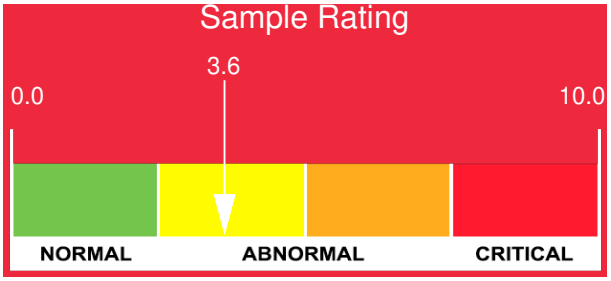
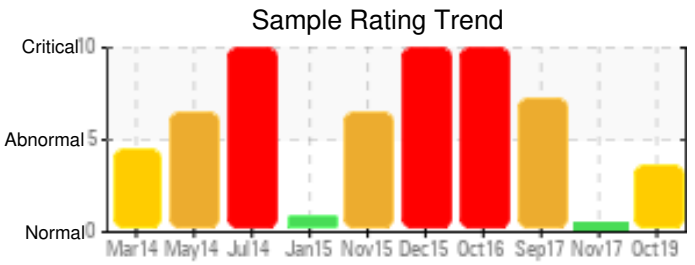




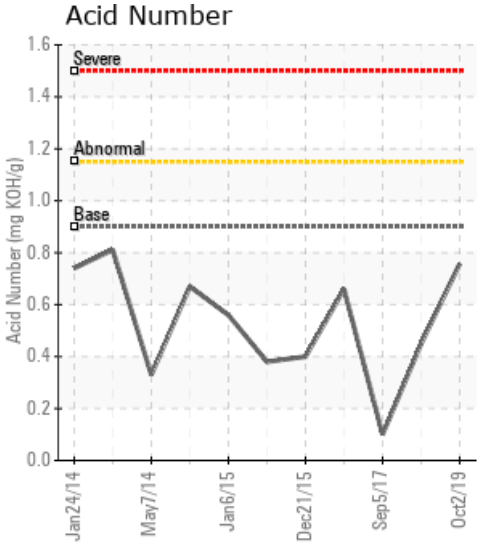
LEZITA - GUCSAN HOT OIL BOILER

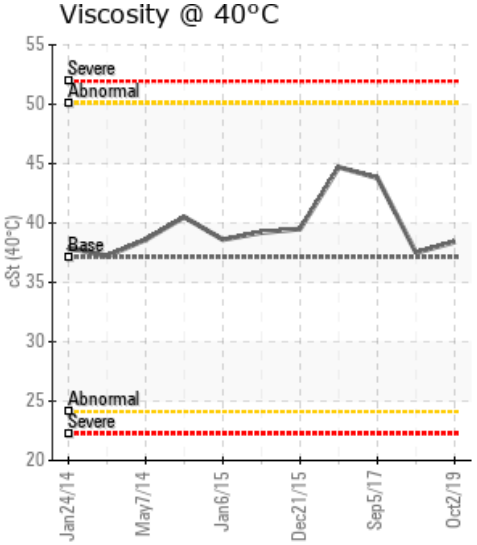
Customer: PTRHTF40074	System Information	Sample Information
LUBRICON LTD STI ATASEHIR ISTANBUL ISTANBUL, 34770 Attn: Murat Baslilar Tel: x: E-Mail: mbaslilar@lubricon.com.tr	System Volume: 16000 ltr Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: GUGSAN-2011/029	Lab No: 02313432 Analyst: Philip Riley Sample Date: 10/02/19 Received Date: 10/09/19 Completed: 10/23/19

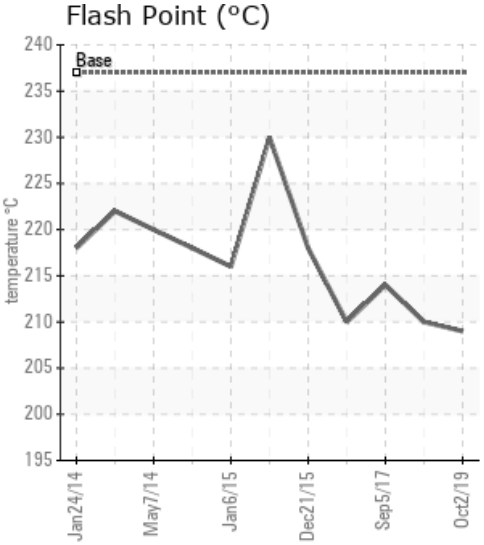
Recommendation: Fluid looks to have been recovered (filtered or prtial change - or both) over previous samples. Evidence fo degradation in the insoluble present and the increase in fluid viscosity. Suggest returning to a regime of treatment to filter (providing safe to do so) the debris from the oil or look towards fluid deterioration and eventual change to include a clean and flush

Comments: Pentane Insolubles levels are severely high. (GCD) 90% Distillation Point is abnormally high.

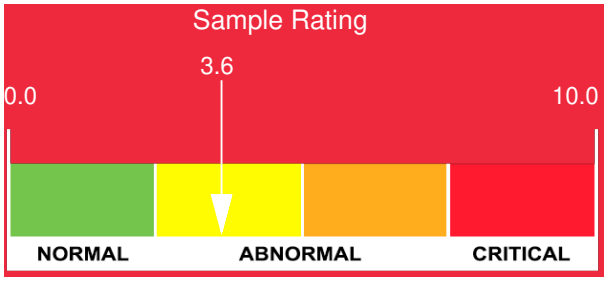
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/02/19	10/09/19	60000h	PUMP SUCTION LINE	408 / 209	16.4	38.4	0.757	0.982	746 / 396	832 / 445	920 / 494	0.00
11/07/17	11/20/17	42500h		410 / 210	7.1	37.5	0.45	0.289	733 / 389	809 / 432	893 / 479	0.00
09/05/17	11/20/17	41600h		417 / 214	19.8	43.8	0.10	0.842	725 / 385	818 / 436	918 / 492	0.00
10/05/16	10/17/16	33000h		410 / 210	141.4	44.7	0.66	2.87	718 / 381	813 / 434	906 / 485	1.18
12/21/15	12/29/15	26000h	CHARGE LINE	424 / 218	20.7	39.5	0.40	1.02	716 / 380	807 / 431	896 / 480	1.39
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5

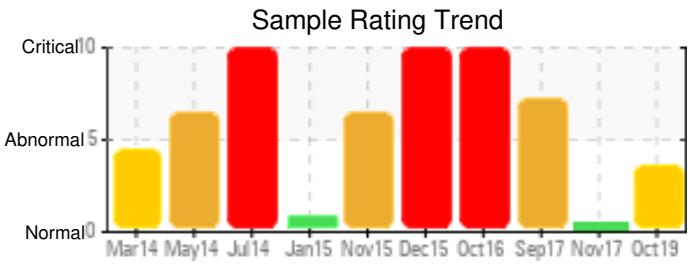






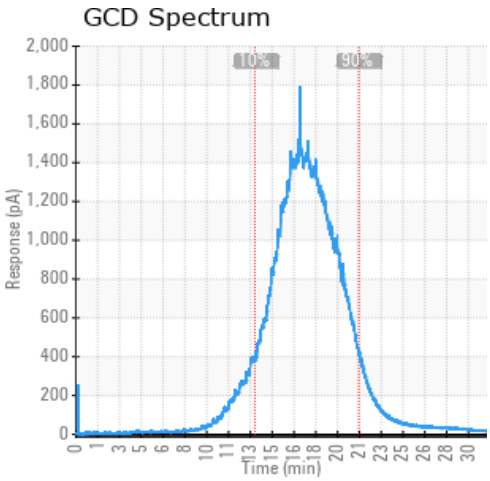
PETRO-CANADA LUBRICANTS

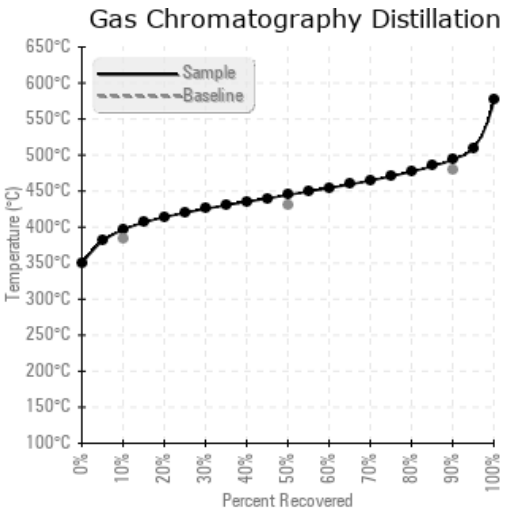


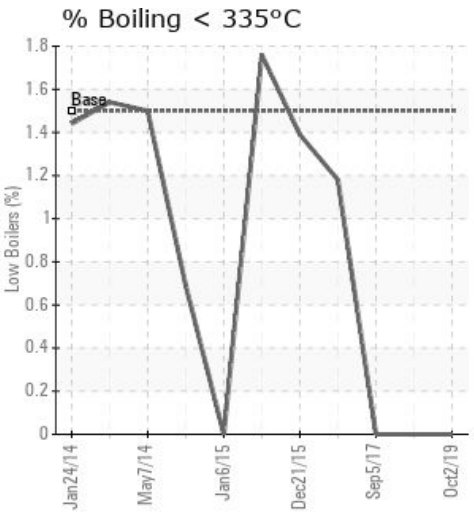


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
10/02/19	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0
11/07/17	63	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	92	0
09/05/17	197	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	45	0
10/05/16	1933	2	0	2	3	0	0	0	0	0	7	4	0	0	0	0	9	0	1	0	3	0	171	3
12/21/15	462	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	52	0
Baseline Data			0	0						0			0	0					0				230	

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







Historical Comments

11/07/17	All parameters as expected, fit for further use
09/05/17	sample improved from previous, but still has presence of abnormally high iron, particle count high, insoluble high and cleanliness poor. However, suspect sweetening or treatment occurred from last sample. Would recommend further 'filtration' if possible to keep improving the oil and therefore the oil life. Without filtration/cleaning in correct manner will restrict the life of the oil.PQ levels are severe. Iron ppm levels are abnormal. Pentane Insolubles levels are severely high. (GCD) 90% Distillation Point is marginally high.
10/05/16	Oil requires cleaning or changing.Iron ppm levels are severe. PQ levels are severe. Pentane Insolubles levels are severely high. Visc @ 40°C is abnormally high.
12/21/15	Oil is contaminated.Suggest change oil at earliest possible time.Iron ppm levels are severe. PQ levels are severe. Pentane Insolubles levels are severely high.