

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

**Customer: PTRHTF30084**

Keyera Partnership Brazeau River Ga...  
Box 7318  
Drayton Valley, AB T7A 1S5 Canada  
Attn: Mike Sowada  
Tel: (780)805-0588  
E-Mail: mike\_sowada@keyera.com

**System Information**

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

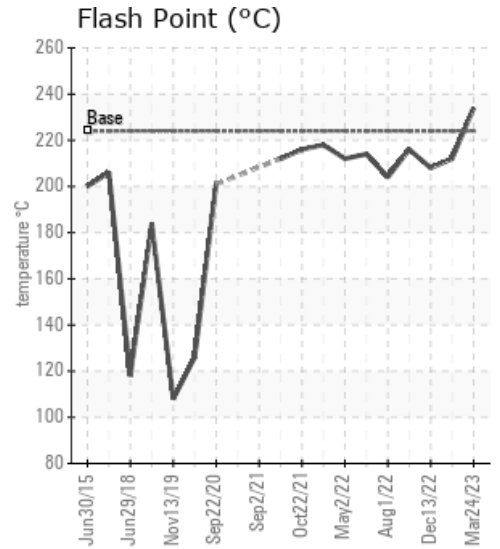
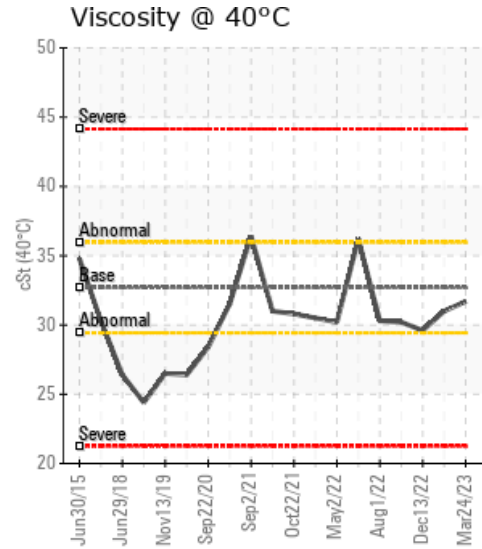
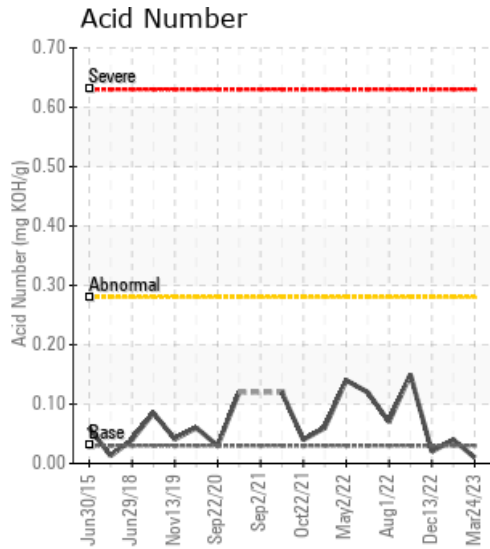
**Sample Information**

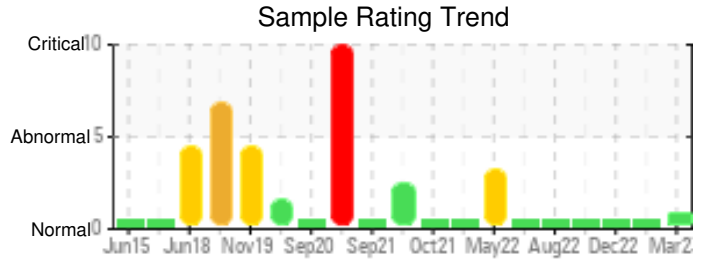
Lab No: 02550039  
Analyst: Lyle Dach  
Sample Date: 03/24/23  
Received Date: 04/05/23  
Completed: 04/12/23  
Lyle Dach  
lyle.dach@HFSinclair.com

Recommendation: Sample results indicate that the fluid is in very good condition and would be suitable for continued service. Water content is very low, 10% distillation of 385°C would be considered within spec of new fluid. Resample in 12 months.

Comments: (GCD) 10% Distillation Point is marginally high.

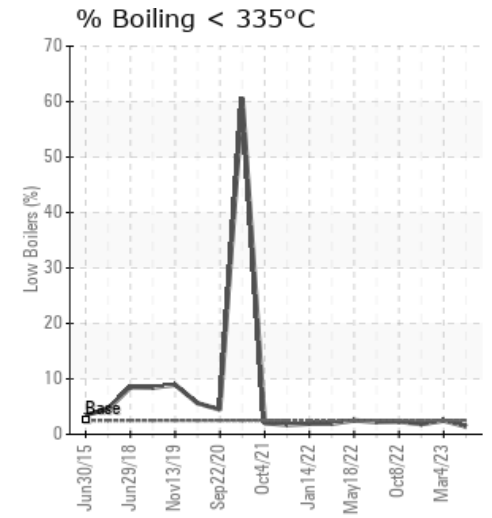
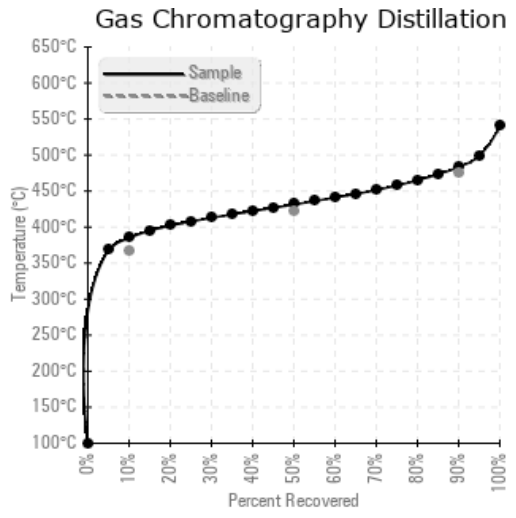
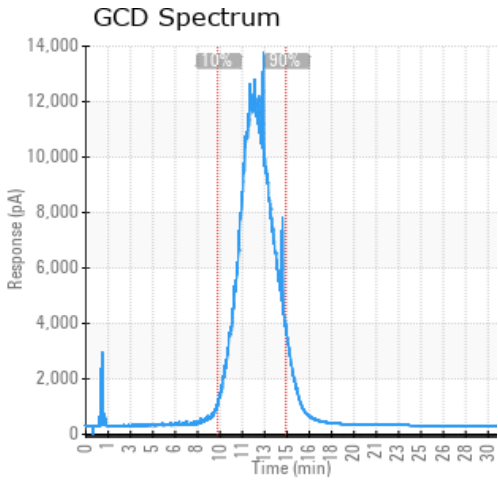
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/24/23	04/05/23	24.0m		453 / 234	13.7	31.7	0.01	0.028	725 / 385	808 / 431	902 / 483	1.41
03/24/23	04/05/23	0.0m	18-06	446 / 230	120.6	35.0	0.01	0.031	731 / 388	817 / 436	913 / 490	1.27
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
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	
03/24/23	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	2	0	299	2	
03/24/23	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	20	0
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	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	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	0	37	0
<b>Baseline Data</b>			0	0						0			0	0					0					270	

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



Historical Comments	
03/24/23	Fluid is in good condition overall. Sulfur, viscosity, 10% and 90% distillation are slightly high. Sample location could have affected the results, this sample was collected from the seal flush tank. Water content is low. (GCD) 10% Distillation Point is marginally high. (GCD) 90% Distillation Point is marginally high.
03/04/23	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.
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.

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.