

## [CENOVUS PECO / 12-01-49-16W5] H800

**Customer: PTRHTF20039**  
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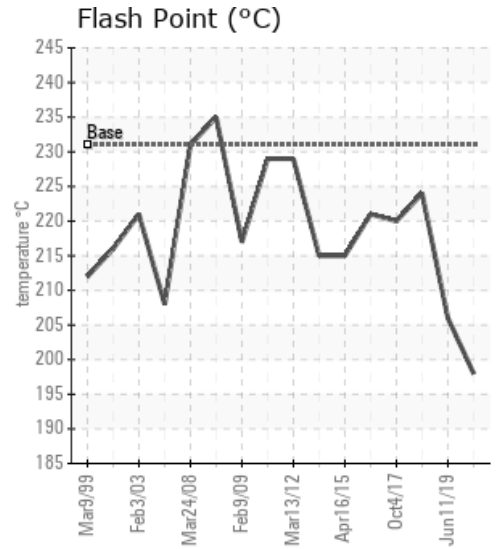
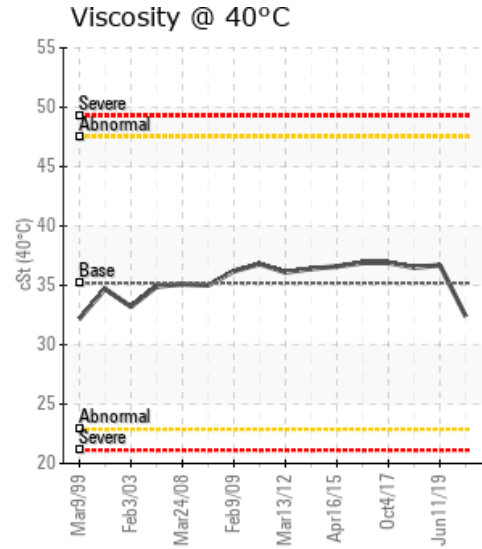
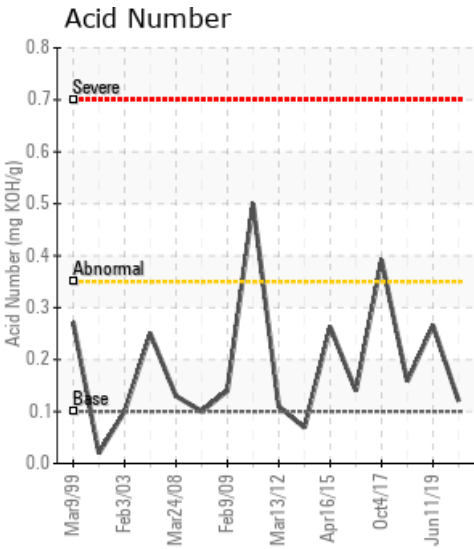
**System Information**  
 System Volume: 12000 ltr  
 Bulk Operating Temp: 410F / 210C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO HTF  
 Make: PRO FAB CANADIAN

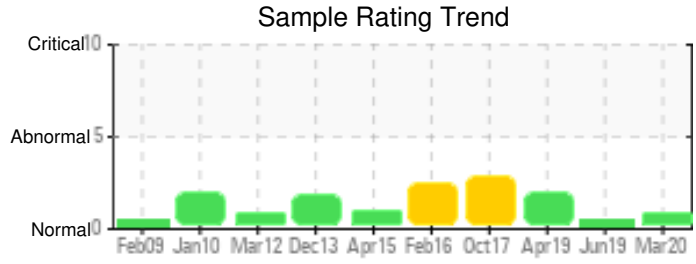
**Sample Information**  
 Lab No: 02347905  
 Analyst: Peter Hartevelde  
 Sample Date: 03/09/20  
 Received Date: 04/08/20  
 Completed: 04/09/20  
 Peter Hartevelde  
 peter.hartevelde@petrocanadalsp.com

Recommendation: COC Flash Point is marginally low. Venting low boilers off the system is good maintenance. Otherwise fluid is in good condition

Comments: COC Flash Point is marginally low.

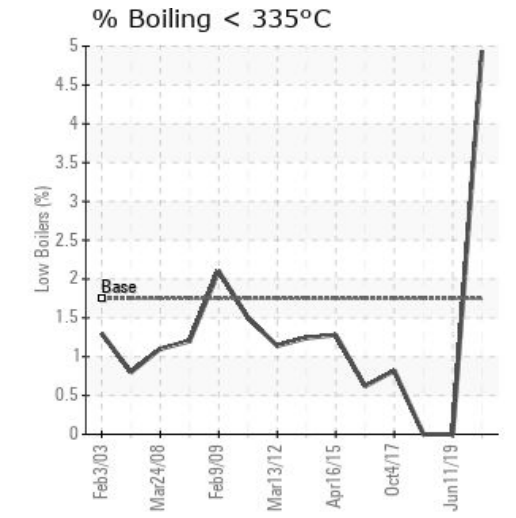
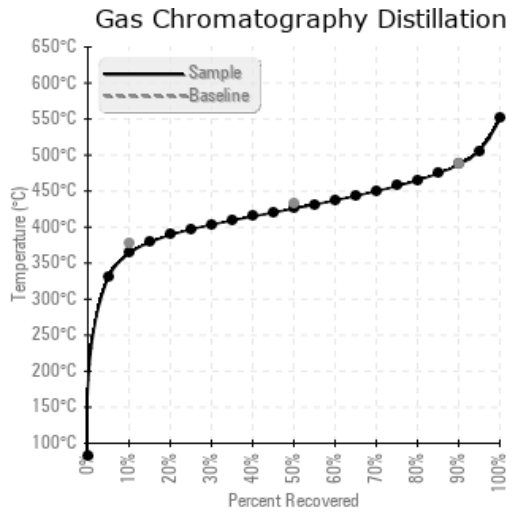
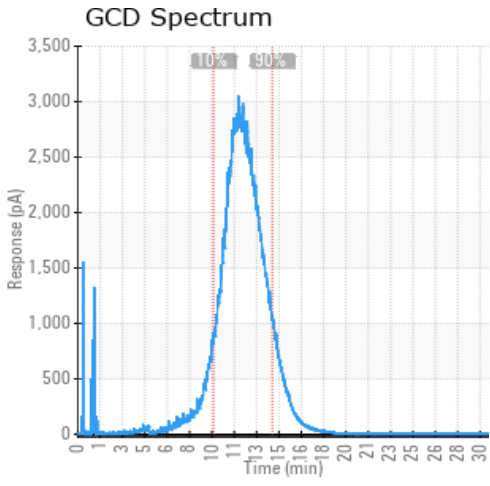
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/09/20	04/08/20	0y	MAIN TANK LEVEL	388 / 198	7.7	32.4	0.12	0.140	686 / 363	798 / 426	908 / 487	4.94
06/11/19	06/14/19	6y	TANK OUTLET	403 / 206	22.0	36.7	0.266	0.275	706 / 374	800 / 427	901 / 483	0.00
04/11/19	04/18/19	0y	DISCHARGE OF PUMPS	435 / 224	12.8	36.5	0.158	0.517	708 / 375	802 / 428	905 / 485	0.00
10/04/17	10/18/17	0y		428 / 220	17.0	36.9	0.392	0.830	702 / 372	800 / 427	903 / 484	0.82
02/25/16	03/07/16	0y	BY HEAT EXCHANGER	430 / 221	3.3	36.9	0.14	0.639	699 / 370	795 / 424	892 / 478	0.62
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75





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
03/09/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0
06/11/19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	0
04/11/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0
10/04/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	0
02/25/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	0
<b>Baseline Data</b>			0	0						0			0	0					0				280	

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



Historical Comments	
06/11/19	Fluid is in very good condition. The solids content and acid number that were marginally high a couple years ago are now in the normal range. Suggest annual sample submissions to proactively monitor fluid condition.
04/11/19	The fluid is in good condition and suitable for further use. The Pentane Insoluble (solids) content is borderline high. Consider filtration of the fluid while transferring from the temporary storage tank back into the system. Please re-sample after the system has been filled. Pentane Insolubles levels are abnormally high.
10/04/17	The TAN is elevated indication some oxidation has occurred. Pentane insolubles are high. Ensure gas blanket is operating. Resample in 6 months. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high.
02/25/16	The fluid is in good condition and suitable for further use. Pentane Insolubles (solids content) has exceeded the reportable limit of 0.5%. Please consider filtration of the fluid and resample after filtration has taken place. Pentane Insolubles levels are severely high.

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