

## [KEYERA PARTNERSHIP / 3-12-46-14W5] PLANT 2

**Customer: PTRHTF30084**  
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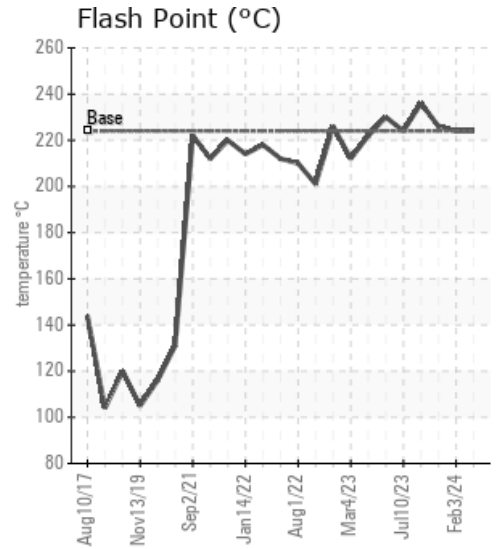
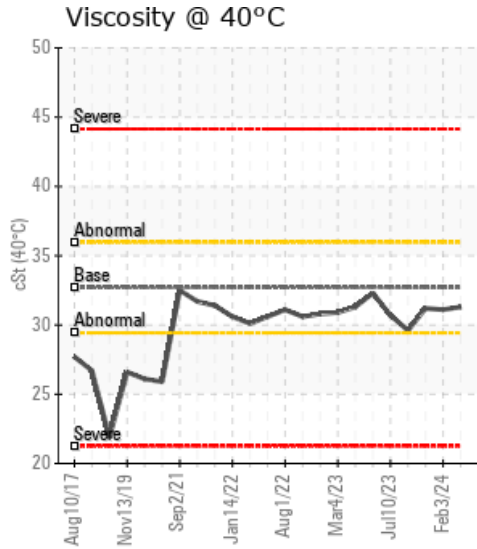
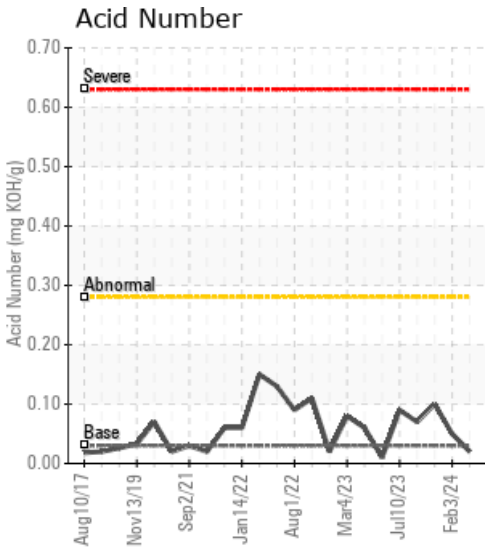
**System Information**  
 System Volume: 14000 ltr  
 Bulk Operating Temp: 455F / 235C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO AF  
 Make: PETROTHERM ENG.

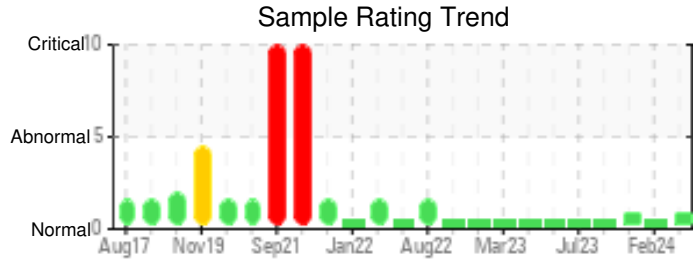
**Sample Information**  
 Lab No: 02628037  
 Analyst: Lyle Dach  
 Sample Date: 04/01/24  
 Received Date: 04/10/24  
 Completed: 04/17/24  
 Lyle Dach  
 lyle.dach@HFSinclair.com

Recommendation: Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.

Comments: (GCD) 90% Distillation Point is marginally high.

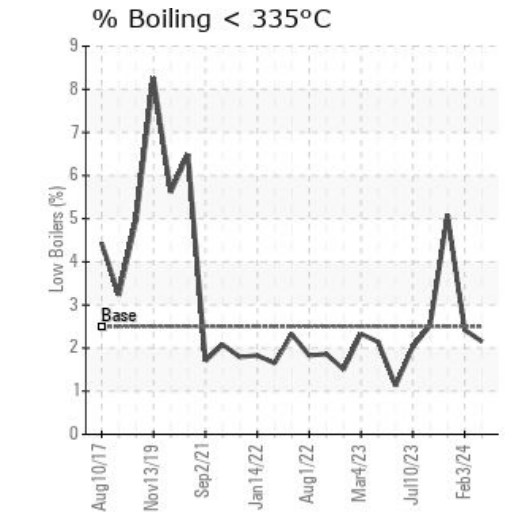
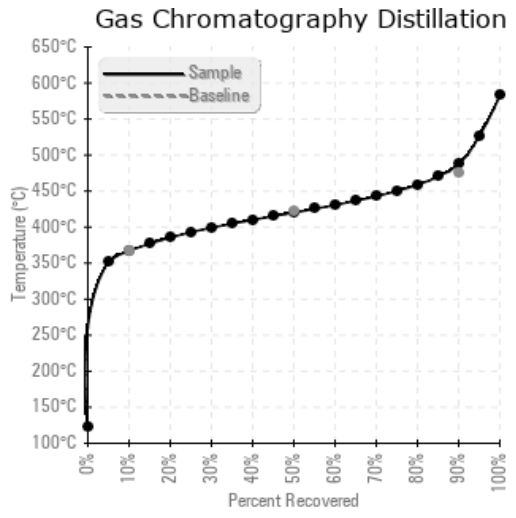
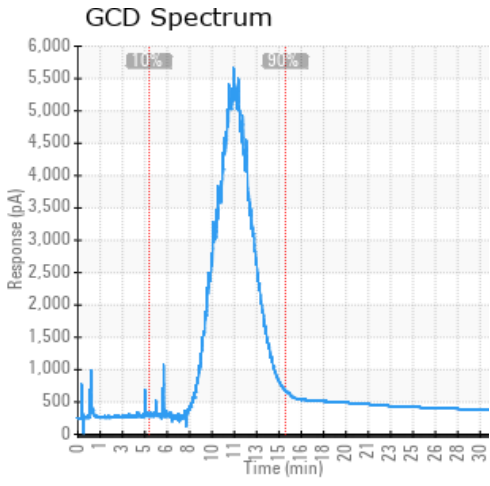
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/01/24	04/10/24	36.0m		435 / 224	27	31.3	0.02	0.051	692 / 367	788 / 420	909 / 487	2.15
02/03/24	02/13/24	36.0m		435 / 224	30	31.1	0.05	0.043	701 / 372	803 / 428	899 / 482	2.42
11/30/23	12/08/23	0.0m	HOH #2 pump	439 / 226	21	31.2	0.10	0.026	676 / 358	787 / 420	915 / 491	5.08
10/01/23	10/11/23	40.0m	AFTER PUMP	457 / 236	27.7	29.6	0.07	0.061	697 / 370	799 / 426	899 / 482	2.52
07/10/23	07/19/23	24.0m	after main pump	435 / 224	28.9	30.7	0.09	0.044	704 / 373	804 / 429	899 / 482	2.03
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
04/01/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	45	0
02/03/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	46	0
11/30/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	46	0
10/01/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	49	0
07/10/23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	58	1
<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	
02/03/24	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
11/30/23	Sample results indicate that the fluid is in suitable condition for continued service. 90% distillation point is slightly elevated, confirm blanket gas is functioning properly as fluid oxidizing could cause the increase. Resample in 12 months. (GCD) 90% Distillation Point is abnormally high.
10/01/23	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
07/10/23	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.

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