

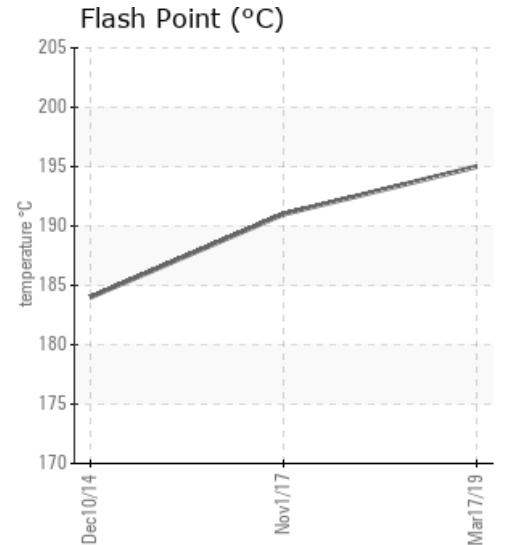
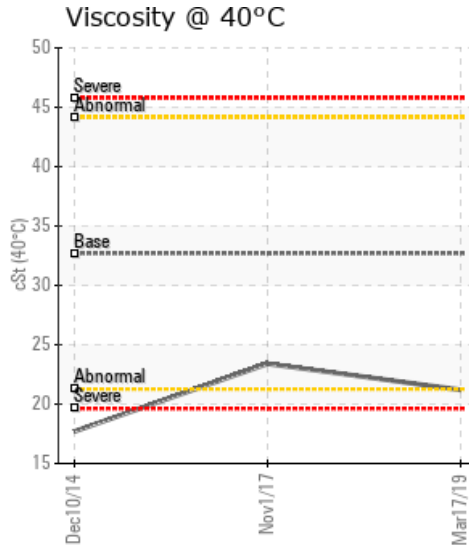
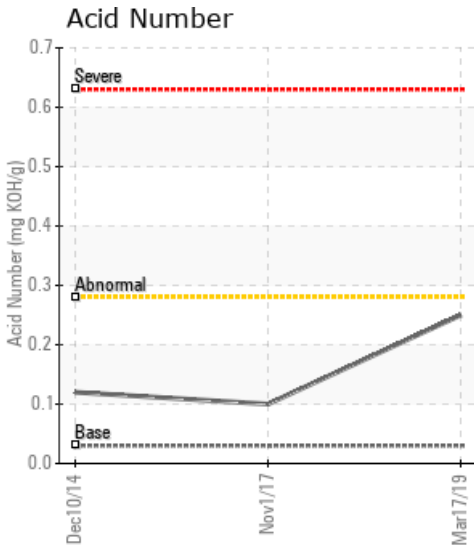
## RF04 SPIN GROUP A

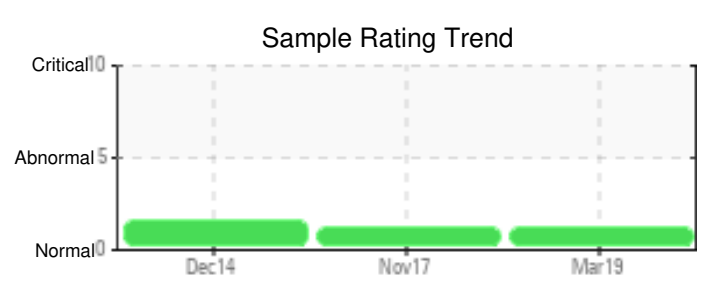
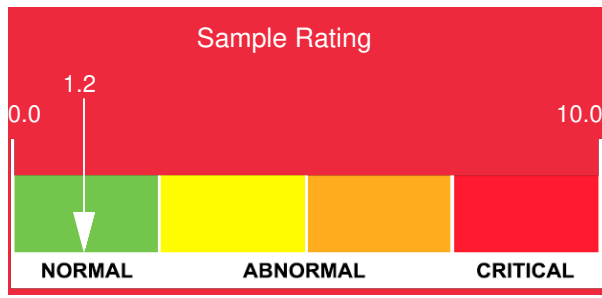
Customer: PTRHTF10057	System Information	Sample Information
PROPEX RINGGOLD PLANT 428 ROLLINS INDUSTRIAL BLVD RINGGOLD, GA 30736 USA Attn: STEWART DOMAINGUE Tel: (423)553-3843 E-Mail: stewart.domaingue@propexglobal.com	System Volume: 30 gal Bulk Operating Temp: 400F / 204C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02275655 Analyst: Jake Finn Sample Date: 03/17/19 Received Date: 03/27/19 Completed: 04/11/19

**Recommendation:** Consider changing filters or kidney-loop filtering the fluid during any shutdown periods to remove iron wear particles and any 'light debris' as seen by the lab. Oil is otherwise suitable for continued use, please re-submit sample in 1 year.

**Comments:** Iron levels have increased to 168 ppm. Viscosity has slightly decreased to 21.2 cSt @ 40°C. Flash point has improved since last sample. Please remember to include hours of use on oil and age of hot oil system when submitting samples for testing. Visc @ 40°C is abnormally low.

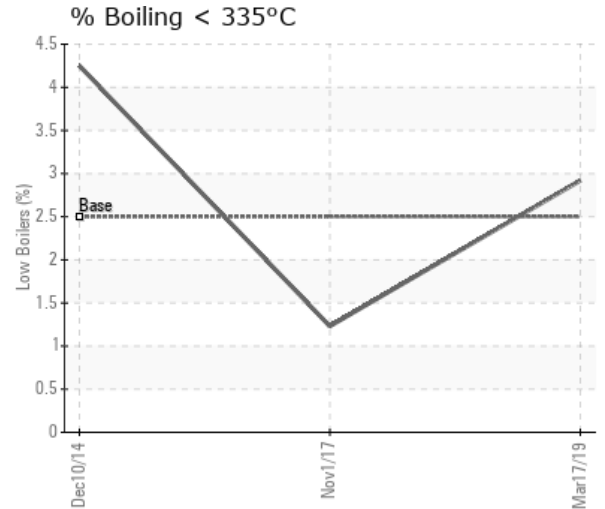
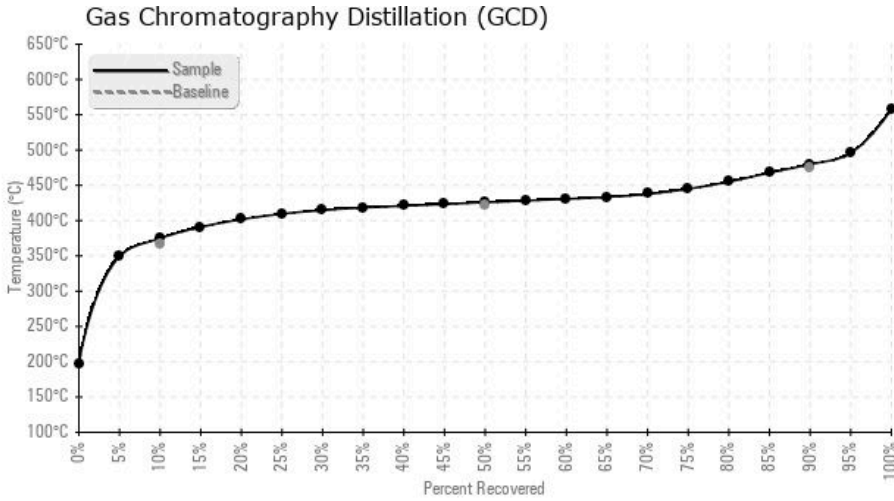
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/17/19	03/27/19	0c		383 / 195	18.9	21.2	0.250	0.067	707 / 375	798 / 426	896 / 480	2.92
11/01/17	11/13/17	0c		376 / 191	21.4	23.4	0.10	0.030	714 / 379	798 / 426	880 / 471	1.23
12/10/14	01/07/15	0c		363 / 184	128.9	17.7	0.12	0.073	703 / 373	806 / 430	899 / 482	4.25
<b>Baseline Data</b>				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
03/17/19	168	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	68	0
11/01/17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0
12/10/14	22	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	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	
11/01/17	Oil suitable for continued use. Please re-submit sample in 1-year. Low Wear Metals; Low Contamination Levels; 21.4ppm water - low; very low acid numbers; 23.4 CsT @40oC Viscosity; COC Flash Point is marginally low (191 oC), but higher then it was during the last sample (3 years ago) by 7oC. Very Light Debris visible
12/10/14	Visc @ 40°C is severely low ~50% reduction. COC Flash Point is marginally low, yet in an acceptable range. Please verify the Heat Transfer oil being used as make up is Cafflo AF and not another oil. Send in next oil sample during the scheduled interval

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