

[4-13-39-9W5] ORLEN UPSTREAM

Customer: PTRHTF20243

CFR CHEMICALS
38451 RRZZ
RED DEER, AB T4E 2N6 CA
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System Information

System Volume: 28000 ltr
Bulk Operating Temp: 410F / 210C
Heating Source:
Blanket:
Fluid: PETRO CANADA PETRO-THERM
Make: MAXON BY HONEYWELL

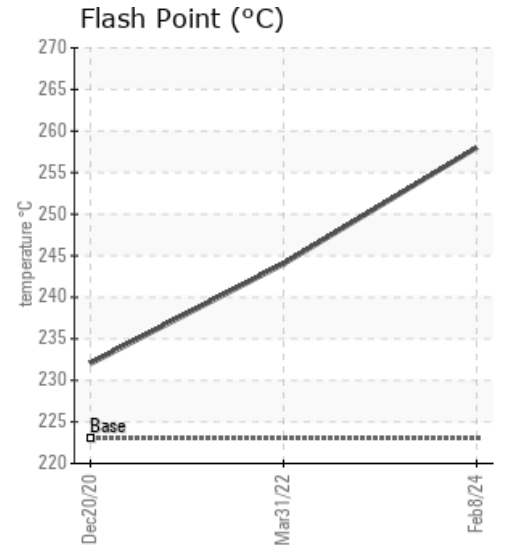
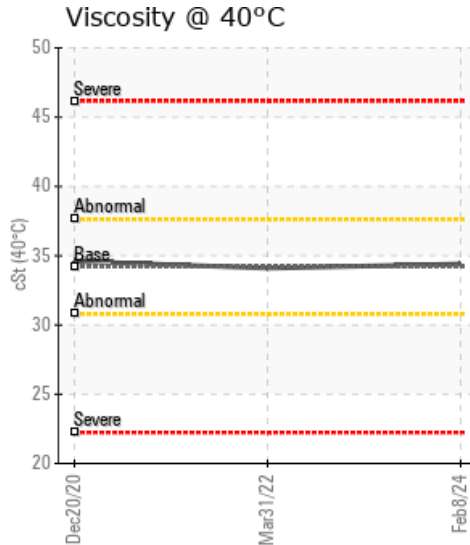
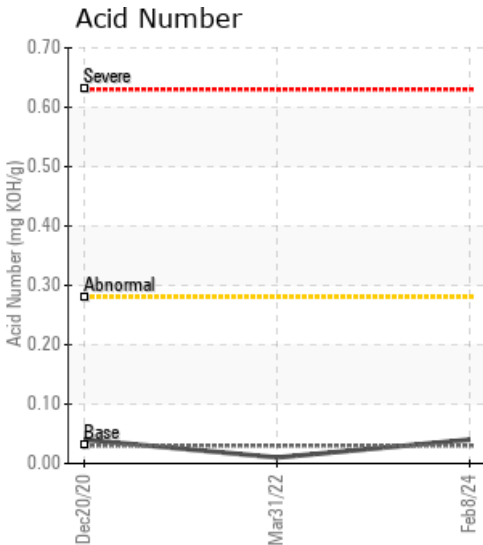
Sample Information

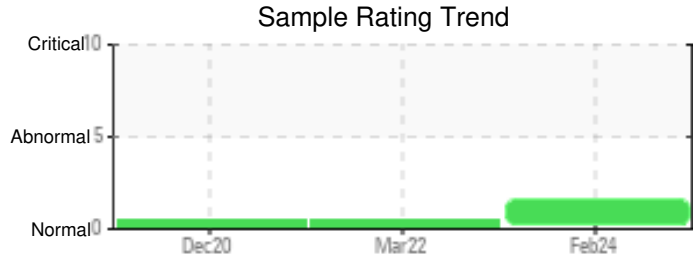
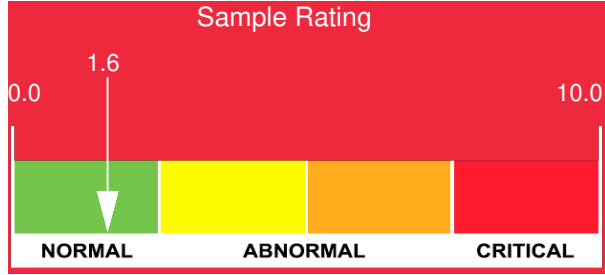
Lab No: 02619789
Analyst: Lyle Dach
Sample Date: 02/08/24
Received Date: 03/04/24
Completed: 04/01/24
Lyle Dach
lyle.dach@HFSinclair.com

Recommendation: Overall fluid condition is good, 10 and 90 % GCD are slightly increased, venting the system can reduce the low boilers present in the oil reducing the 10% GCD results. Venting should be done in short periods of time to ensure oxygen doesn't enter the expansion tank and allow the fluid to oxidize. An increase in 90% GCD can be from the fluid oxidizing ensure blanket gas is function properly after venting.

Comments: (GCD) 10% Distillation Point is marginally high. (GCD) 90% Distillation Point is marginally high.

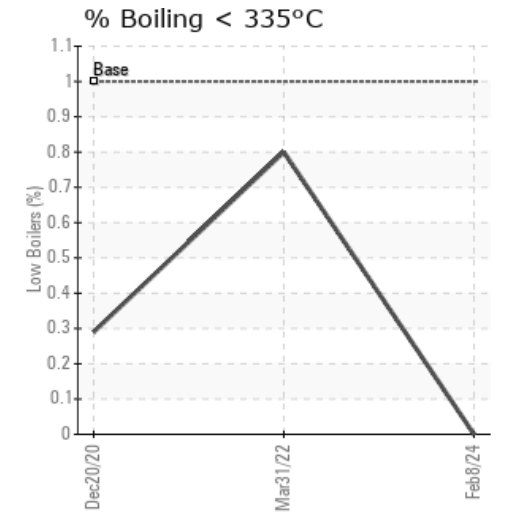
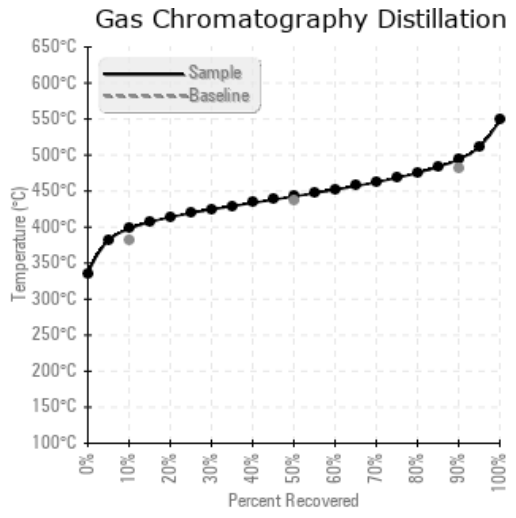
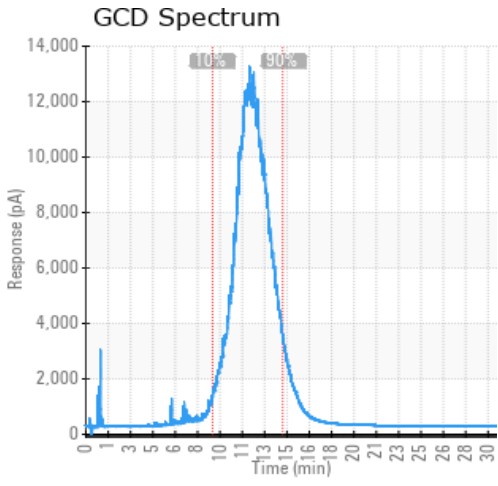
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/08/24	03/04/24	96.0m		496 / 258	0	34.4	0.04	0.027	748 / 398	829 / 443	921 / 494	0.00
03/31/22	04/13/22	10.0m	OFF PUMP	471 / 244	0.00	34.1	0.01	0.023	728 / 387	814 / 434	914 / 490	0.80
12/20/20	01/28/21	4.5m	Drain Valve	450 / 232	10.2	34.6	0.04	0.059	730 / 388	814 / 435	911 / 489	0.29
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
02/08/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/31/22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12/20/20	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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



Historical Comments

03/31/22	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
12/20/20	Fluid is in excellent condition. Suggest submitting samples annually to proactively monitor fluid condition.

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