

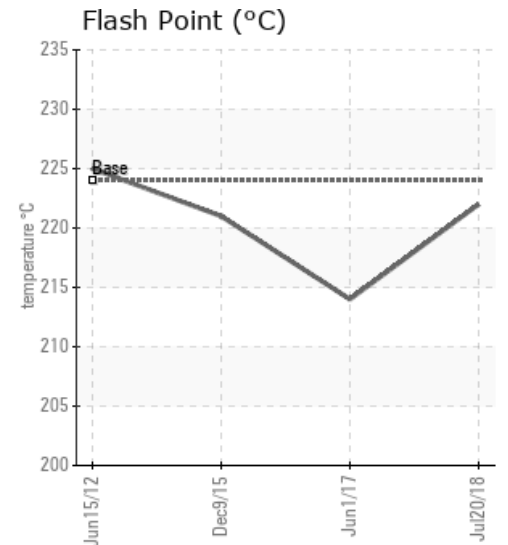
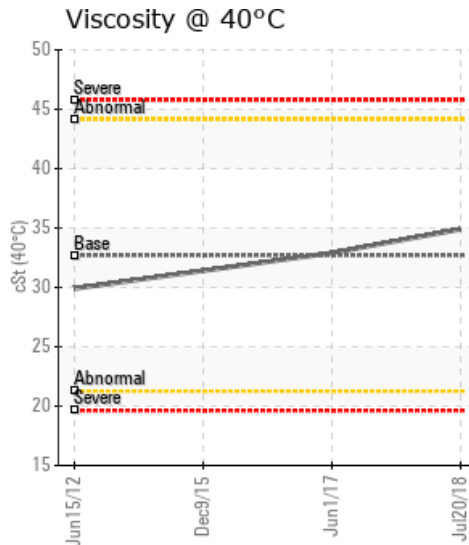
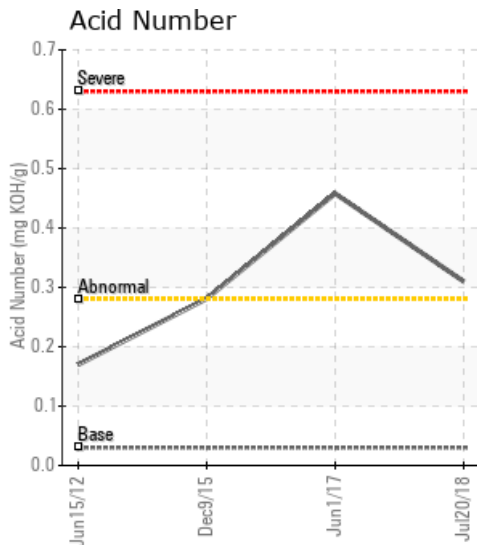
## PASTE PLANT 2 HTF

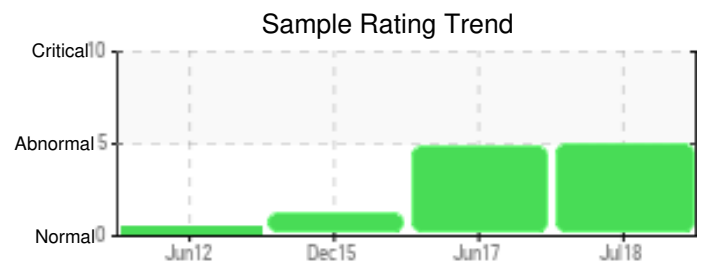
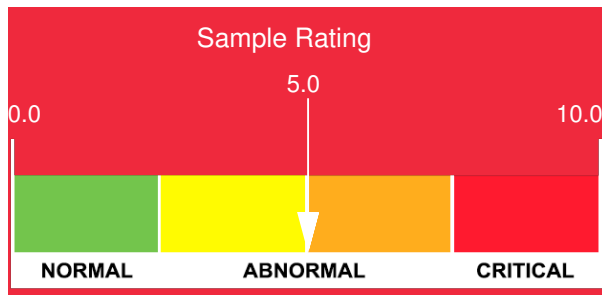
Customer: PTRHTF60012	System Information	Sample Information
TOMAGO ALUMINIUM COMPANY 638 TAMAGO ROAD, TOMAGO NEW SOUTH WALES NEWCASTLE, 2324 Australia Attn: KATE MANGAN/MAGALI GENDRE Tel: 249667018 E-Mail: kate.mangan@tomago.com.au	System Volume: 0 gal Bulk Operating Temp: 225F / 107C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02232583 Analyst: Yutong Gao Sample Date: 07/20/18 Received Date: 08/08/18 Completed: 08/29/18 To discuss this report contact Yutong Gao at (403)873-1876

**Recommendation:** The current fluid has a moderate oxidation, however it is suitable for further operation. The solid content is high due to the fluid oxidation or third party contamination. The 96ppm Fe reading is also a concern because the system should not have wears and tears. Please continue to run the fluid and take one sample in 6 months to monitor the conditions. Please make sure to flush the sampling line well enough before taking the representative samples.

**Comments:** Iron ppm levels are noted. Solid levels are high. Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.

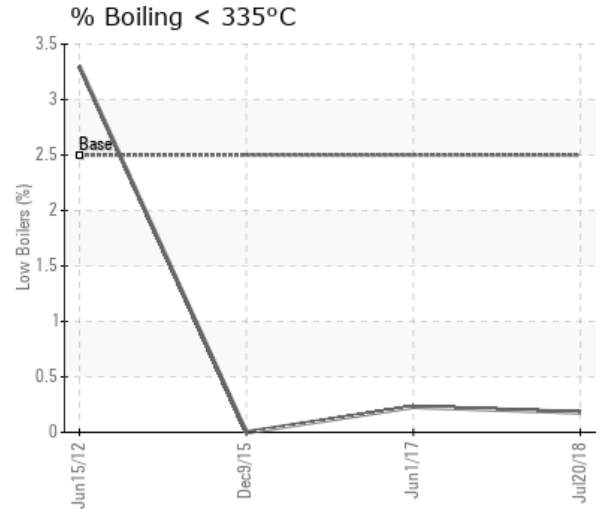
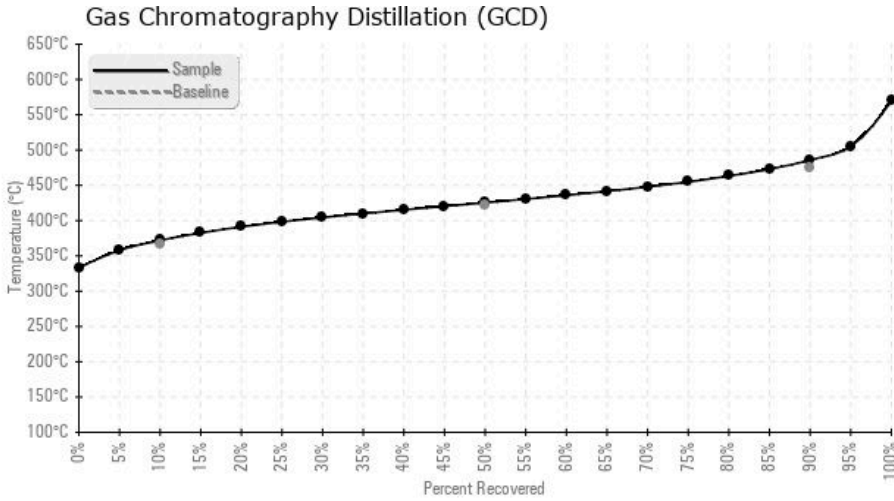
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/20/18	08/08/18	0c		432 / 222	28.2	34.9	0.31	0.718	701 / 372	798 / 425	906 / 486	0.18
06/01/17	08/08/17	0c	HEATER ROOM	417 / 214	48.5	32.9	0.458	0.233	755 / 402	819 / 437	916 / 491	0.23
12/09/15	12/29/15	0c		430 / 221	93.3	31.4	0.281	0.092	707 / 375	798 / 426	891 / 477	0.00
06/15/12	07/03/12			437 / 225	60	29.9	0.17	0.048	684 / 362	793 / 423	896 / 480	3.3
<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	
07/20/18	96	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	209	1	
06/01/17	10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	172	0
12/09/15	18	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	148	1
06/15/12	27	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	101	0	
Baseline Data			0	0						0			0	0					0				270		

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



Historical Comments	
06/01/17	The current fluid has moderate oxidation, so that the AN number and GCD 10%, 50% and 90% have been increased. However, the fluid is still suitable for use. Please take one sample in 12 months to monitor the conditions.
12/09/15	Acid Number (AN) is abnormally high, which indicates the moderate oil oxidation. All other oil properties are normal. Please take one sample in 12 months to monitor the fluid conditions.
06/15/12	The oil condition is normal. We have updated the system volume and operating temperatures.

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