

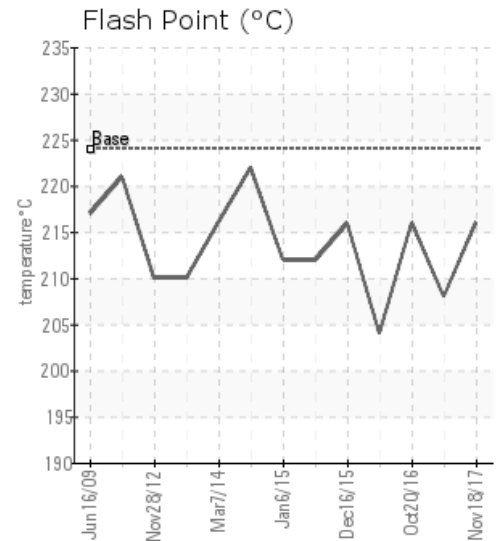
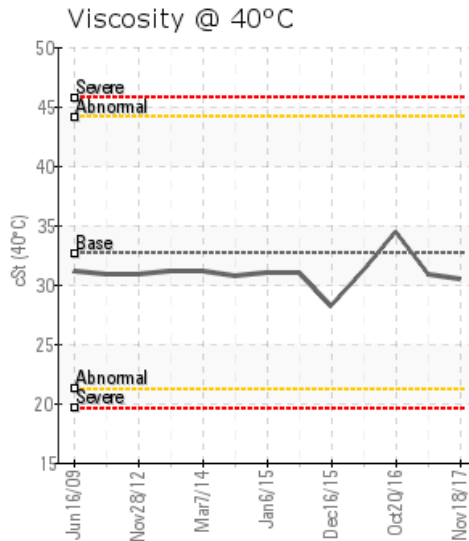
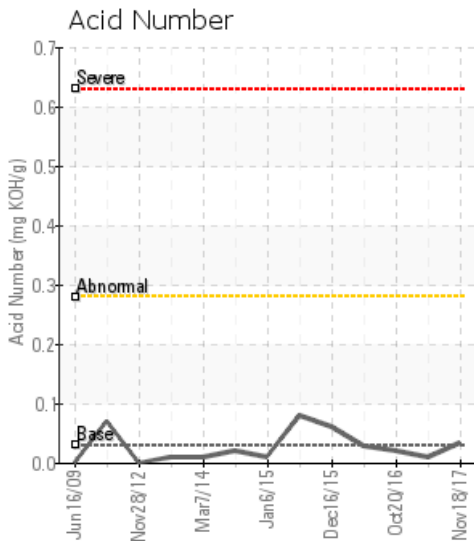
PHASE 2

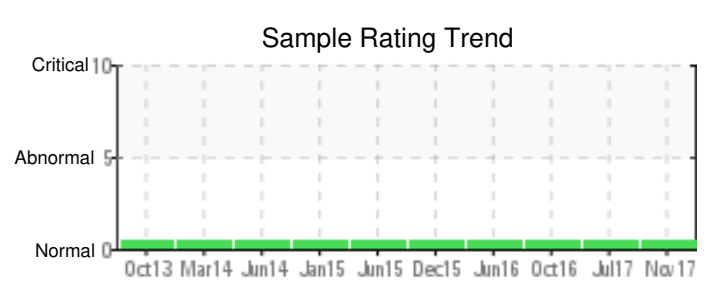
Customer: PTRHTF10092	System Information	Sample Information
REC GROUP 119410 RICK JONES WAY BUTTE (SILVER BOW), MT 59750 USA Attn: Bill Telling Tel: (406)496-9929 E-Mail: bill.telling@recsilicon.com	System Volume: 41640 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: EXOTHERM	Lab No: 02185629 Analyst: Ron LeBlanc Sample Date: 11/18/17 Received Date: 12/04/17 Completed: 12/06/17 To discuss this report contact Ron LeBlanc at (541)967-6499

Recommendation: Sample appears normal. Resample at normal interval.

Comments:

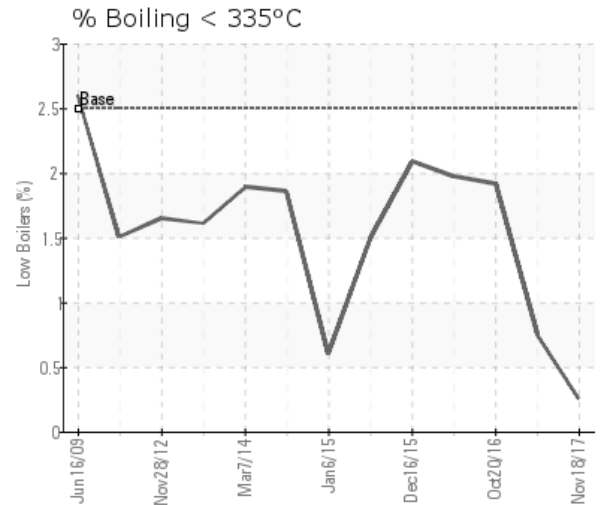
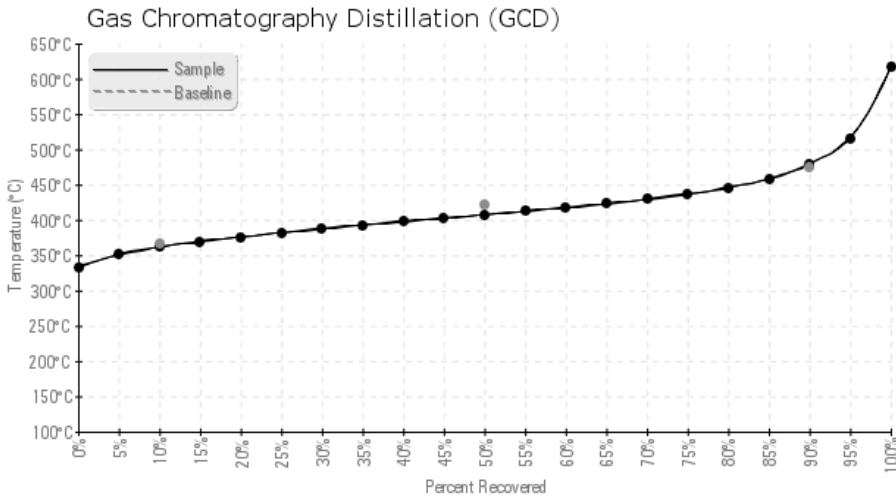
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/18/17	12/04/17	13y		421 / 216	7.7	30.5	0.033	0.039	683 / 361	765 / 407	894 / 479	0.26
07/19/17	08/03/17	13y	PH2 HOT OIL	406 / 208	15.7	30.9	0.01	0.015	703 / 373	789 / 421	884 / 473	0.75
10/20/16	11/03/16	13y	HOT OIL RETURN	421 / 216	5.1	34.5	0.02	0.044	695 / 368	798 / 426	897 / 480	1.92
06/20/16	06/29/16	12y	UPSTRM EXPNSN DRUM	399 / 204	17.2	31.2	0.029	0.040	688 / 364	787 / 419	899 / 482	1.98
12/16/15	12/30/15	12y	UPSTREAM EXPAN DRUM	421 / 216	19.6	28.2	0.06	0.046	690 / 366	787 / 420	879 / 471	2.09
06/11/15	06/26/15	12y	UPSTREAM EXPANSION D	414 / 212	6.3	31.0	0.08	0.047	696 / 369	796 / 424	898 / 481	1.49
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
11/18/17	3	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	9	0
07/19/17	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9	0
10/20/16	2	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	9	0
06/20/16	4	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9	0
12/16/15	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9	0
06/11/15	3	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	10	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

07/19/17	Sample Normal. No issues detected.
10/20/16	Sample appears normal. Sample in 6 months.
06/20/16	Sample appears normal. Resample in 6 months.
12/16/15	Sample is normal
06/11/15	Sample appears normal. Resample at normal interval.

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