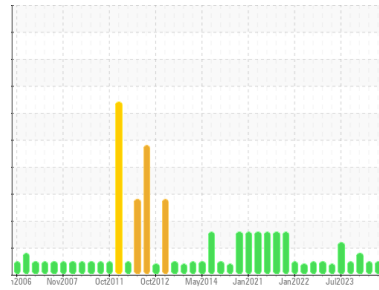




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
AH2711 - Wartsila Bowthruster
 Component
Bow Thruster
 Fluid
PETRO CANADA ENDURATEX EP 100 (185 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

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	WC0855640	WC0855646	WC0753472
Sample Date	Client Info	29 Mar 2024	28 Jan 2024	28 Nov 2023
Machine Age	hrs	2584	2499	3744
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	NORMAL	ATTENTION

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >90	1	2	2
Chromium	ppm ASTM D5185(m) >10	0	0	0
Nickel	ppm ASTM D5185(m) >10	0	0	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	0	<1
Aluminum	ppm ASTM D5185(m) >10	0	<1	0
Lead	ppm ASTM D5185(m) >20	0	0	<1
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	0
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	63	60	61
Barium	ppm ASTM D5185(m) 0	0	0	<1
Molybdenum	ppm ASTM D5185(m) 0	0	0	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	1	2	1
Phosphorus	ppm ASTM D5185(m) 270	241	246	242
Zinc	ppm ASTM D5185(m) 0	7	6	7
Sulfur	ppm ASTM D5185(m) 4500	3978	4316	4144
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

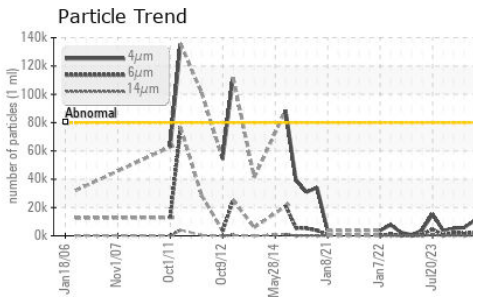
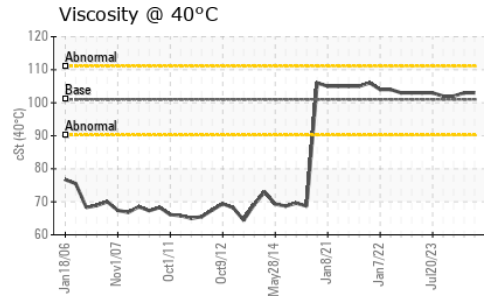
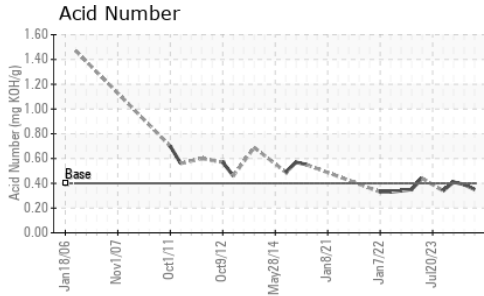
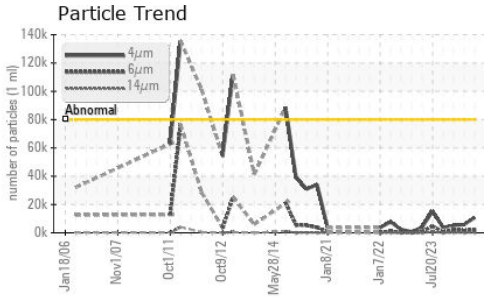
method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >7	<1	2	3
Sodium	ppm ASTM D5185(m)	3	2	3
Potassium	ppm ASTM D5185(m) >20	0	<1	0

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >80000	10789	5760	5268
Particles >6µm	ASTM D7647 >20000	1974	1620	2031
Particles >14µm	ASTM D7647 >160	95	132	222
Particles >21µm	ASTM D7647 >40	20	36	44
Particles >38µm	ASTM D7647 >10	1	7	4
Particles >71µm	ASTM D7647 >3	0	4	2
Oil Cleanliness	ISO 4406 (c) >23/21/14	21/18/14	20/18/14	20/18/15



OIL ANALYSIS REPORT

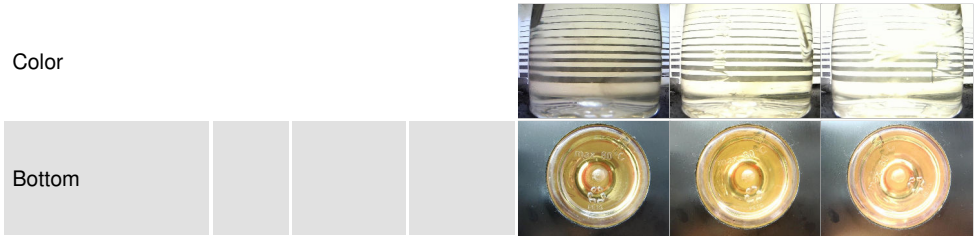


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.4	0.35	0.39	0.41

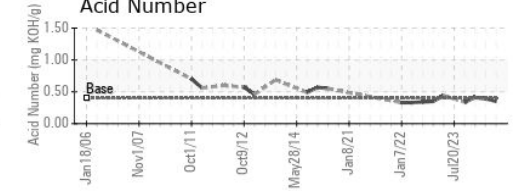
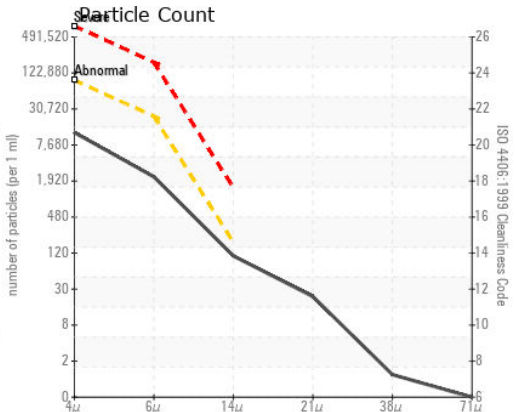
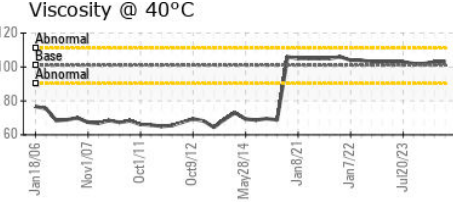
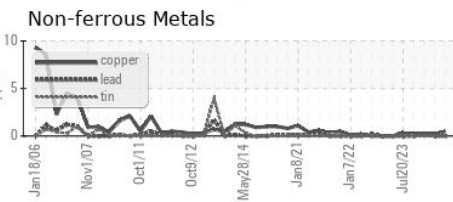
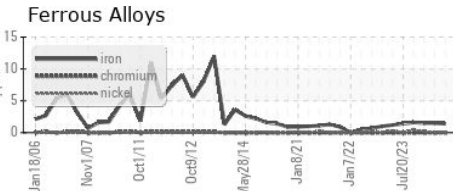
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	101	103	103	102

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0855640
Lab Number : 02628297
Unique Number : 5761429
Test Package : MAR 2

CANADIAN COAST GUARD/DFO
 CCGS ANN HARVEY, P.O. BOX 5667
 ST. JOHN'S, NL
 CA A1C 5X1
 Contact: Chief Engineer
 annharveyce@ccgs-ngcc.gc.ca

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.

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 F: (709)772-3652