

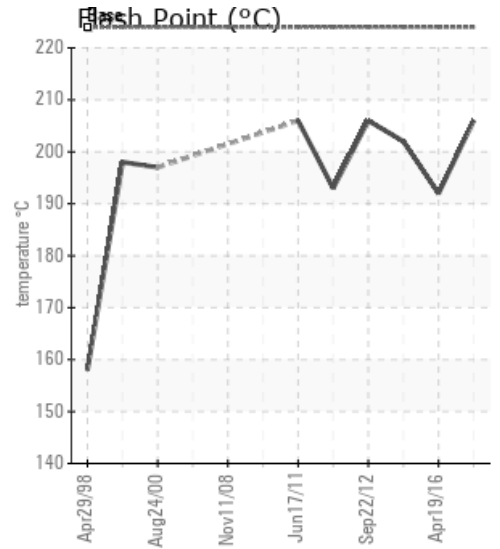
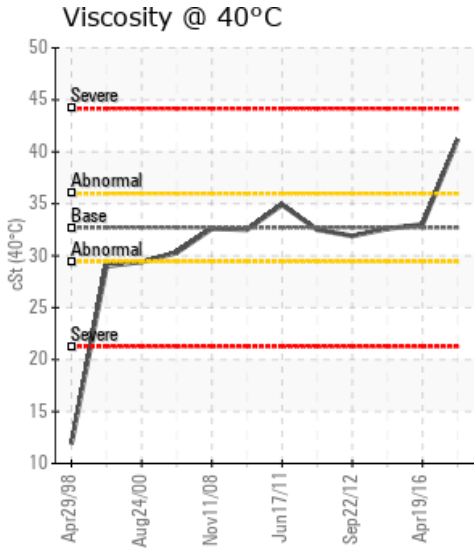
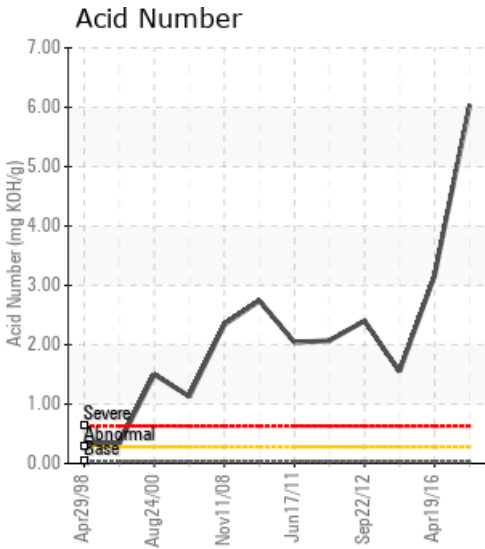
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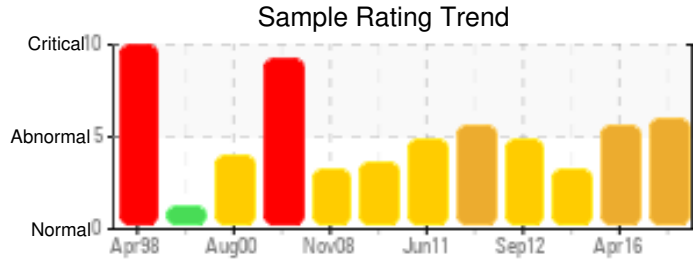
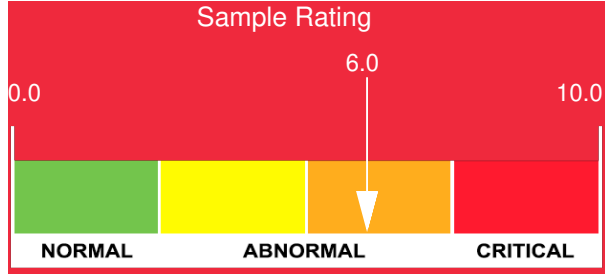
Customer: PTRHTF10012	System Information	Sample Information
GL VENEER 2224 E. SLAUSON AVENUE HUNTINGTON PARK, CA USA Attn: Maintenance Manager Tel: E-Mail:	System Volume: 600 gal Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: PARKER BOILERS	Lab No: 02518127 Analyst: Ron LeBlanc Sample Date: 10/13/22 Received Date: 10/24/22 Completed: 11/16/22 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

Recommendation: AN is severely elevated in conjunction with Pentane insolubles elevated. The GCD 90% distillation point is elevated. This data indicates oxidation and has caused heavy sludge and insolubles in the system. The viscosity has elevated significantly confirming sludge and system fouling. Take another sample and purge oil before capturing sample to confirm results.

Comments: Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high.

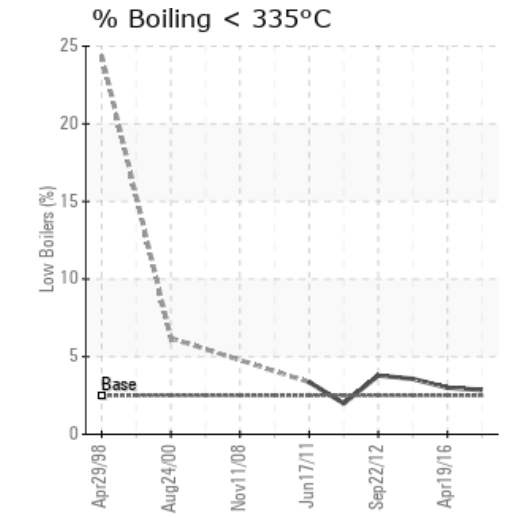
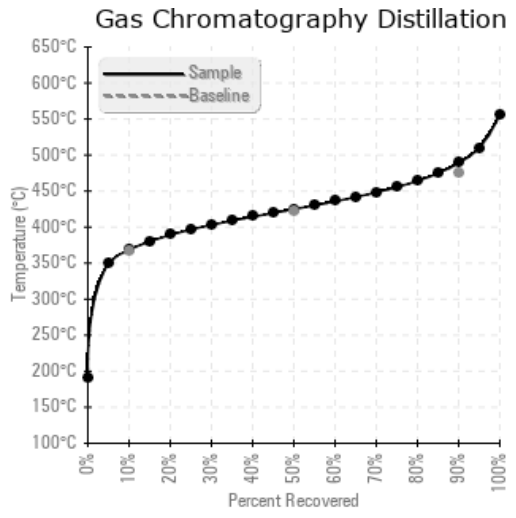
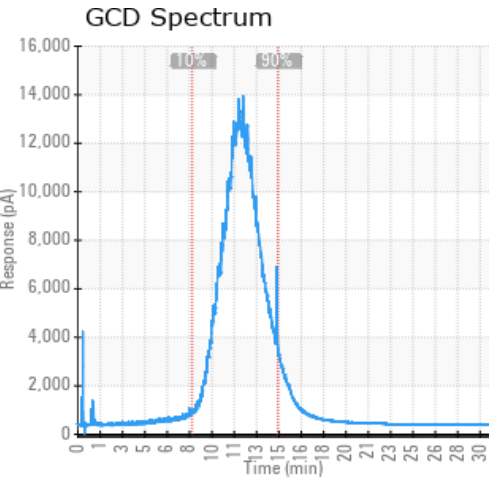
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/13/22	10/24/22	3.0y		403 / 206	260.5	41.2	6.04	3.50	695 / 368	797 / 425	912 / 489	2.86
04/19/16	04/28/16	4.0y		378 / 192	126.7	33.0	3.17	1.09	688 / 365	794 / 423	905 / 485	3.00
10/12/13	10/28/13	1.0y	PLATTEN LINE	396 / 202	41.7	32.6	1.55	0.257	682 / 361	788 / 420	888 / 476	3.57
09/22/12	10/03/12		NA	403 / 206	141	31.9	2.4	0.818	687 / 364	790 / 421	892 / 478	3.786
11/18/11	11/30/11		NA	379 / 193	146	32.5	2.07	0.625	697 / 370	792 / 422	889 / 476	1.991
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
10/13/22	93	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	267	3
04/19/16	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238	2
10/12/13	82	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	226	3
09/22/12	113	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0	231	6
11/18/11	107	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2	1	11	0	206	10
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	
04/19/16	Acid number and pentane insoluble are very high. Recommend drain, flush and recharge system with fresh Calflo AF. Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. COC Flash Point is marginally low.
10/12/13	Even though it appears the acid level (Acid Number) dropped a bit, it is still very high and exceeds condemning limits. Therefore we can expect it to rise even further. If an oil change was done then it appears a fair amount of the previously acidic oil was left in the system, or the fluid still sees contamination from an acidic material. If a system cleaning, flushing and refill has not taken place since the last sample we recommend to plan for it so the fluid can look healthy again. Acid Number (AN) is severely high.
09/22/12	The TAN is still rising and is now well beyond condemning limits. The insoluble solids are also exceeding severe warning limits. We have been advising for years to change this fluid and we say it again. The fluid needs to be replaced and the system thoroughly cleaned before production related issues start to appear if it hasn't started already.
11/18/11	As mentioned in the previous analysis interpretation, considering the age of the oil, the past contamination problems, the excessively high acidity level (high TAN) and high amount of insoluble solids in the fluid, we recommend to plan for a full system cleaning, flushing and recharge. We have documented procedures to assist plus the extensive experience of our distributor.

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