMP DISCHARGE	442 / 228	2	32.5	0.03	0.044	683 / 362	798 / 426	928 / 498	1.85
01/27/19	02/04/19	23.0y	PUMP DISCHARGE	424 / 218	30.3	31.6	0.021	0.090	658 / 348	770 / 410	893 / 479	4.41
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

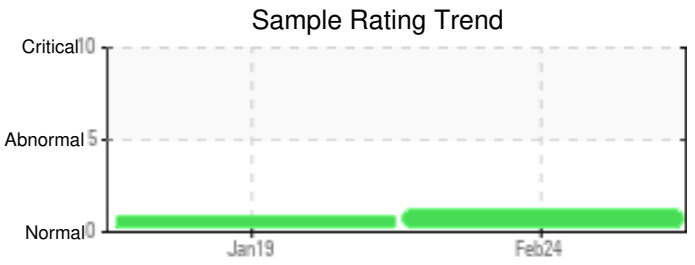






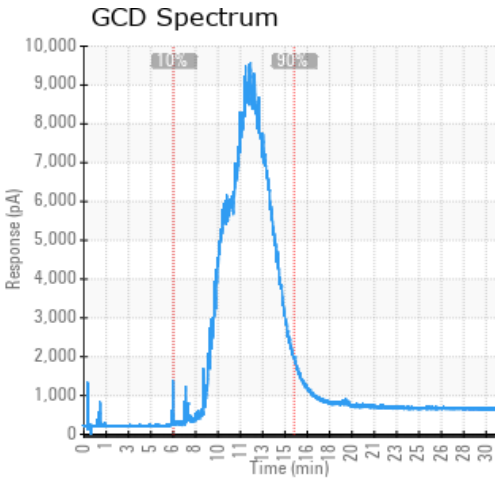
PETRO-CANADA LUBRICANTS

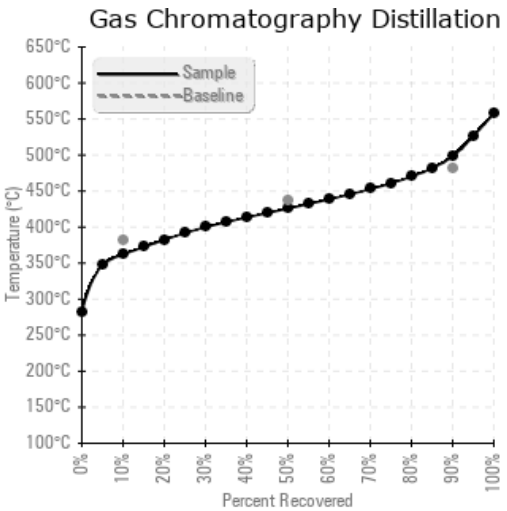


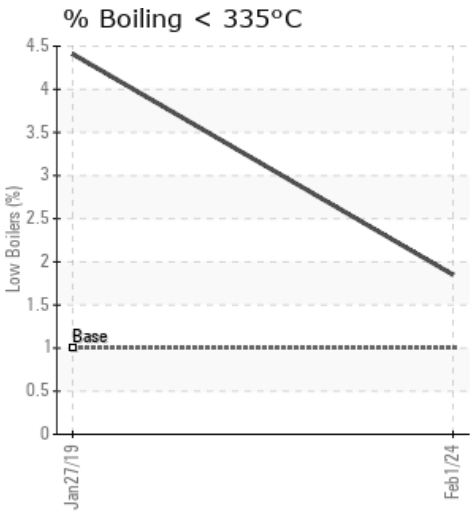


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
02/01/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01/27/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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

01/27/19	Sample results indicate that the heat transfer fluid is suitable for continued service. Slightly lower distillation values, 4.45% boil-off and reduced fluid viscosity can be an indication of either thermal degradation or high blanket gas pressure. It is optimal to vent low boiling vapors from expansion tank. Please note that blanket gas needs to be turned off during venting to allow vapors to escape. Investigate if this can be done or if pumps require the blanket gas for positive suction head. Once venting has been performed, please re-sample in 6 months. (GCD) 10% Distillation Point is marginally low.