

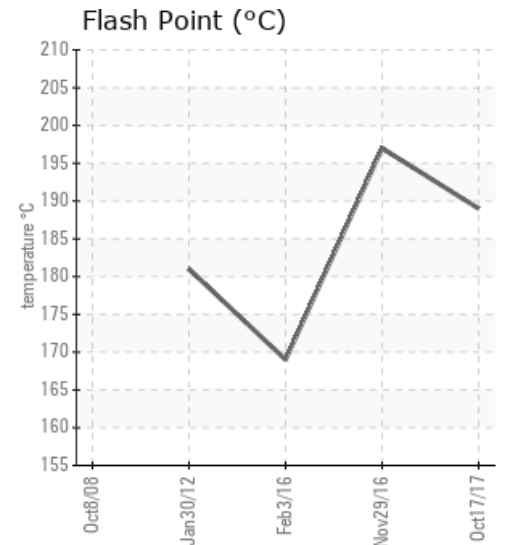
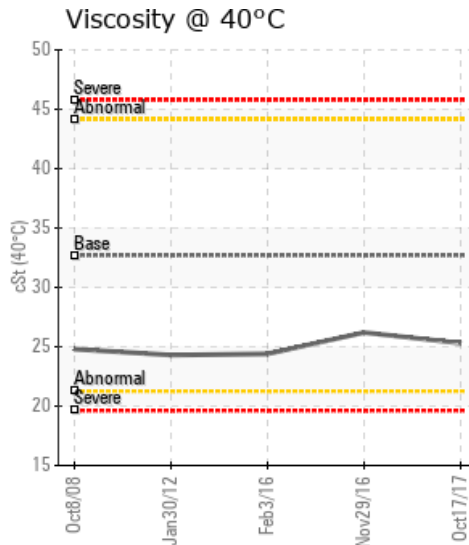
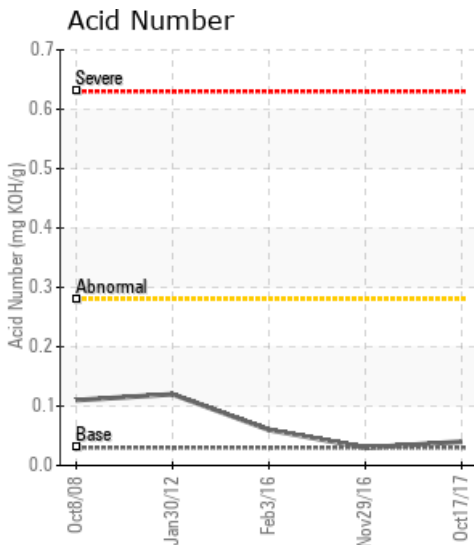
### TREATER #3

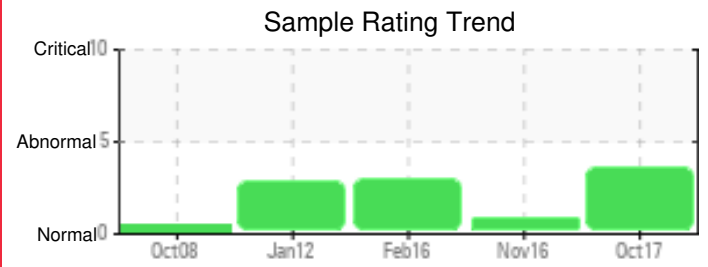
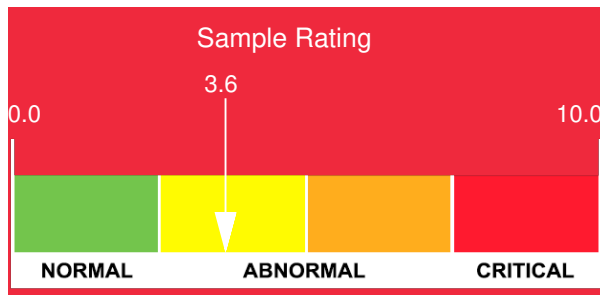
Customer: PTRHTF30011	System Information	Sample Information
COVERIGHT SURFACES CANADA 56 WILLMOTT STREET PO BOX 724 COBOURG, ON K9A 4R5 CANADA Attn: Scott Kniff Tel: (905)373-3446 E-Mail: scott.kniff@arlin.com	System Volume: 7800 ltr Bulk Operating Temp: 465F / 241C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: KONUS	Lab No: 02177163 Analyst: Gloria Gonzalez Sample Date: 10/17/17 Received Date: 10/20/17 Completed: 03/29/18 To discuss this report contact Gloria Gonzalez at (905)569-8600

#### Recommendation:

Comments: (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low. COC Flash Point is marginally low. the overall sample results show the a small portion of the oil has been degraded

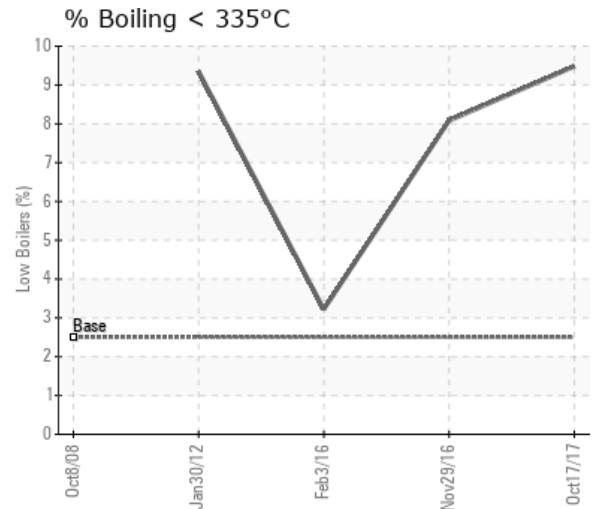
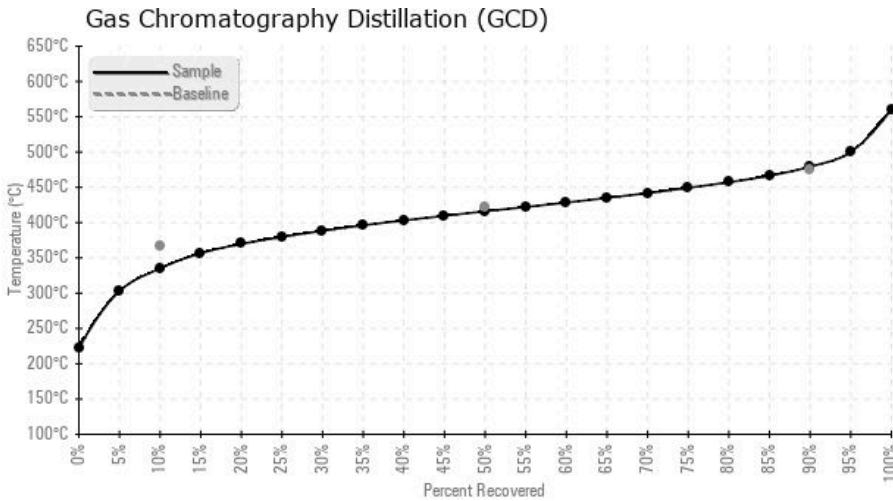
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC) °F/°C	Water (KF) ppm	Viscosity (40°C) cSt	Acid Number mg/KOH/g	Solids %wt	GCD 10% °F/°C	GCD 50% °F/°C	GCD 90% °F/°C	GCD % < 335°C %
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/17/17	10/20/17	6y	INLET OF LINE PUMP	372 / 189	11.5	25.3	0.04	0.023	635 / 335	781 / 416	895 / 479	9.48
11/29/16	12/07/16	0y	PUMP INLET	387 / 197	9.6	26.2	0.03	0.052	650 / 343	792 / 422	914 / 490	8.08
02/03/16	02/05/16	20y	SAMPLE PORT	336 / 169	5.8	24.4	0.06	0.079	690 / 366	793 / 423	913 / 489	3.22
01/30/12	02/15/12	8y		358 / 181	35	24.3	0.12	0.011	642 / 339	781 / 416	897 / 480	9.353
10/08/08	10/08/08					24.8	0.11					
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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
10/17/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	0
11/29/16	1	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	93	0
02/03/16	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	61	1
01/30/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	0
10/08/08	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0
<b>Baseline Data</b>			0	0						0			0	0					0				270	

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



Historical Comments	
11/29/16	The condition of this oil is good and suitable for continued service. There is some evidence of light ends which we will monitor at the next sample interval which we would suggest in 9 months. Also, could provide information on how long the oil has been in the system. (GCD) 90% Distillation Point is marginally high.
02/03/16	The oil analysis indicates that there may be some thermal cracking as the flash point is low indicating some light ends are present. I would suggest another sample in 6 months. COC Flash Point is abnormally low. (GCD) 90% Distillation Point is marginally high.
01/30/12	The oil viscosity remains low, same as 4 years ago. The flash point is also lower than expected. We suggest to vent the low boilers out of the fluid by periodically circulating some hot oil through the expansion tank. Make sure to replace the vapors lost by adding fresh oil to maintain fluid level. We suggest to re-sample every 6 months to monitor progress. If nothing improves noticeably by then we may suggest a partial oil replacement (25-30% of the system).
10/08/08	

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.