

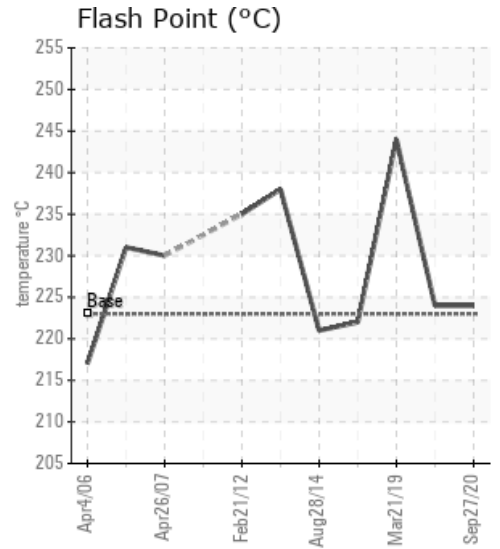
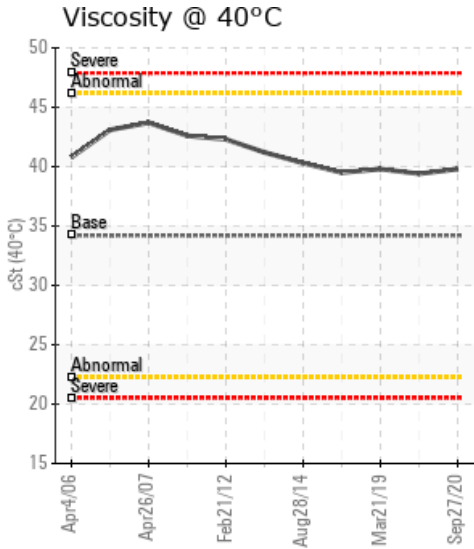
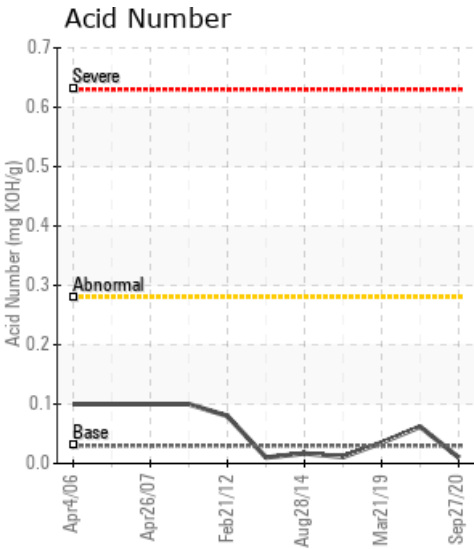
[03-26-033-06W5] CAROLINE - SUNDRE

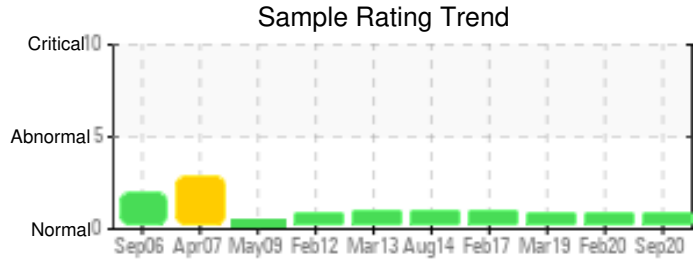
Customer: PTRHTF20072	System Information	Sample Information
TAQA NORTH 326 BEAR BERRY ROAD SUNDRE, AB T0M 1X0 Canada Attn: Darren Foster Tel: (403)845-8093 E-Mail: darren.foster@tapa.c	System Volume: 22000 ltr Bulk Operating Temp: 410F / 210C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: NATCO CANADA	Lab No: 02383862 Analyst: Kevin McDermott Sample Date: 09/27/20 Received Date: 10/27/20 Completed: 10/28/20 Kevin McDermott kevin.mcdermott@petrocanadalsp.com

Recommendation: Fluid remains in excellent condition. Continue with annual sample submissions to proactively monitor fluid condition.

Comments:

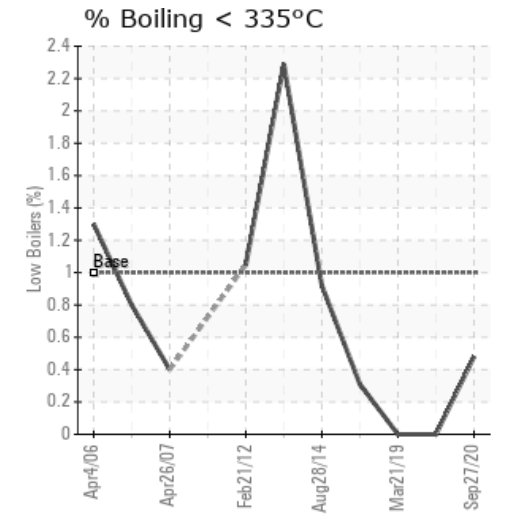
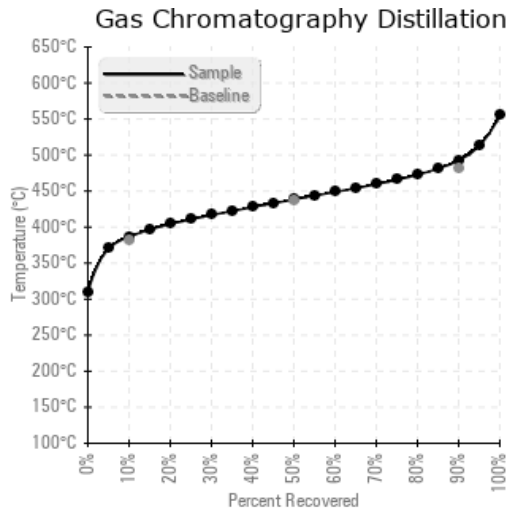
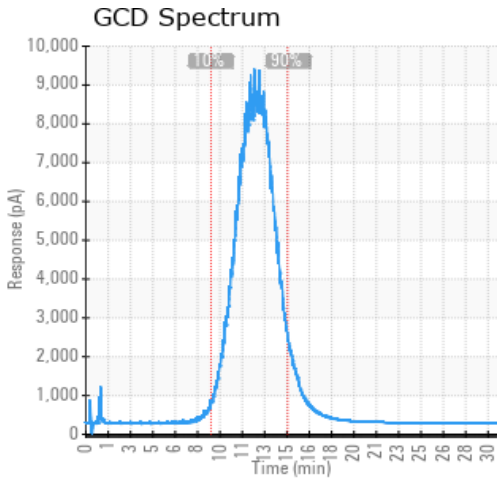
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/27/20	10/27/20	11y	before hot oil pump	435 / 224	8.3	39.8	0.01	0.092	728 / 386	821 / 438	919 / 493	0.48
02/10/20	02/19/20	0y		435 / 224	16.9	39.4	0.062	0.107	726 / 385	795 / 424	877 / 470	0.00
03/21/19	04/18/19	5y	EXCHANGE RETRUN	471 / 244	56.3	39.8	0.035	0.071	726 / 386	822 / 439	928 / 498	0.00
02/13/17	02/14/17	10y	DISCHARGE OF PUMP	432 / 222	0.3	39.5	0.011	0.050	723 / 384	820 / 438	926 / 497	0.31
08/28/14	09/11/14	7y	DISCHARGE LINE	430 / 221	0.00	40.3	0.017	0.127	697 / 370	792 / 422	927 / 497	0.92
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
09/27/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
02/10/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/21/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
02/13/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/28/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	
02/10/20	Fluid condition is very good overall. Continue to submit annual samples to proactively monitor fluid condition. (GCD) 90% Distillation Point is abnormally low.
03/21/19	Fluid condition is very good overall, very little change from the previous sample Feb 2017. Suggest submitting samples annually to proactively monitor fluid condition. (GCD) 90% Distillation Point is abnormally high.
02/13/17	Fluid remains in good condition overall showing very little change from the last sample in August 2014. Recommend submitting annual samples or sooner if process conditions become severe. (GCD) 90% Distillation Point is slightly high.
08/28/14	Fluid is good condition overall. Please continue to submit fluid samples every 9 months or so, or if process conditions become severe. (GCD) 90% Distillation Point is marginally high.

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