

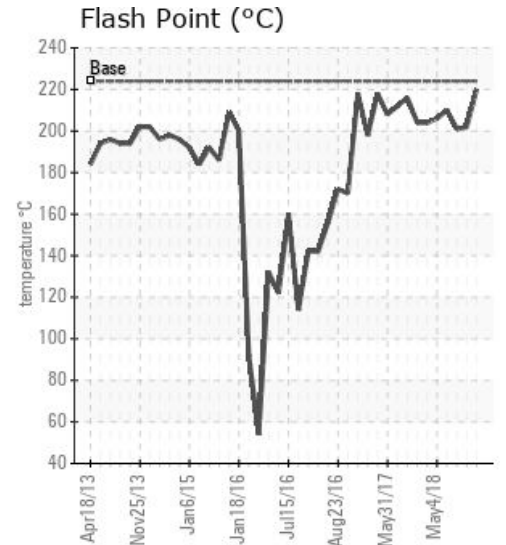
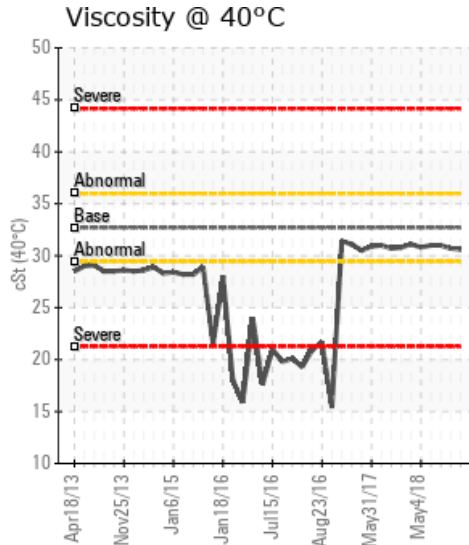
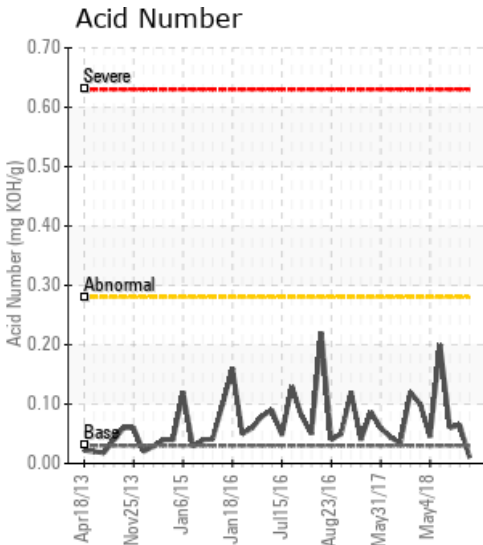
SILANE 4.0 DISTILLATION

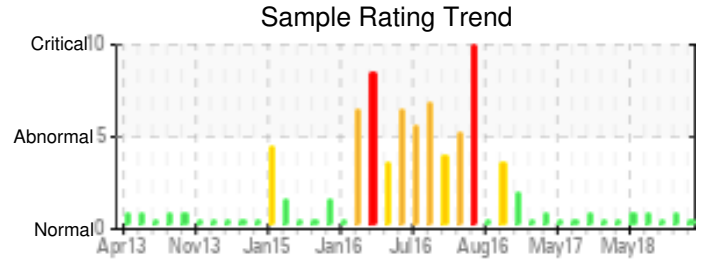
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N N.E. MOSES LAKE, WA 98837 US Attn: Chris Fuller Tel: (509)793-0723 E-Mail: chris.fuller@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: COEN	Lab No: 02626259 Analyst: Ron LeBlanc Sample Date: 03/24/24 Received Date: 04/02/24 Completed: 04/11/24 Ron LeBlanc Ronald.LeBlancSr@HFSinclair.com

Recommendation: By all appearances the oil appears to be in normal range. We have asked R&D to identify condition of the hidden oxidation additives that 'normal' sample practices do not identify.

Comments:

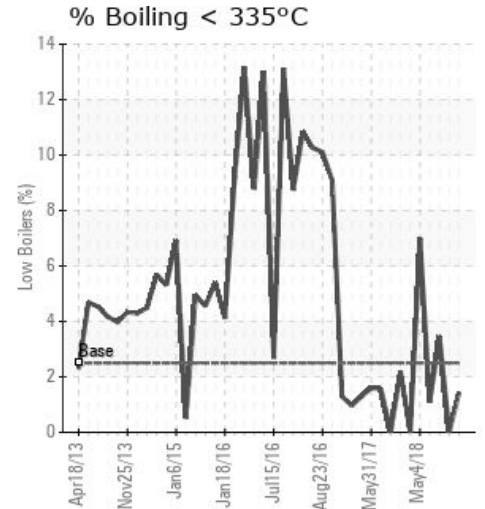
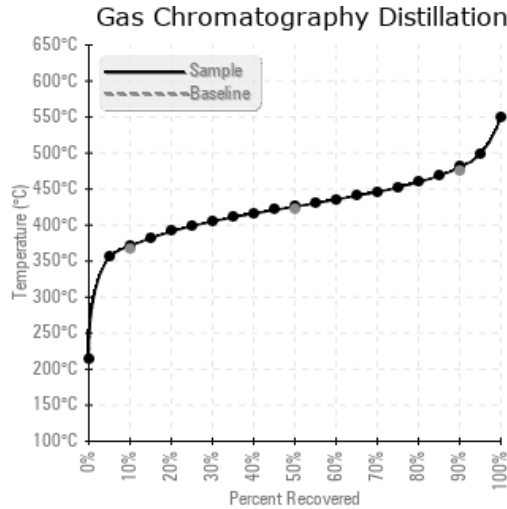
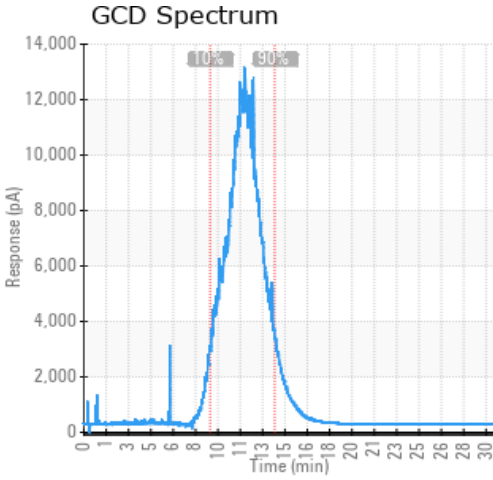
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/24/24	04/02/24	180.0m	WEST FRAC	428 / 220	8	30.6	0.01	0.056	699 / 371	798 / 426	896 / 480	1.44
05/14/19	05/24/19	28.0m	TCS INLET VENT	396 / 202	5.7	30.7	0.065	0.175	690 / 366	781 / 416	869 / 465	0.00
01/16/19	01/25/19	28.0m	TCS INLET VENT	394 / 201	43.9	31.0	0.06	0.072	669 / 354	771 / 411	870 / 465	3.46
10/30/18	11/06/18	25.0m		410 / 210	23.1	31.0	0.20	0.470	697 / 370	800 / 427	898 / 481	1.09
05/04/18	05/11/18	0.0m		403 / 206	17.3	30.8	0.045	0.072	654 / 346	778 / 415	910 / 488	6.99
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	
03/24/24	21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	151	0	
05/14/19	55	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	170	0
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	0	169	0
10/30/18	112	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	226	0
05/04/18	54	0	0	0	0	1	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	195	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

05/14/19	Re-Sample in 1 months. Pentane Insolubles increased which might indicate a poorly drawn sample. (GCD) 90% distillation might be due to poorly drawn sample. Silicon at 8 ppm is double over last sample. Look closely at next sample to see if silicon rises again which could indicate a process leak. (GCD) 90% Distillation Point is marginally low.
01/16/19	Sample appears normal. Re-sample at normal interval.
10/30/18	Pentane insolubles rose a bit. Could be due to sample procedure. Silicon dropped significantly. Re-sample in 3 months. Pentane Insolubles levels are abnormally high.
05/04/18	Resample at normal interval. (GCD) 90% Distillation Point is marginally high. Possibility that not enough oil is purged from sample point. (GCD) 90% Distillation Point is marginally high.

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