



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**Wartsila Wichman Main Engine (S/N 6067)**  
 Component  
**Main Engine**  
 Fluid  
**MOBIL MOBILGARD 312 (1700 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0861280</b>	WC	WC0738838
Sample Date		Client Info		<b>20 May 2024</b>	13 Oct 2023	05 Sep 2022
Machine Age	hrs	Client Info		<b>128689</b>	127606	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>1252</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>75	<b>5</b>	12	5
Chromium	ppm	ASTM D5185(m)	>8	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	<b>1</b>	1	1
Lead	ppm	ASTM D5185(m)	>18	<b>2</b>	3	<1
Copper	ppm	ASTM D5185(m)	>80	<b>1</b>	6	<1
Tin	ppm	ASTM D5185(m)	>14	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## CONTAMINATION

There is no indication of any contamination in the oil.

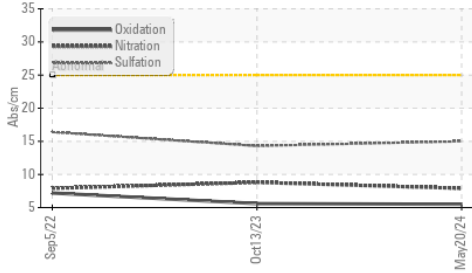
Silicon	ppm	ASTM D5185(m)	>20	<b>4</b>	4	4
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	0.0	NEG
Soot %	%	ASTM D7844*		<b>0</b>	0	0
Nitration	Abs/cm	ASTM D7624*	>20	<b>7.9</b>	8.8	7.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>15.0</b>	14.3	16.4
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	▲ .2%	NEG

## FLUID CONDITION

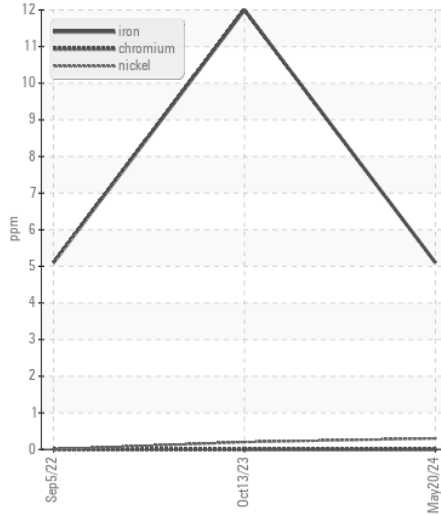
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)	>75	<b>&lt;1</b>	4	2
Boron	ppm	ASTM D5185(m)		<b>2</b>	2	5
Barium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Molybdenum	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	2
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)		<b>14</b>	17	19
Calcium	ppm	ASTM D5185(m)		<b>5886</b>	5995	5594
Phosphorus	ppm	ASTM D5185(m)		<b>294</b>	370	439
Zinc	ppm	ASTM D5185(m)		<b>413</b>	459	478
Sulfur	ppm	ASTM D5185(m)		<b>6680</b>	8233	7610
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>5.5</b>	5.6	7.2
Base Number (BN)	mg KOH/g	ASTM D2896*	15	<b>15.34</b>	15.34	14.48
Visc @ 100°C	cSt	ASTM D7279(m)	12	<b>12.3</b>	12.0	11.7

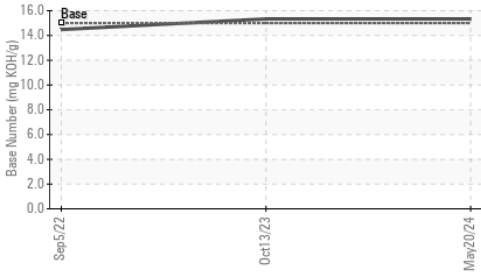
**FT-IR (Direct Trend)**



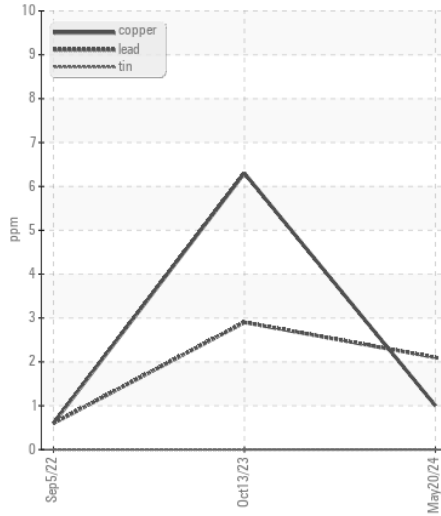
**Ferrous Alloys**



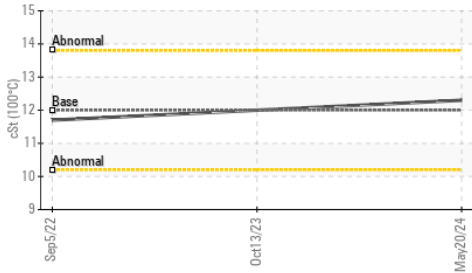
**Base Number**



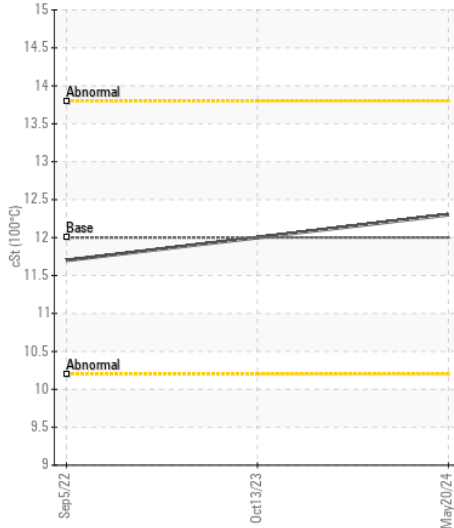
**Non-ferrous Metals**



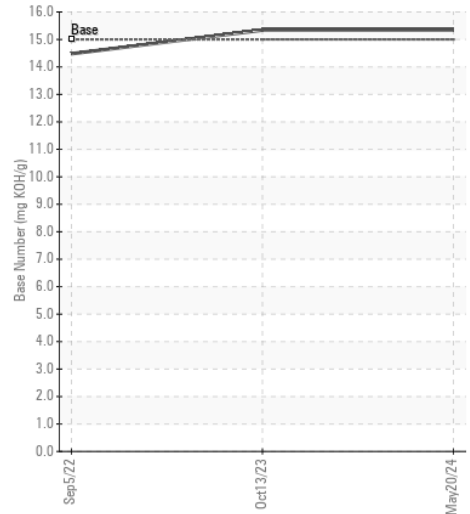
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0861280 **Received** : 21 Jun 2024  
**Lab Number** : 02643320 **Tested** : 21 Jun 2024  
**Unique Number** : 5800859 **Diagnosed** : 21 Jun 2024 - Wes Davis  
**Test Package** : MAR 2

**CANSHIP UGLAND - SVANOY**  
 1315 TOPSAIL ROAD, PO BOX 8040 STN A  
 ST JOHNS, NL  
 CA AIB 3M7  
 Contact: Guillaume Bernier  
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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.