

[KEYERA BRAZEAU RIVER GAS PLANT / 3-12-46-14W5] PLANT 1

Customer: PTRHTF30084
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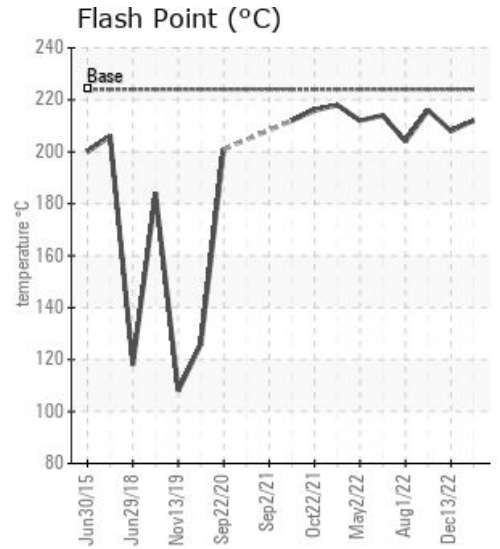
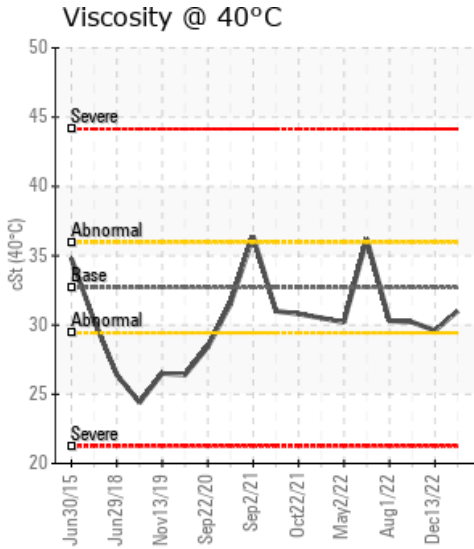
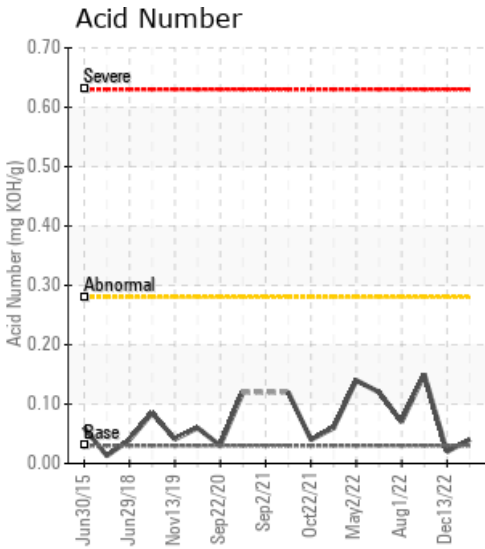
System Information
 System Volume: 14000 ltr
 Bulk Operating Temp: 446F / 230C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA CALFLO AF
 Make: IAP HEATER

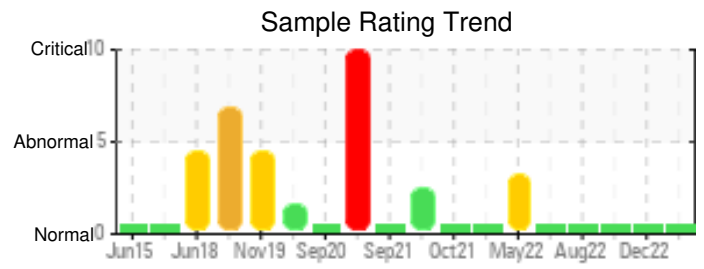
Sample Information
 Lab No: 02544893
 Analyst: Lyle Dach
 Sample Date: 03/04/23
 Received Date: 03/13/23
 Completed: 03/16/23
 Lyle Dach
 lyle.dach@HFSinclair.com

Recommendation: Fluid looks to be in very good condition and is suitable for continued use. Water content continues to drop, venting program appears to be working well. Resample in 6 months.

Comments:

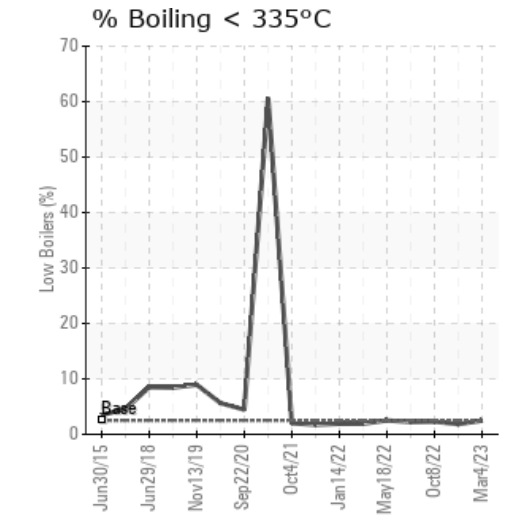
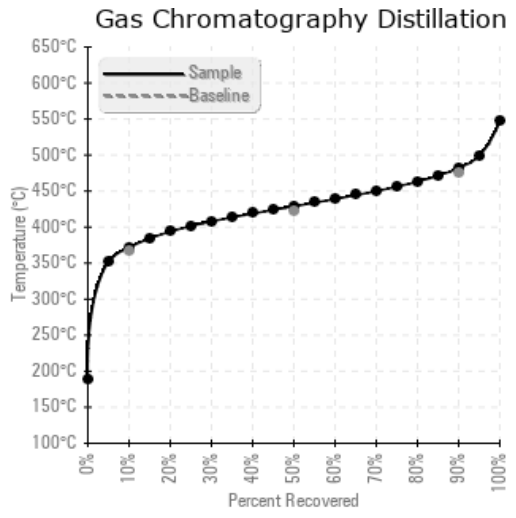
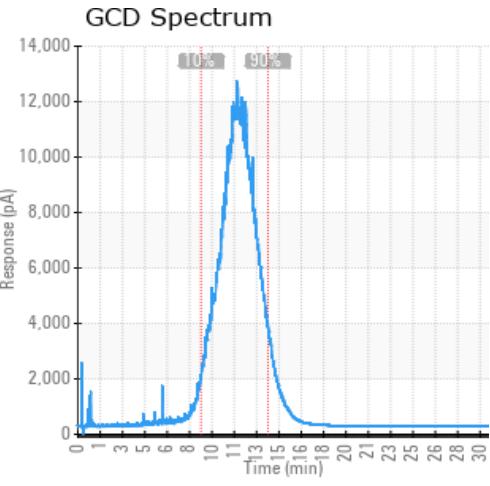
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/04/23	03/13/23	20.0m		414 / 212	16.5	31.0	0.04	0.036	701 / 372	804 / 429	900 / 482	2.47
12/13/22	12/22/22	18.0m	after pump discharge	406 / 208	49.2	29.6	0.02	0.045	706 / 375	806 / 430	901 / 483	1.83
10/08/22	10/17/22	0.0m		421 / 216	117.9	30.2	0.15	0.355	704 / 373	804 / 429	898 / 481	2.29
08/01/22	08/18/22	15.0m	PUMP DISCHARGE	399 / 204	142.9	30.3	0.07	0.027	704 / 373	804 / 429	897 / 481	2.22
05/18/22	05/26/22	12.0m		417 / 214	131.6	36.2	0.12	0.062	701 / 371	804 / 429	899 / 482	2.51
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
03/04/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	38	0
12/13/22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	42	0
10/08/22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	37	0
08/01/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	39	0
05/18/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	43	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	
12/13/22	Units are being sampled at very short intervals recommended sampling for heat transfer systems with no issues is 12 months. Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
10/08/22	Sample results indicate that the fluid is in good condition and is suitable for continued service. Pentane insolubles are up slightly from the last sample. Resample in 12 months.
08/01/22	Fluid is in very good condition and is suitable for continued service. Fluids iPH is 6.54 and acid number is very low at 0.07. Resample in 12 months.
05/18/22	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.

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