



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

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

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0900577</b>	WC0855639	WC0855640
Sample Date		Client Info		<b>16 May 2024</b>	08 Apr 2024	29 Mar 2024
Machine Age	hrs	Client Info		<b>2886</b>	2588	2584
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>387</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>Not Chngd</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	<b>2</b>	2	1
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Lead	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

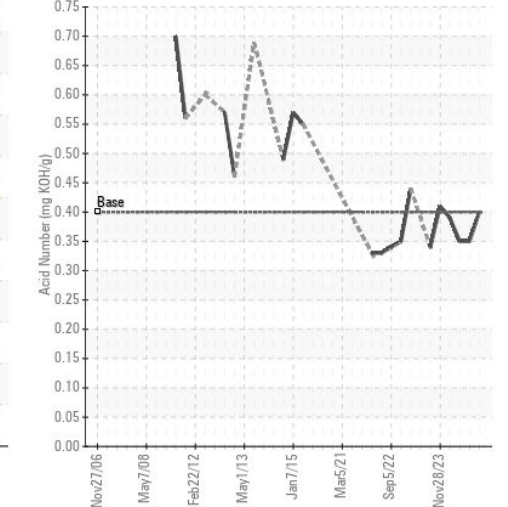
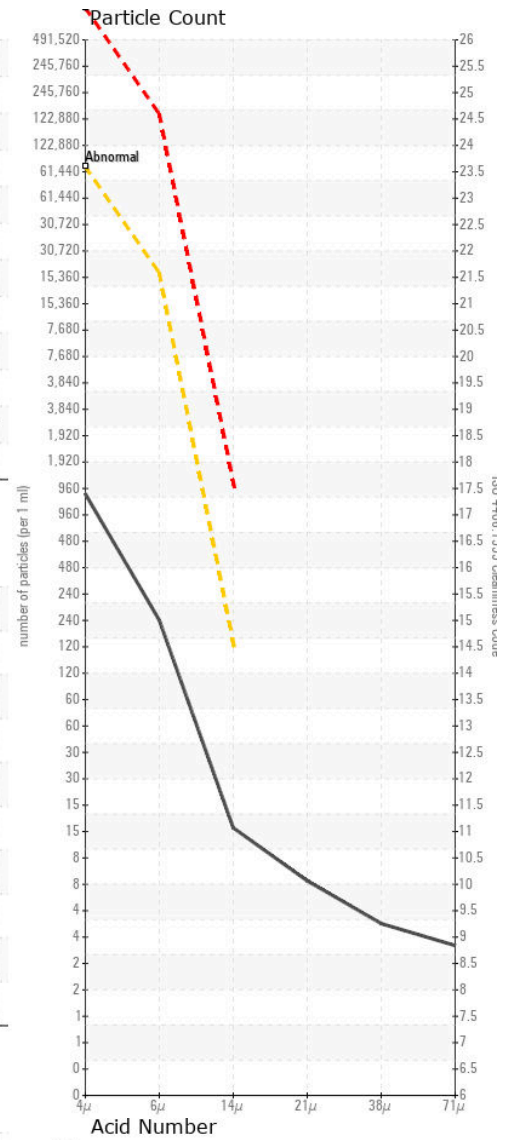
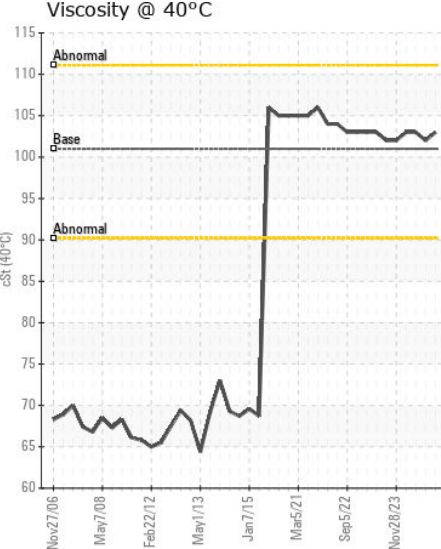
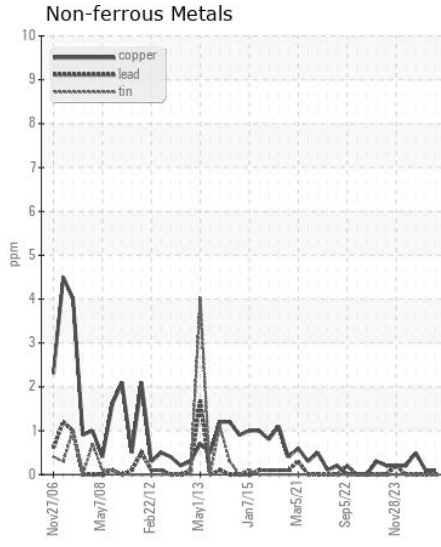
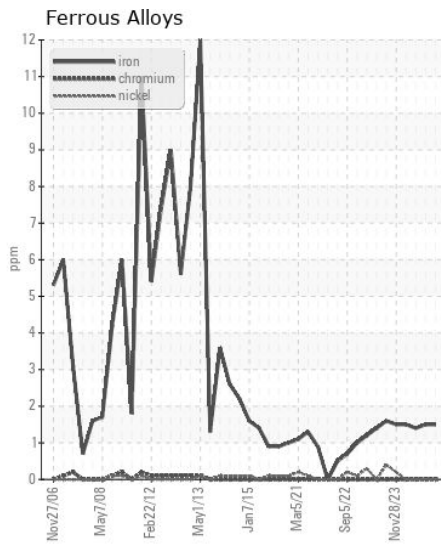
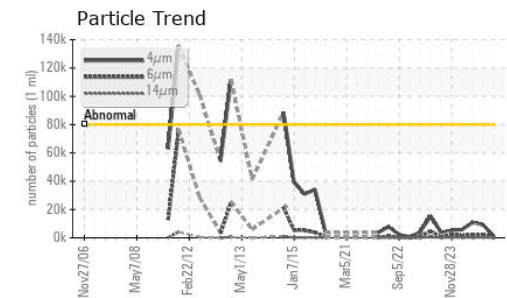
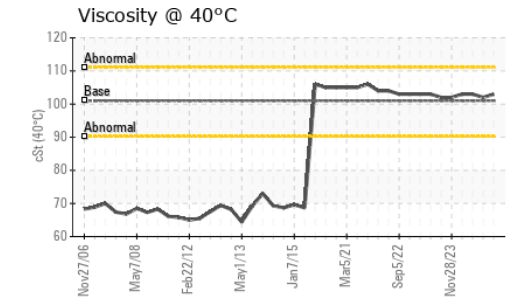
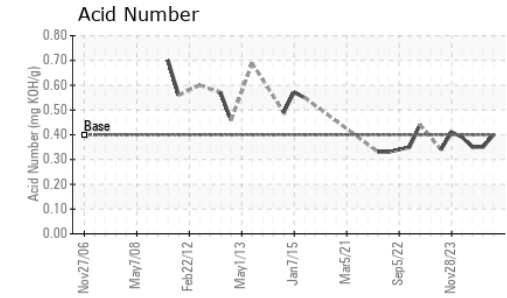
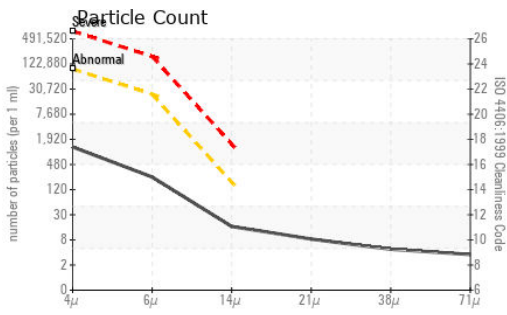
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>7	<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>80000	<b>1107</b>	9133	10789
Particles >6µm		ASTM D7647	>20000	<b>212</b>	2254	1974
Particles >14µm		ASTM D7647	>160	<b>14</b>	214	95
Particles >21µm		ASTM D7647	>40	<b>7</b>	56	20
Particles >38µm		ASTM D7647	>10	<b>4</b>	6	1
Particles >71µm		ASTM D7647	>3	<b>3</b>	3	0
Oil Cleanliness		ISO 4406 (c)	>23/21/14	<b>17/15/11</b>	20/18/15	21/18/14
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)		<b>3</b>	3	3
Boron	ppm	ASTM D5185(m)	50	<b>60</b>	62	63
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>1</b>	1	<1
Calcium	ppm	ASTM D5185(m)	0	<b>1</b>	2	1
Phosphorus	ppm	ASTM D5185(m)	270	<b>250</b>	241	241
Zinc	ppm	ASTM D5185(m)	0	<b>8</b>	7	7
Sulfur	ppm	ASTM D5185(m)	4500	<b>4006</b>	3975	3978
Acid Number (AN)	mg KOH/g	ASTM D974*	0.4	<b>0.40</b>	0.35	0.35
Visc @ 40°C	cSt	ASTM D7279(m)	101	<b>103</b>	102	103



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0900577  
**Lab Number** : 02639990  
**Unique Number** : 5789152  
**Test Package** : MAR 2 ( Additional Tests: TAN Man )

**Received** : 05 Jun 2024  
**Tested** : 06 Jun 2024  
**Diagnosed** : 06 Jun 2024 - Wes Davis

**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.

T:  
 F: (709)772-3652