

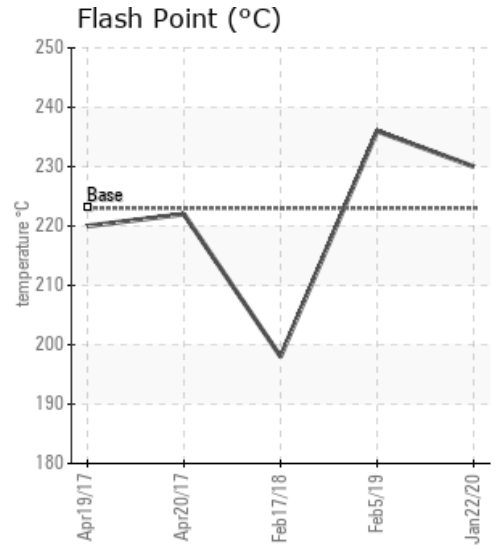
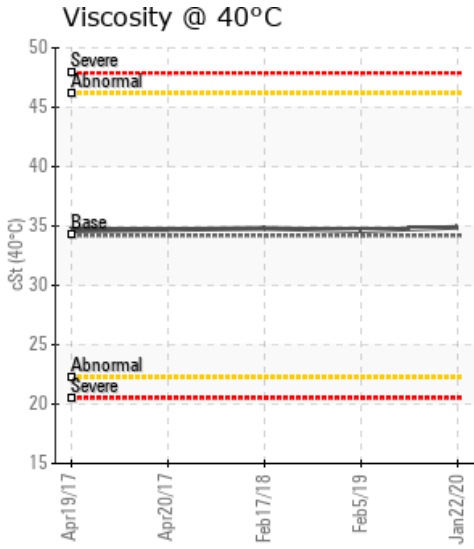
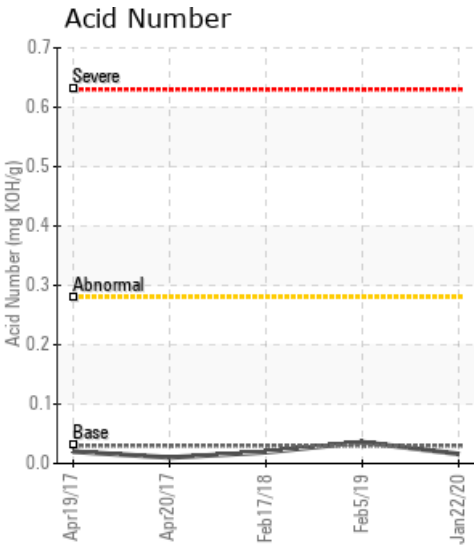
## [STEEL REEF ALAMEDA PLANT / 16-08-4-3W2] HEAT MEDIUM

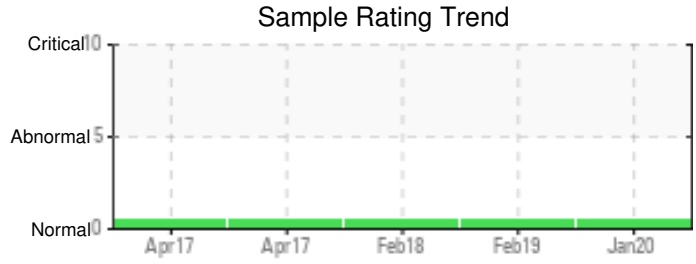
Customer: PTRHTF20185	System Information	Sample Information
STEEL REEF 16-08-04-03 W2 ALAMEDA, SK Canada Attn: Luke Brady Tel: (306)575-8626 E-Mail: lucas.brady@steelreef.ca	System Volume: 35000 ltr Bulk Operating Temp: 414F / 212C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: RUSHTON	Lab No: 02334960 Analyst: Kevin McDermott Sample Date: 01/22/20 Received Date: 01/30/20 Completed: 02/10/20 Kevin McDermott kevin.mcdermott@petrocanadalsp.com

Recommendation: Fluid condition remains excellent, with almost no change from the previous sample a year ago. Continue to submit annual samples to proactively monitor fluid condition.

Comments:

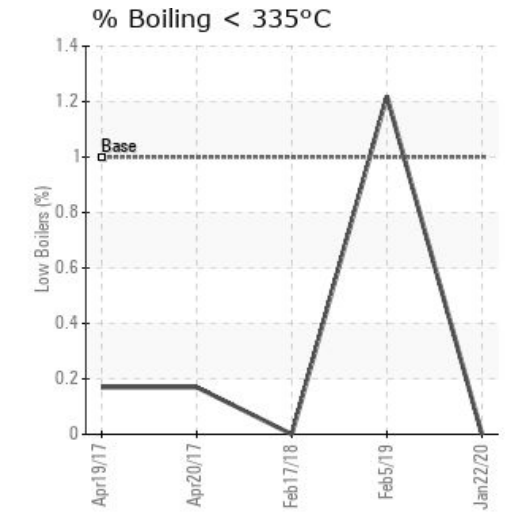
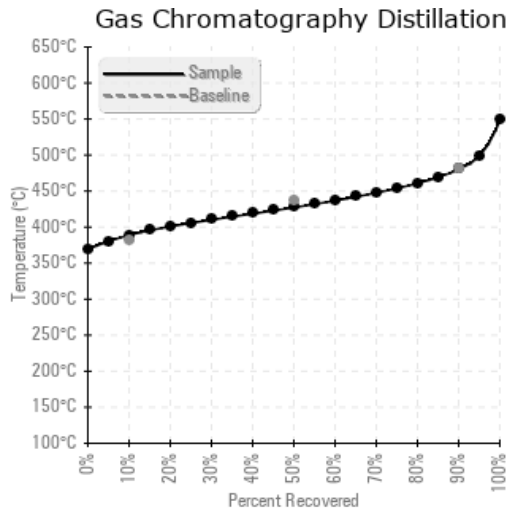
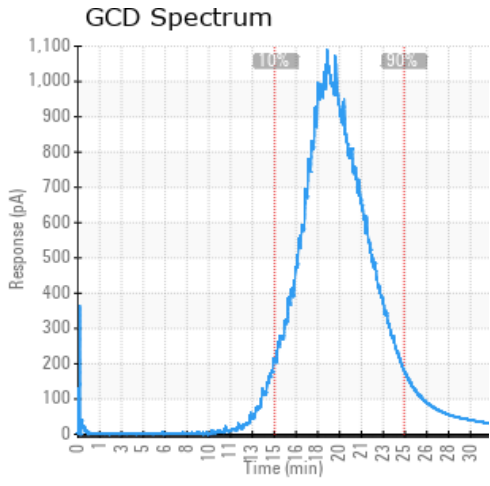
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/22/20	01/30/20	3y	RETURN	446 / 230	0.00	34.9	0.016	0.051	732 / 389	801 / 427	897 / 480	0.00
02/05/19	02/12/19	3y		457 / 236	3.1	34.6	0.036	0.010	695 / 369	785 / 419	889 / 476	1.22
02/17/18	01/23/18	17y		388 / 198	0.00	34.8	0.019	0.036	725 / 385	790 / 421	886 / 474	0.00
04/20/17	04/25/17	8y	OUTLET OF HM FILTER	432 / 222	19.6	34.7	0.01	0.039	721 / 383	811 / 433	916 / 491	0.17
04/19/17	04/25/17	8y	INLET TO FILTER	428 / 220	88.4	34.6	0.02	0.048	720 / 382	810 / 432	916 / 491	0.17
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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	
01/22/20	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
02/05/19	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02/17/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/20/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/19/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Baseline Data</b>			0	0						0		0	0					0				0			

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



**Historical Comments**

02/05/19	Fluid continues to be in very good condition, essentially no change since the previous sample Feb 2018. Suggest continue to submit annual samples to monitor fluid condition.
02/17/18	Fluid condition remains excellent. Suggest submitting samples of used fluid annually to proactively monitor fluid condition. Sooner if fluid gets exposed to severe conditions.
04/20/17	Fluid is in very good condition. Suggest annual sampling to proactively monitor the fluid condition - sooner if the fluid gets exposed to severe conditions.
04/19/17	Fluid is in very good condition. Suggest annual sampling to proactively monitor the fluid condition - sooner if the fluid gets exposed to severe conditions.

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