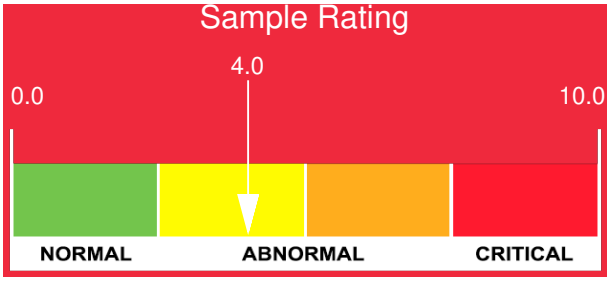
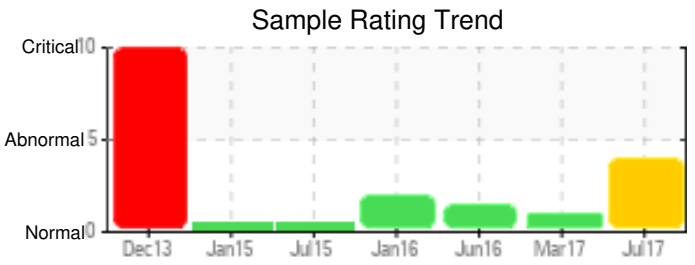




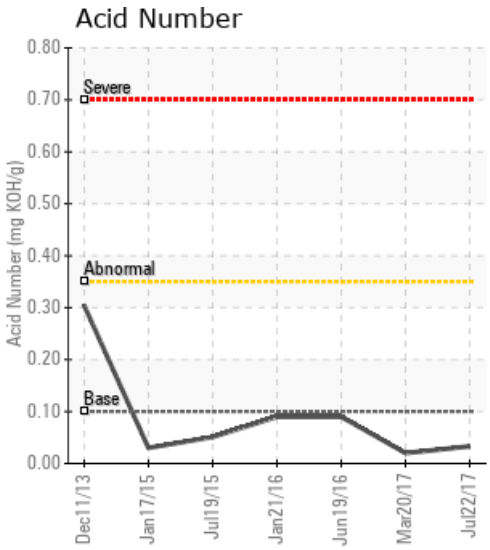
[ATHABASCA OIL CORP / 05-27-078-10W4M] L3 (PAD C) LIESMER

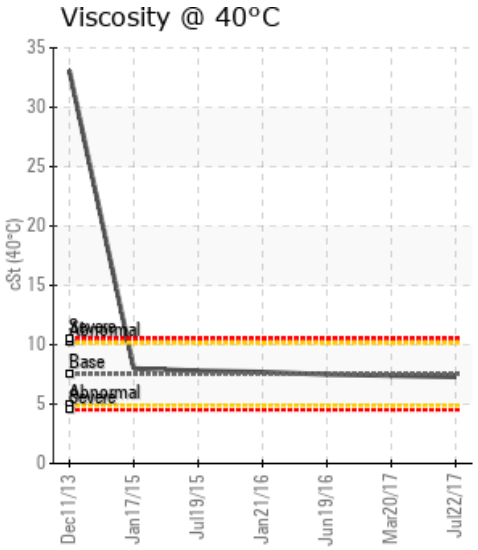
Customer: PTRHTF20133	System Information	Sample Information
ATHABASCA OIL CORP. LEISMER DEMONSTRATION PLANT LSD2-79-10-W4M NEAR CONKLIN, AB Canada Attn: George Ball Tel: (587)233-1312 E-Mail: gball@atha.com	System Volume: 8000 ltr Bulk Operating Temp: 212F / 100C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO LT Make: TORNADO TECHNOLOGIES	Lab No: 02162066 Analyst: Peter Harteveld Sample Date: 07/22/17 Received Date: 08/08/17 Completed: 08/16/17 Peter Harteveld peter.harteveld@HFSinclair.com

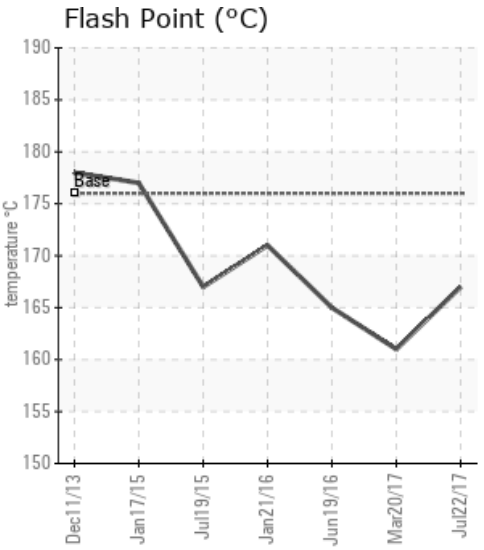
Recommendation: The fluid is in a good condition and suitable for further use. It does show some degradation indicated by a higher percentage of boil-off <335C and an elevated 90% GCD temperature. It is recommended to vent-off low boiler vapors to atmosphere at a regular interval. (suggestion is once a month) Please re-sample in 12 months.

Comments: (GCD) 90% Distillation Point is severely high. (GCD) % < 335°C is marginally high.

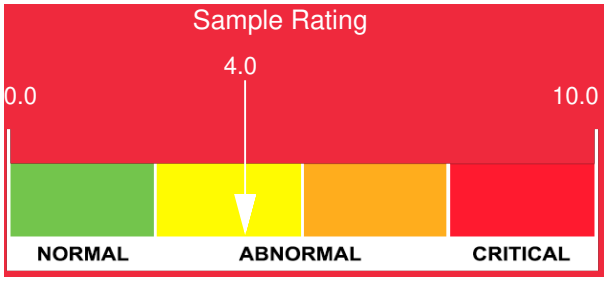
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/22/17	08/08/17	0.0y		333 / 167	36.3	7.3	0.033	0.017	608 / 320	655 / 346	772 / 411	41.20
03/20/17	04/05/17	24.0y		322 / 161	8.5	7.4	0.02	0.033	611 / 322	645 / 341	735 / 390	36.95
06/19/16	07/05/16	18.0y	FLOW LINE	329 / 165	6.7	7.5	0.09	0.013	611 / 322	647 / 342	742 / 394	36.53
01/21/16	02/11/16	0.0y		340 / 171	213.3	7.7	0.09	0.061	606 / 319	639 / 337	733 / 390	44.67
07/19/15	07/31/15	10.0y		333 / 167	33.6	7.8	0.051	0.064	621 / 327	663 / 351	748 / 398	24.74
Baseline Data				349 / 176		7.52	0.1		604 / 318	640 / 338	734 / 390	35.0

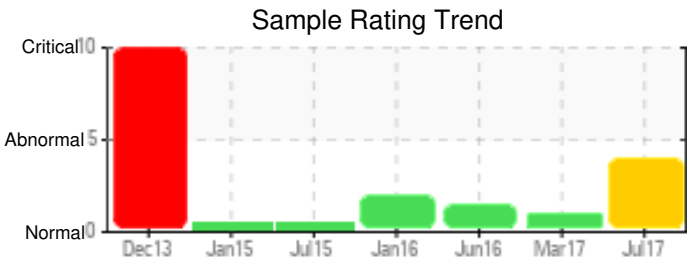






PETRO-CANADA LUBRICANTS

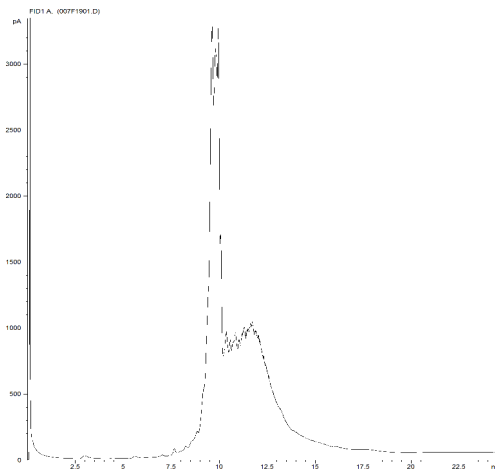


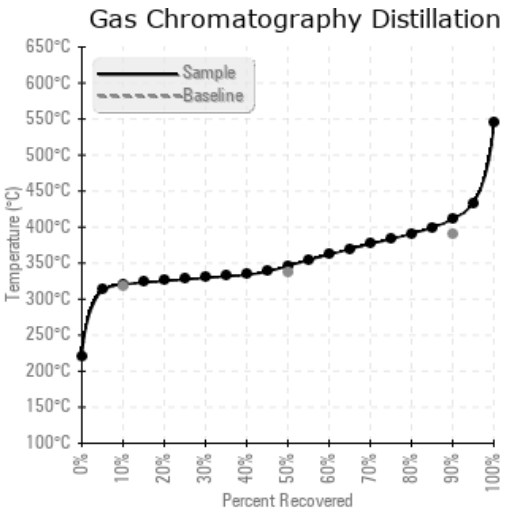


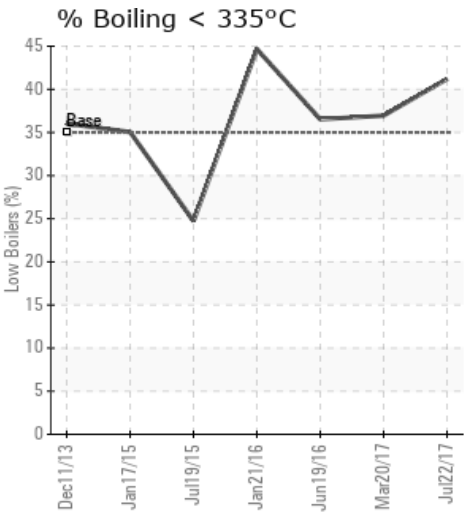
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
07/22/17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0
03/20/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0
06/19/16	5	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	45	0
01/21/16	19	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	87	0
07/19/15	14	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	148	0
Baseline Data			0	0						0			0	0					0				270	

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

GCD Spectrum







Historical Comments	
03/20/17	The fluid is in good condition and suitable for further use. Please resample in 12 months.
06/19/16	The fluid is in good condition and suitable for further use. Please re-sample in 12 months.
01/21/16	Boil-off below 335 degrees C. has increased to 44.7%. This indicates an increased content of low boiler vapors as a result of thermal degradation of the fluid. Please vent the low boiler vapors to atmosphere. The fluid is suitable for further use. Re-sample in 6 months. Indicate fluid service life at next sample. (GCD) % < 335°C is marginally high.
07/19/15	The fluid is in good condition and suitable for further use. Please re-sample in 6 months.