

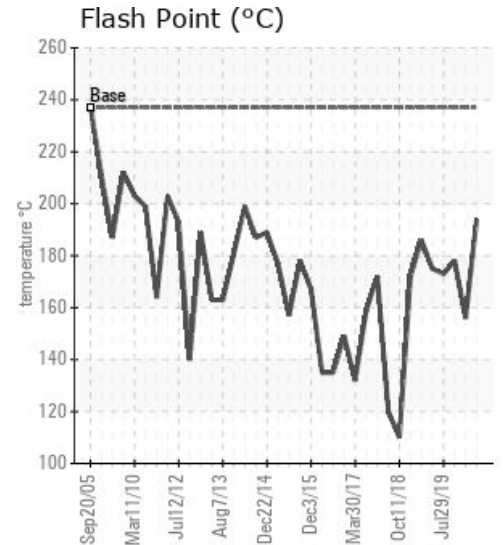
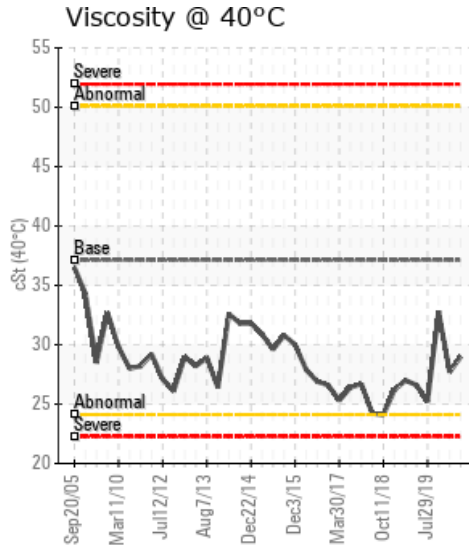
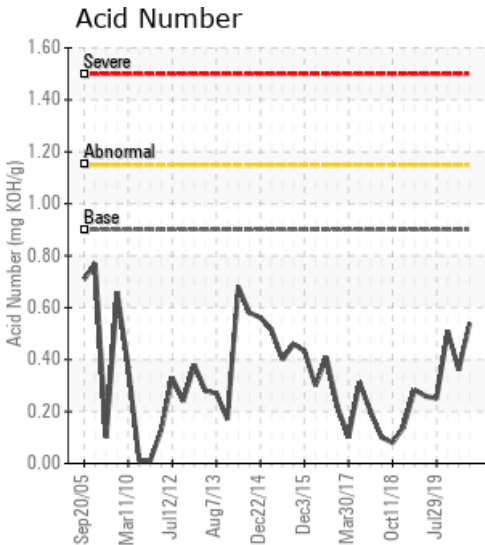
[VIT E 116] EAST

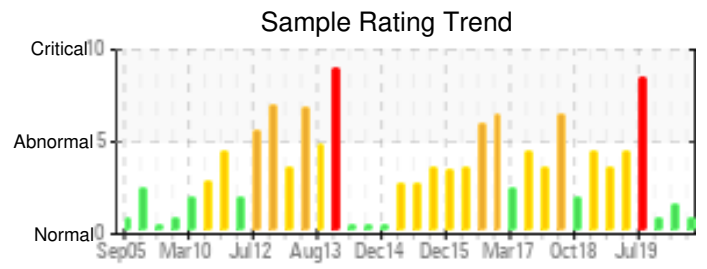
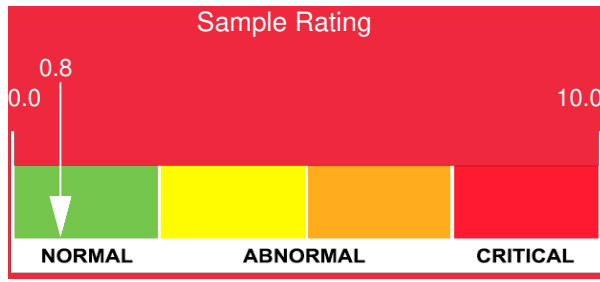
Customer: PTRHTF10004	System Information	Sample Information
ADM VITAMIN E PLANT 3700 EAST DIVISION STREET DECATUR, IL 62526 USA Attn: Rick Cluck Tel: (217)451-7770 E-Mail: ricky.cluck@adm.com	System Volume: 2200 gal Bulk Operating Temp: 550F / 288C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: AMERICAN HEATING	Lab No: 02391629 Analyst: Joe Goecke Sample Date: 11/25/20 Received Date: 12/08/20 Completed: 12/11/20 Joe Goecke Joe.goecke@petrocanadalsp.com

Recommendation: Flash Point just a little low however within operating limits. all other numbers good and system is okay for continued use, resample at next scheduled interval.

Comments: COC Flash Point is marginally low.

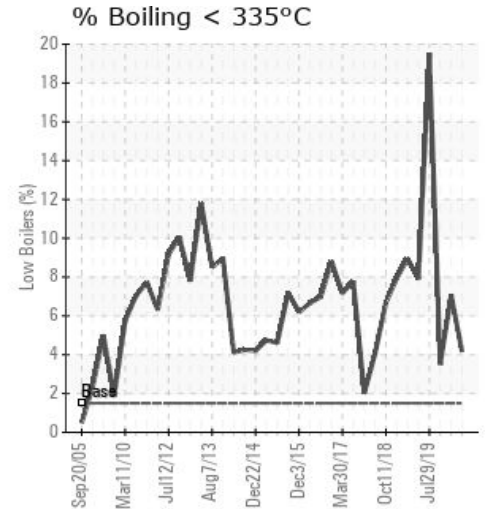
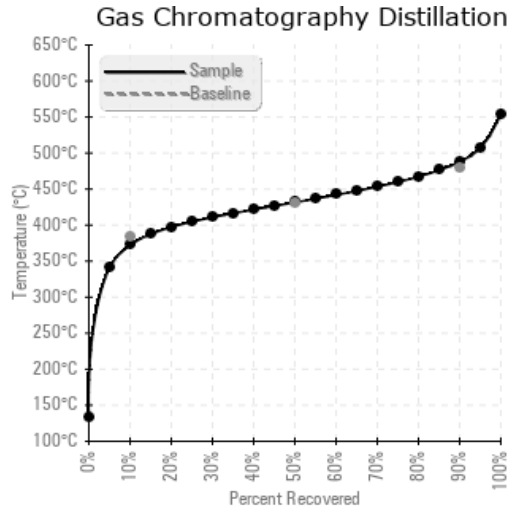
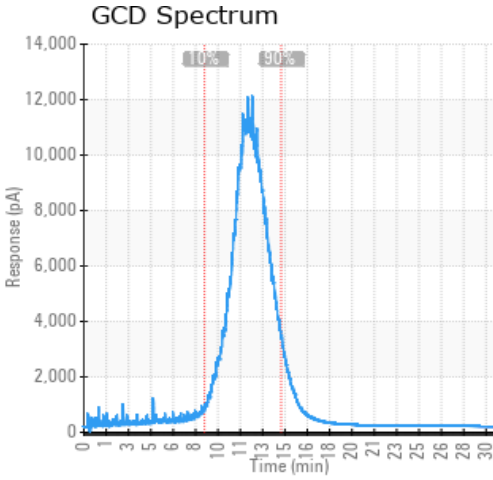
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/25/20	12/08/20	0m	Pump	381 / 194	10.4	29.0	0.54	0.112	702 / 372	809 / 432	910 / 488	4.17
08/25/20	09/03/20	0m	FILTER	313 / 156	19.2	27.7	0.36	0.032	667 / 353	803 / 428	909 / 487	7.07
05/08/20	05/13/20	0m		352 / 178	22.4	32.8	0.51	0.040	707 / 375	810 / 432	910 / 488	3.52
07/29/19	08/08/19	0m	HOT OIL PUMP	343 / 173	12.5	25.2	0.250	0.087	463 / 240	754 / 401	872 / 467	19.51
05/29/19	06/05/19	0m		347 / 175	20.5	26.6	0.259	0.062	657 / 347	796 / 425	909 / 487	7.91
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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	
11/25/20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	
08/25/20	20	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	17	0
05/08/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
07/29/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
05/29/19	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
Baseline Data			0	0						0			0	0				0	0					230	

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



Historical Comments

08/25/20	All major items point to a build up of low boilers. Viscosity dropped 5 cst, flash point dropped 20 deg C, and the GCD <335 increased 3.5%. All other parameters look good. Continue to run until next sample and plan for a possible change at winter shut down. COC Flash Point is severely low.
05/08/20	All parameters are in good shape. Flash point is a little low but okay. continue to use and resample in 90 days. COC Flash Point is abnormally low.
07/29/19	Low Boilers are very high at almost 20%. Flash point not much change or viscosity. Please consider a system change in the next 30-60 days with a resample. (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) 90% Distillation Point is marginally low.
05/29/19	Low boilers approaching 8% with viscosity and flash points both slightly lower the system is showing some signs of these building up in the system. System is okay for continued use resample in 60-90 days. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.

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