

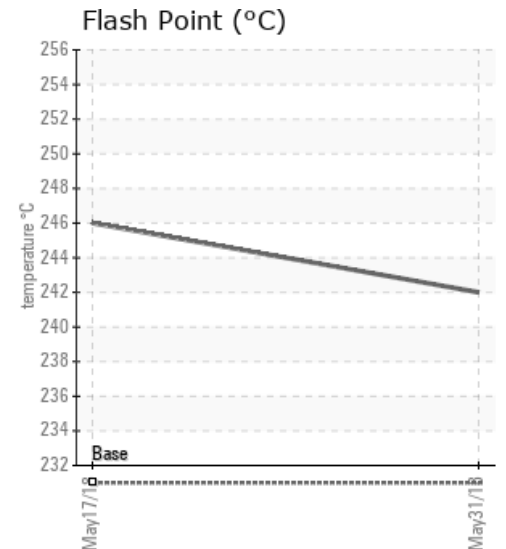
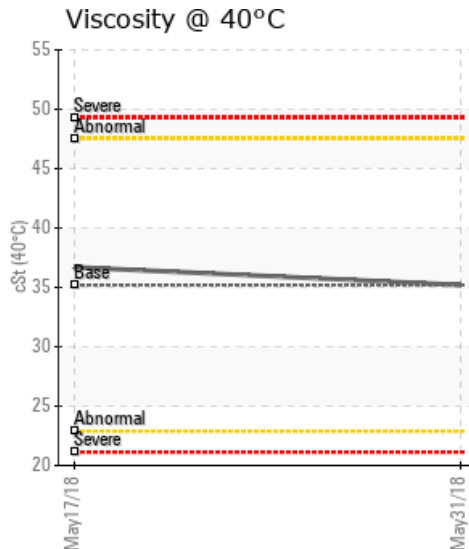
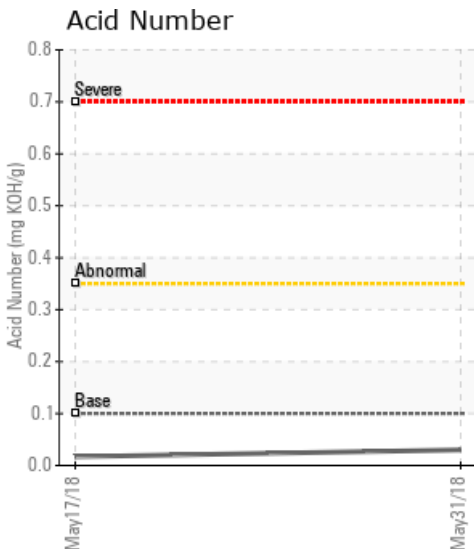
[SUNCOR MACKAY RIVER] WELL 750

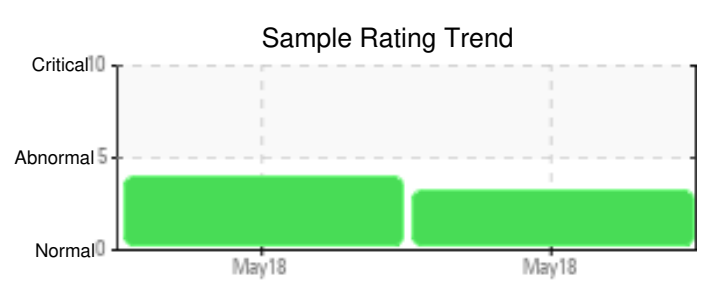
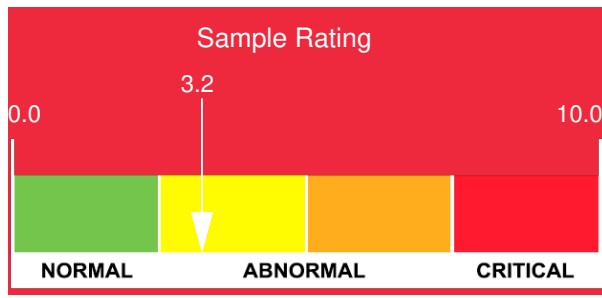
Customer: PTRHTF20196	System Information	Sample Information
SUNCOR ENERGY MACKAY RIVER PROJECT DOCK M FORT MCMURRAY, AB T9H 4W1 Canada Attn: Patrick Spargo Tel: (780)792-2977	System Volume: 13000 ltr Bulk Operating Temp: 518F / 270C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: HOCS	Lab No: 02221713 Analyst: Benjamin Latorre Sample Date: 05/31/18 Received Date: 06/12/18 Completed: 09/04/18 To discuss this report contact Benjamin Latorre at (587)275-0499

Recommendation: 1. Locate and correct source of recurring water contamination. 2. Check low lying areas of the system, such as the expansion tank, where water can be trapped. 3. Remove water vapor by venting and addition of nitrogen to the expansion tank head space. Resample initially at 700 hours after correcting source/removal of water contamination. If it has stopped, resample oil annually.

Comments: Wear metals are low/normal. Water contamination levels are severely high. Acid Number and Pentane Insolubles are low/normal.

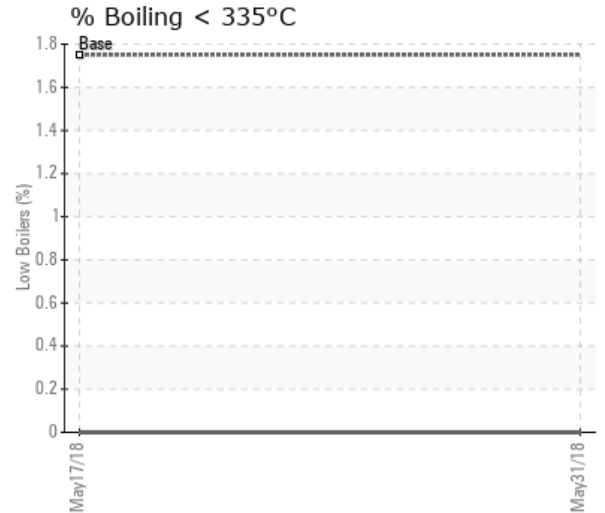
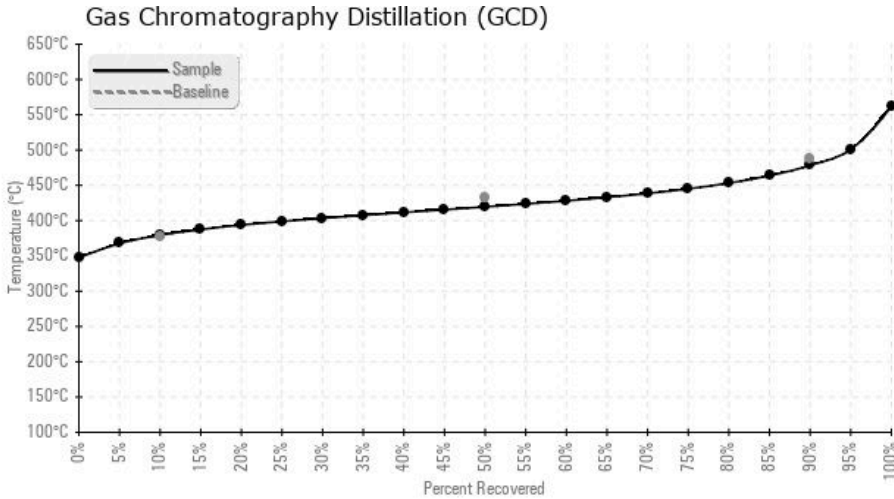
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/31/18	06/12/18	0d	WELL RETURN #2	468 / 242	2006.6	35.2	0.03	0.053	715 / 379	787 / 420	893 / 478	0.00
05/17/18	05/28/18	2d	WELL RETURN #2	475 / 246	6027.8	36.7	0.017	0.041	726 / 386	805 / 429	905 / 485	0.00
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
05/31/18	5	0	0	0	0	0	0	0	0	0	8	0	1	0	0	0	0	0	1	1	2	0	106	0
05/17/18	8	0	0	0	0	0	0	0	0	0	7	1	1	0	1	0	0	0	2	0	8	0	293	1
Baseline Data			0	0						0			0	0					0				280	

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



Historical Comments	
05/17/18	Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high.

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