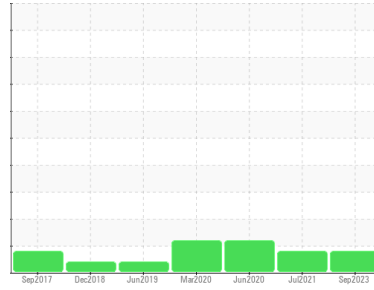




PROBLEM SUMMARY

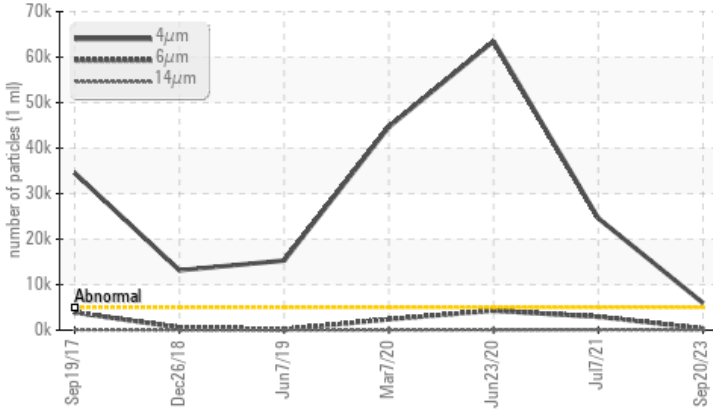
Sample Rating Trend



Machine Id
Bow Thruster Wartsila FT 175 BT (S/N PAAF589818)
 Component
Bow Thruster
 Fluid
PETRO CANADA ENDURATEX EP 100 (500 LTR)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status		ATTENTION	ABNORMAL	SEVERE
Particles >4µm	ASTM D7647 >5000	▲ 5949	▲ 24589	● 63496
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 20/16/12	▲ 22/19/14	● 23/19/13

Customer Id: MARTHABLAC
 Sample No.: WC0783691
 Lab Number: 02585847
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.

HISTORICAL DIAGNOSIS

07 Jul 2021 Diag: Wes Davis

ISO



We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



23 Jun 2020 Diag: Kevin Marson

ISO



Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



07 Mar 2020 Diag: Kevin Marson

ISO



Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

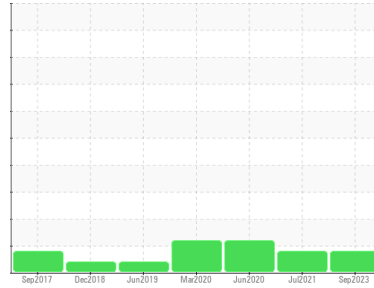
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
Bow Thruster Wartsila FT 175 BT (S/N PAAF589818)

Component
Bow Thruster

Fluid
PETRO CANADA ENDURATEX EP 100 (500 LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0783691	WC	WC
Sample Date	Client Info	20 Sep 2023	07 Jul 2021	23 Jun 2020
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ATTENTION	ABNORMAL	SEVERE

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m) >90	8	1	2
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >10	0	0	<1
Lead	ppm	ASTM D5185(m) >20	0	0	0
Copper	ppm	ASTM D5185(m) >20	<1	<1	<1
Tin	ppm	ASTM D5185(m) >15	0	0	0
Antimony	ppm	ASTM D5185(m)	0	0	<1
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m) 50	56	63	64
Barium	ppm	ASTM D5185(m) 0	<1	0	<1
Molybdenum	ppm	ASTM D5185(m) 0	0	<1	0
Manganese	ppm	ASTM D5185(m) 0	0	0	0
Magnesium	ppm	ASTM D5185(m) 0	<1	<1	<1
Calcium	ppm	ASTM D5185(m) 0	3	2	1
Phosphorus	ppm	ASTM D5185(m) 270	244	268	255
Zinc	ppm	ASTM D5185(m) 0	9	5	5
Sulfur	ppm	ASTM D5185(m) 4500	3994	4488	4648
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >7	5	5	8
Sodium	ppm	ASTM D5185(m)	2	<1	<1
Potassium	ppm	ASTM D5185(m) >20	0	<1	<1

FLUID CLEANLINESS

method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>5000	▲ 5949	▲ 24589	● 63496
Particles >6µm	ASTM D7647	>1300	342	▲ 2946	▲ 4284
Particles >14µm	ASTM D7647	>160	26	84	52
Particles >21µm	ASTM D7647	>40	9	18	13
Particles >38µm	ASTM D7647	>10	1	1	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 20/16/12	▲ 22/19/14	● 23/19/13

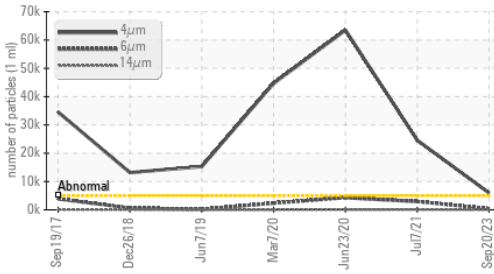
FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974* 0.4	0.36	0.26	0.37

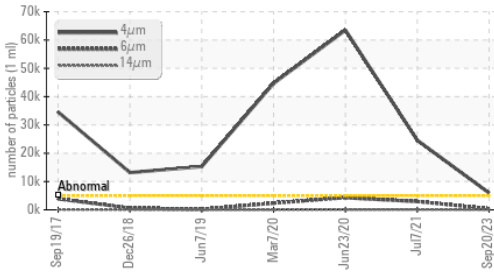


OIL ANALYSIS REPORT

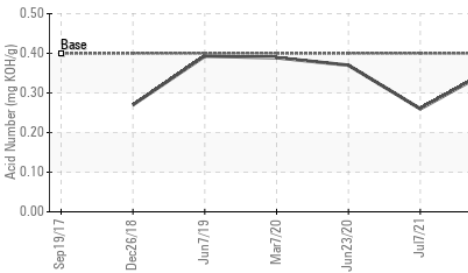
▲ Particle Trend



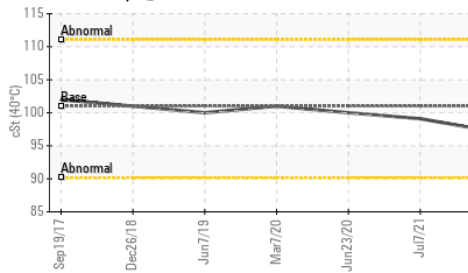
▲ Particle Trend



Acid Number



Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

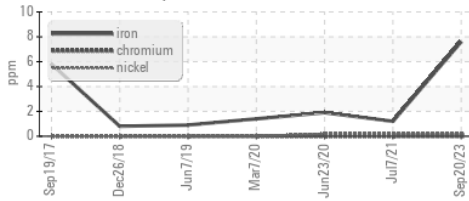
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	101	97.2	99.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
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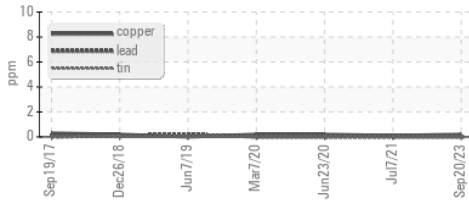


GRAPHS

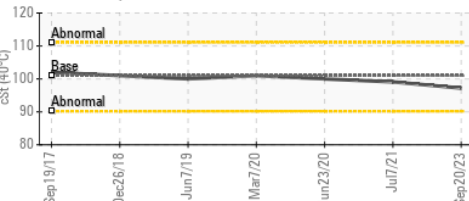
Ferrous Alloys



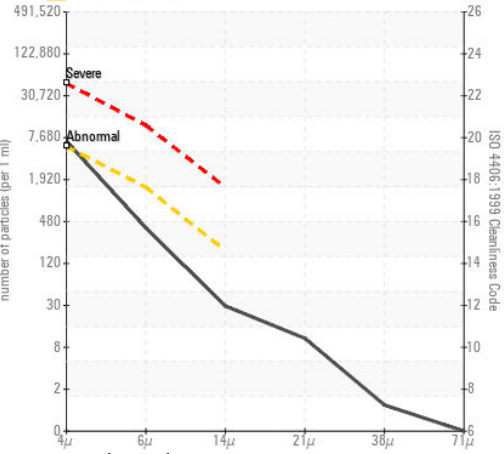
Non-ferrous Metals



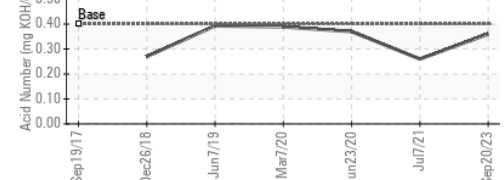
Viscosity @ 40°C



▲ Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0783691
Lab Number : 02585847
Unique Number : 5654913
Test Package : MAR 2

Canadian Coast Guard
 CCGS Martha L. Black, 101 Boul. Champlain, Depot 18
 Quebec, QC
 CA G1K 7Y7
 Contact: Chief Engineer
 marthalblackce@ccgs-ngcc.gc.ca
 T: (418)563-1735
 F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.