

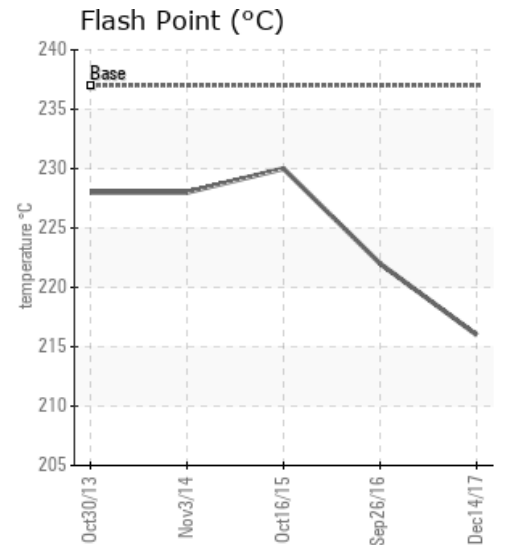
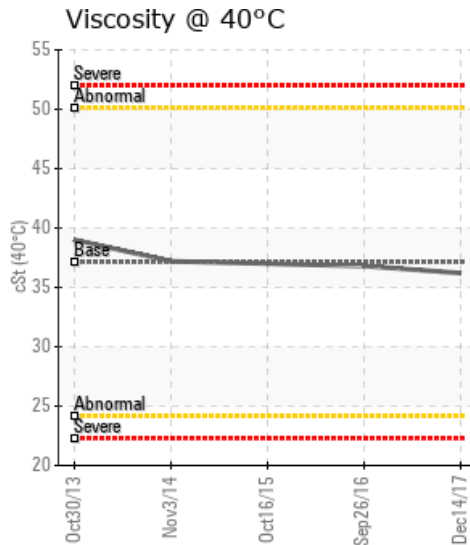
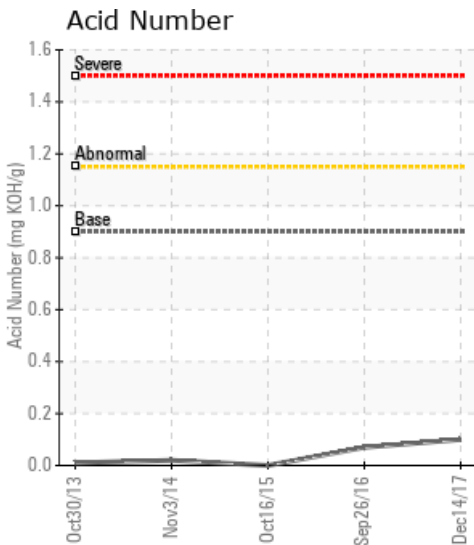
RS HOT OIL SYSTEM

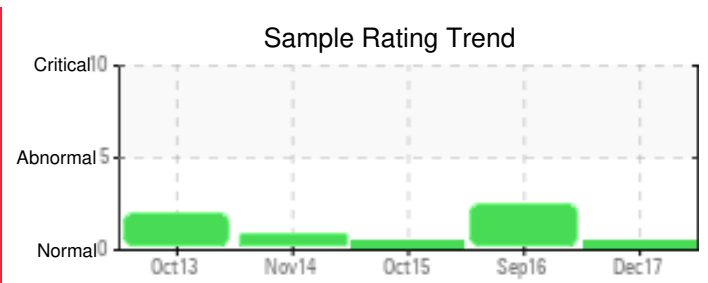
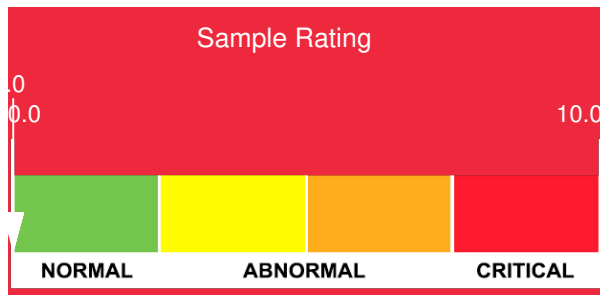
Customer: PTRHTF10139	System Information	Sample Information
ARCHER DANIELS MIDLAND (ADM) 1251 BEAVER CHANNEL PKWY. CLINTON, IA 52732 USA Attn: Shaun Hartman Tel: E-Mail: shaun.hartman.contractor@adm.com	System Volume: 2000 gal Bulk Operating Temp: 600F / 316C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: VAPOR POWER	Lab No: 02205582 Analyst: Neil Buchanan Sample Date: 12/14/17 Received Date: 03/22/18 Completed: 03/23/18 To discuss this report contact Neil Buchanan at 612-619-6571

Recommendation: Sample looks good and is fit for further service. Resample next interval to monitor.

Comments:

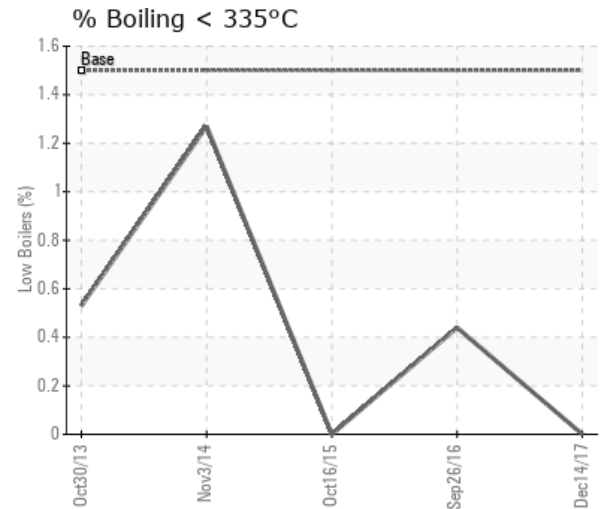
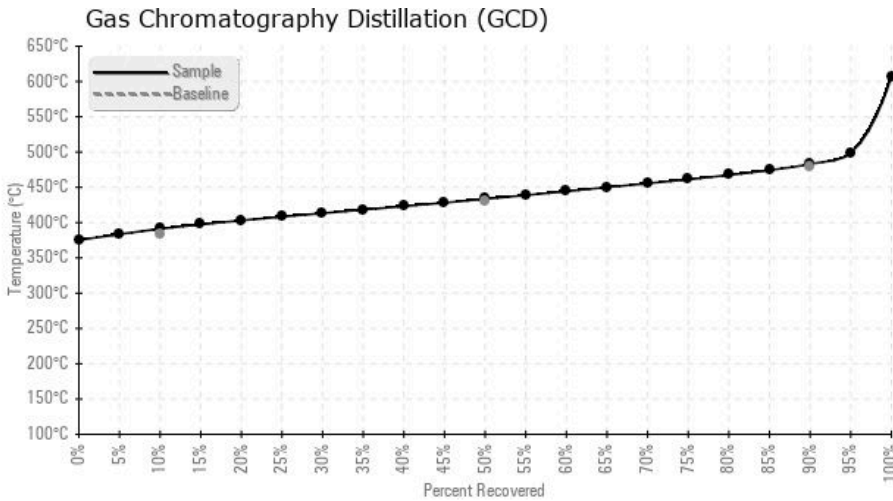
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/14/17	03/22/18	0y		421 / 216	19.7	36.2	0.10	0.080	736 / 391	812 / 434	902 / 483	0.00
09/26/16	10/25/16	1y	PUMP	432 / 222	29.2	36.8	0.07	0.095	718 / 381	814 / 434	928 / 498	0.44
10/16/15	11/12/15	0y	OFF PROCESS PIPING	446 / 230	0.00	37.0	0.000	0.069	719 / 382	804 / 429	914 / 490	0.00
11/03/14	11/17/14	0y	OFF PUMP	442 / 228	214.4	37.2	0.02	0.121	709 / 376	810 / 432	918 / 492	1.27
10/30/13	11/13/13	0y	PUMP	442 / 228	18.3	39.0	0.01	0.142	717 / 380	818 / 436	927 / 497	0.53
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
12/14/17	46	0	0	0	1	0	1	0	0	0	19	4	0	0	0	0	0	0	0	0	0	0	1	1
09/26/16	16	0	0	0	0	0	0	0	0	0	30	1	0	0	0	0	0	0	0	0	0	0	0	0
10/16/15	15	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0	1	0
11/03/14	7	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	1	1
10/30/13	6	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	1	0
Baseline Data			0	0						0			0	0					0				230	

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



Historical Comments	
09/26/16	High silicon contamination, possibly from sampling. GCD at 90% is slightly elevated showing formation of some high boilers. Phosphorus is well below new oil levels of 230 ppm.
10/16/15	Sample looks good and fit for further use. Resample next interval.
11/03/14	Sample looks good but H2O (free) is reported as 0.2% which is 2000 ppm and above condemning limit. Resample and test for water by KF only. (GCD) 90% Distillation Point is marginally high.
10/30/13	It would have been useful to have the time the has been in the system. The oil condition is acceptable for further use and no action are needed at this time. Re-sample yearly at least.