

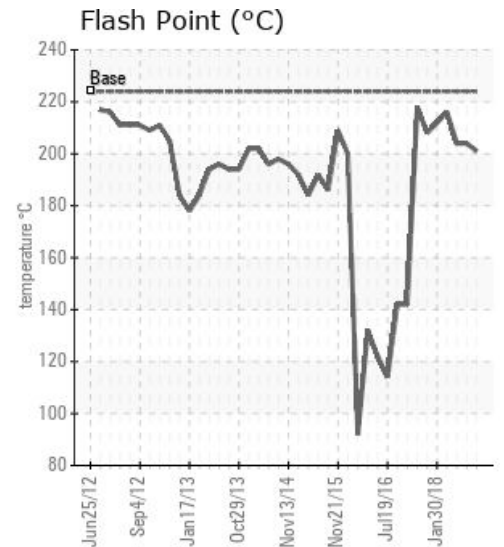
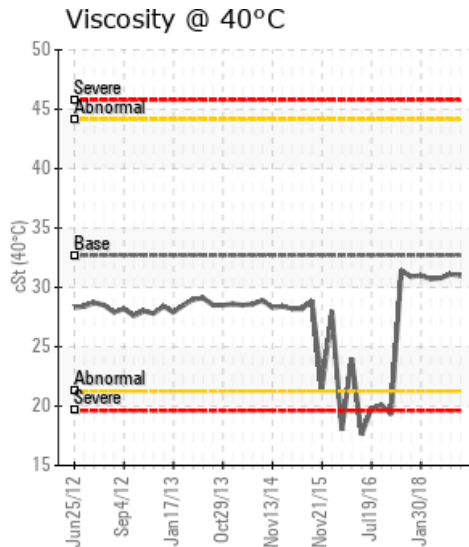
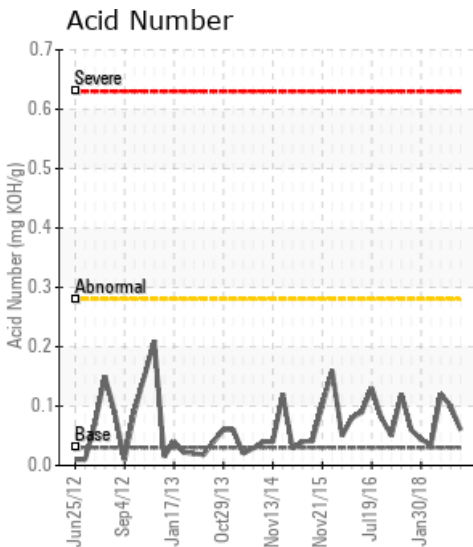
[HOT OIL SAMPLE STATION] SILANE 4.0 DISTILLATION

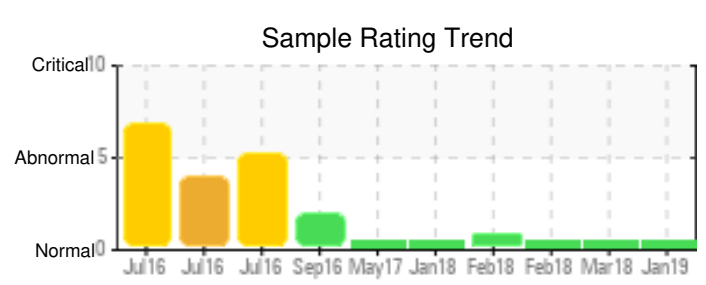
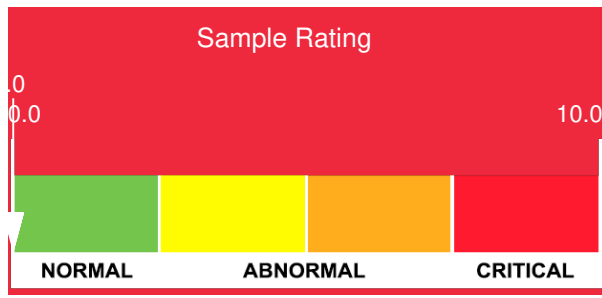
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N N.E. MOSES LAKE, WA 98837 USA Attn: Sam Bright Tel: (509)766-8902 E-Mail: sam.bright@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: COEN	Lab No: 02264532 Analyst: Ron LeBlanc Sample Date: 01/16/19 Received Date: 01/25/19 Completed: 01/29/19

Recommendation: Sample appears normal. Re-sample at normal interval.

Comments:

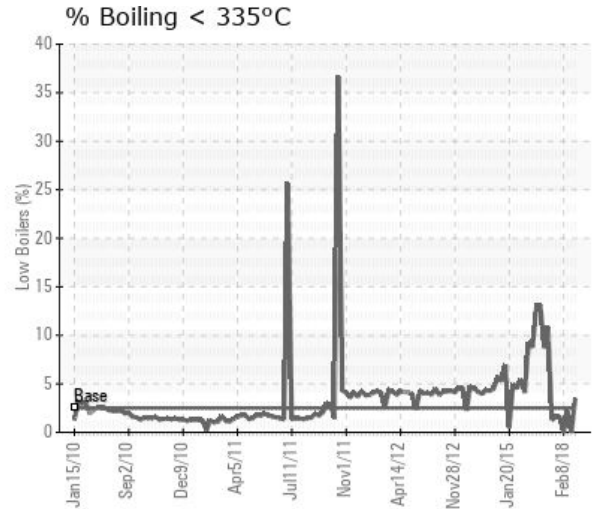
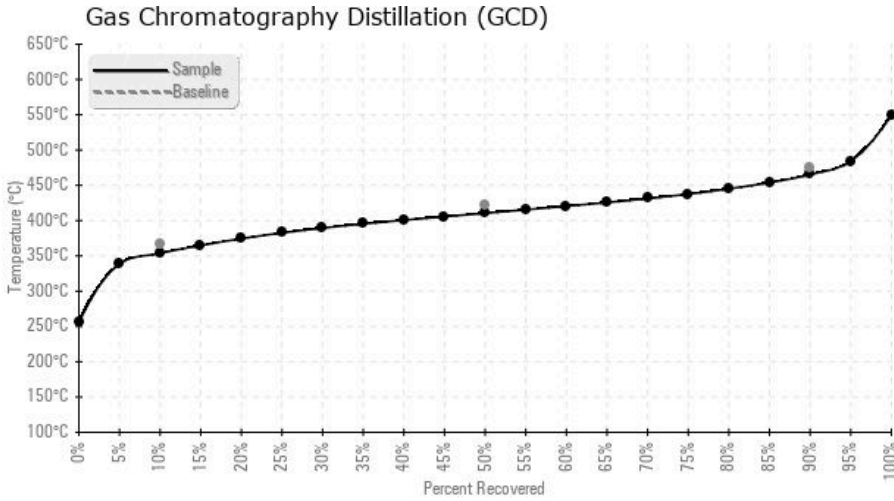
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/16/19	01/25/19	28m	TCS INLET VENT	394 / 201	43.9	31.0	0.06	0.072	669 / 354	771 / 411	870 / 465	3.46
03/22/18	03/29/18	18m		399 / 204	9.5	31.1	0.10	0.069	700 / 371	791 / 422	895 / 479	0.00
02/16/18	02/22/18	17m		399 / 204	8.7	30.8	0.12	0.046	691 / 366	794 / 424	889 / 476	2.19
02/08/18	02/15/18	17m		421 / 216	2.6	30.7	0.034	0.049	728 / 387	800 / 427	888 / 476	0.00
01/30/18	02/07/18	16m		414 / 212	5.3	31.0	0.044	0.074	692 / 367	792 / 422	888 / 476	1.57
05/31/17	06/05/17	8m	DISTO HOT OIL	406 / 208	17.0	30.9	0.060	0.052	692 / 367	797 / 425	897 / 481	1.60
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
01/16/19	38	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	169	0
03/22/18	60	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	202	0
02/16/18	54	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	200	0
02/08/18	50	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	198	0
01/30/18	66	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	212	0
05/31/17	36	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	231	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	
03/22/18	Sample looks normal. Pentane insoluble increased slightly from previous sample.
02/16/18	Sample appears close to normal. The silicon stayed relatively the same as the last 3 samples. The (GCD) 10% distillation point dropped to normal this sample.
02/08/18	Pentane insoluble have dropped over the last 3 samples. The viscosity has dropped slightly over the last 3 samples as well. The (GCD) 10% distillation point is elevated approximately 20 degrees over last 2 samples. (GCD) 10% Distillation Point is marginally high.
01/30/18	Pentane insoluble dropped significantly in this sample. Debris dropped from moderate to very lite.
05/31/17	Sample appears normal. Resample in 3 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.