

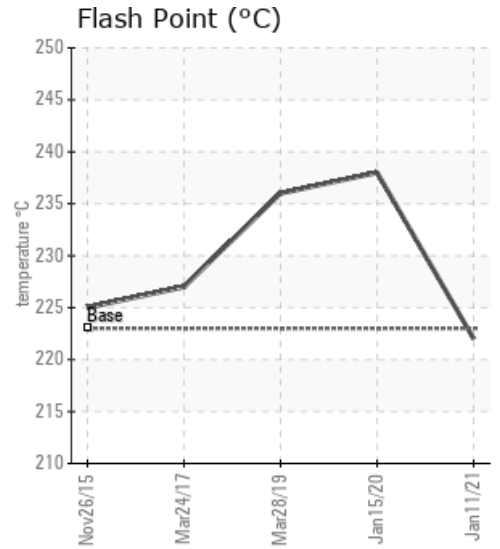
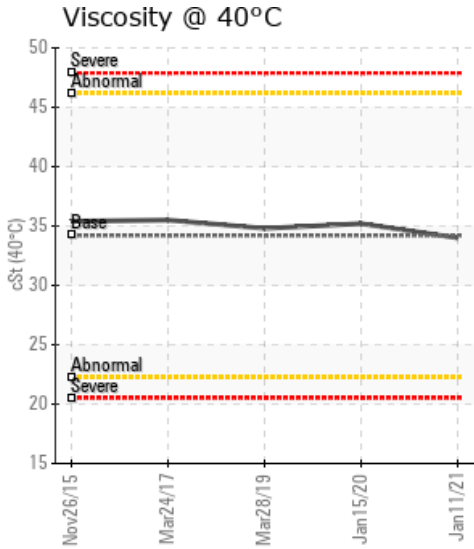
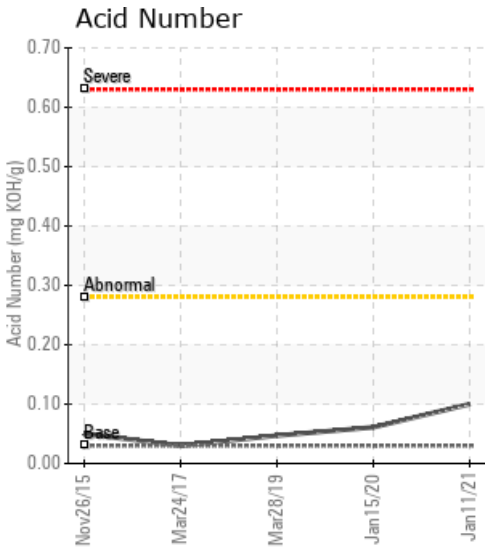
## [TOURMALINE OIL CORP / LSD 4-17-51-18W5] TOURMALINE EDSON PLANT UH-5000

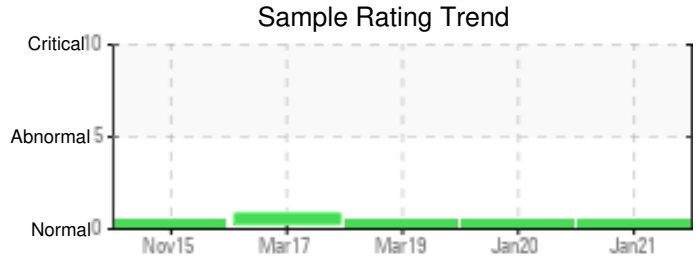
Customer: PTRHTF20039	System Information	Sample Information
BRENNTAG CANADA INC 3124-54TH AVENUE SE CALGARY, AB T2C 0A8 Canada Attn: Matthew Kryska Tel: E-Mail: mkryska@brenntag.ca	System Volume: 19000 ltr Bulk Operating Temp: 437F / 225C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02399434 Analyst: Terry Veenstra Sample Date: 01/11/21 Received Date: 01/22/21 Completed: 01/25/21 Terry Veenstra terry.veenstra@petrocanadalsp.com

Recommendation: This fluid appears to be in good condition. Maintain good system maintenance practices and resample in 6 months.

Comments:

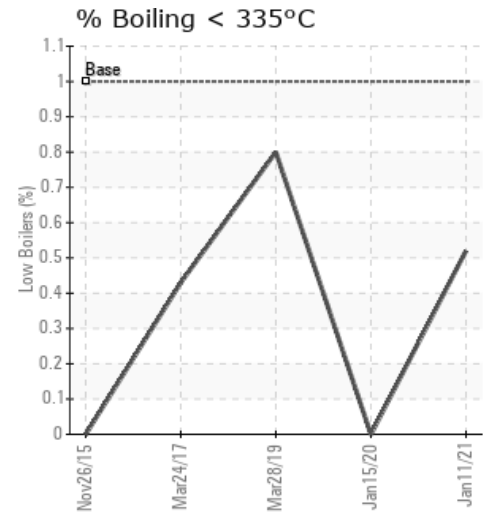
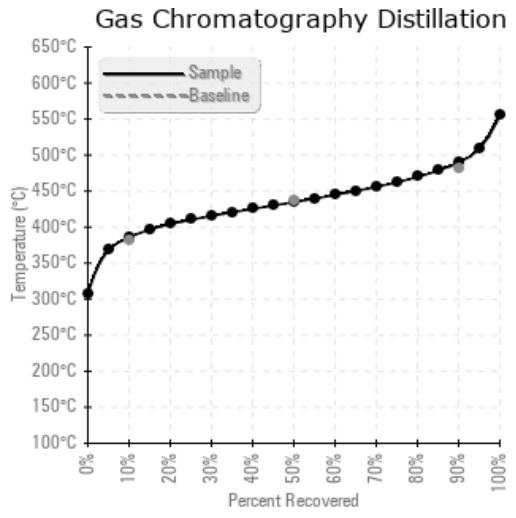
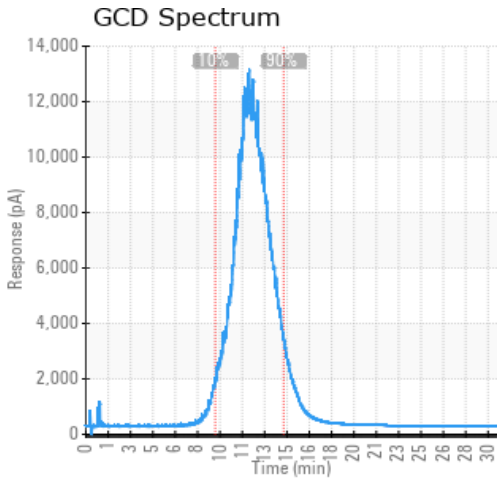
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/11/21	01/22/21	6y	SITE GLASS	432 / 222	11.1	34.0	0.10	0.080	726 / 386	815 / 435	913 / 490	0.52
01/15/20	02/03/20	5y		460 / 238	7.2	35.2	0.061	0.078	723 / 384	806 / 430	903 / 484	0.00
03/28/19	04/08/19	3y		457 / 236	0.00	34.8	0.047	0.059	721 / 383	813 / 434	915 / 491	0.80
03/24/17	03/30/17	2y		441 / 227	6.3	35.5	0.03	0.031	724 / 385	817 / 436	920 / 494	0.43
11/26/15	12/07/15	1y		437 / 225	22.8	35.4	0.05	0.029	716 / 380	805 / 429	906 / 485	0.00
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
01/11/21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01/15/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/28/19	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	1	0	0
03/24/17	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11/26/15	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 analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



### Historical Comments

01/15/20	The fluid is in good condition and suitable for further use. Please re-sample in 12 months.
03/28/19	The fluid is in good condition and suitable for further use. Please re-sample in 6 months.
03/24/17	Aside from an increase in 90% GCD temperature which indicates fluid degradation by oxidation, the fluid is in good condition and suitable for further use. Make sure the blanket gas system works properly to prevent contact between the hot fluid and outside air (oxygen) Please resample in 12 months. (GCD) 90% Distillation Point is marginally high.
11/26/15	The condition of the fluid is excellent. Please re-sample in 6 months.

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