



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area  
**SEAWARD EXPLORER**

Machine Id  
**Explorer**

Component  
**3 Genset**

Fluid  
**MOBIL DELVAC 1640 (--- GAL)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0859377</b>	WC0818107	WC0818088
Sample Date		Client Info		<b>07 Feb 2024</b>	30 Oct 2023	25 Jul 2023
Machine Age	hrs	Client Info		<b>21912</b>	21101	19830
Oil Age	hrs	Client Info		<b>38</b>	504	19590
Filter Age	hrs	Client Info		<b>38</b>	504	19590
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>12</b>	11	7
Chromium	ppm	ASTM D5185m	>4	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	<1	0
Lead	ppm	ASTM D5185m	>17	<b>2</b>	<1	0
Copper	ppm	ASTM D5185m	>70	<b>2</b>	0	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<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

Elemental level of silicon (Si) above normal indicating ingress of seal material.

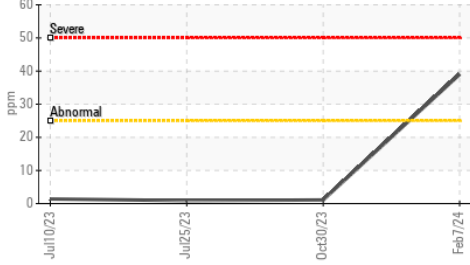
Silicon	ppm	ASTM D5185m	>25	<b>▲ 39</b>	1	<1
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.4</b>	9.8	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.2</b>	18.2	14.8
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	>0.1	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

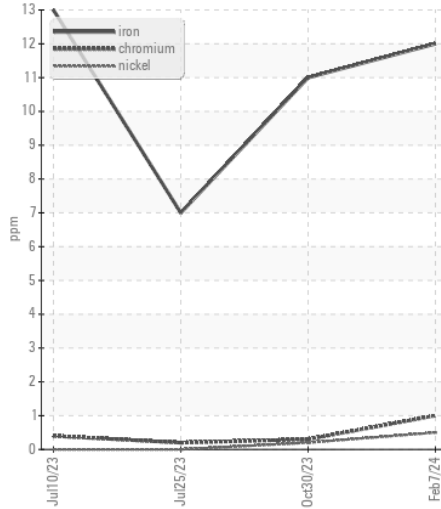
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>4</b>	<1	2
Boron	ppm	ASTM D5185m		<b>2</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>3</b>	3	12
Manganese	ppm	ASTM D5185m		<b>1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>273</b>	1362	1487
Calcium	ppm	ASTM D5185m		<b>3463</b>	1198	867
Phosphorus	ppm	ASTM D5185m		<b>915</b>	715	737
Zinc	ppm	ASTM D5185m		<b>1076</b>	933	910
Sulfur	ppm	ASTM D5185m		<b>5016</b>	2453	2875
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.7</b>	14.7	8.0
Base Number (BN)	mg KOH/g	ASTM D2896	12	<b>12.3</b>	7.6	7.7
Visc @ 100°C	cSt	ASTM D445	14.7	<b>13.1</b>	11.6	10.7

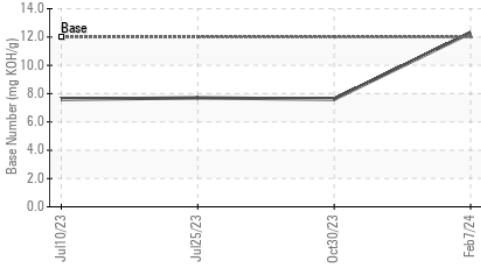
▲ Silicon (ppm)



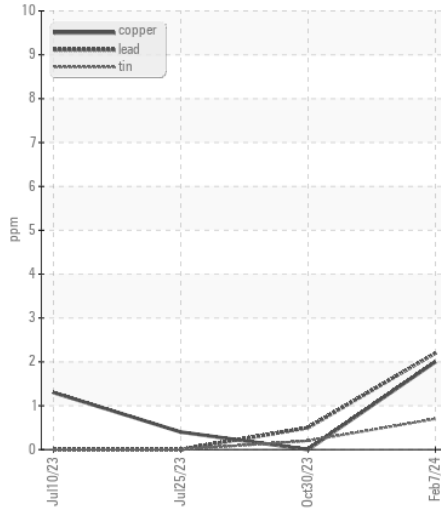
Ferrous Alloys



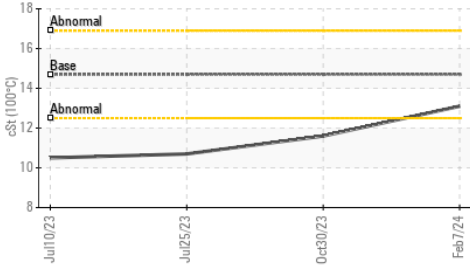
Base Number



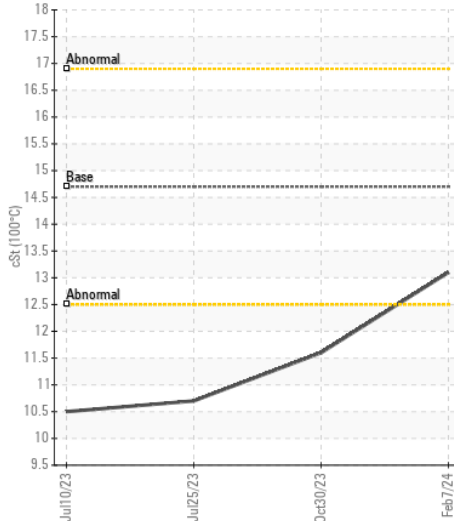
Non-ferrous Metals



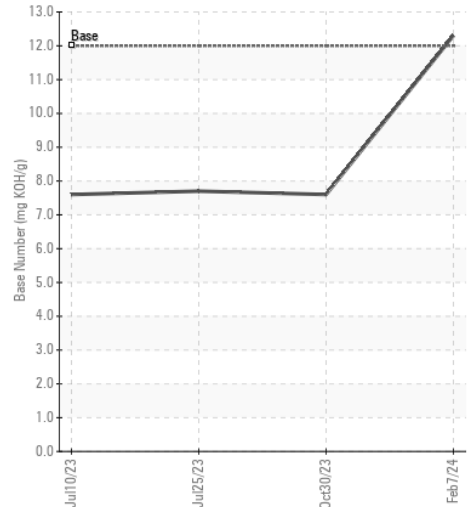
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0859377

Lab Number : 06104055

Unique Number : 10902285

Test Package : MAR 2

Received : 29 Feb 2024

Tested : 29 Feb 2024

Diagnosed : 04 Mar 2024 - Jonathan Hester

SEAWARD SERVICES

222 PEARL ST

NEW ALBANY, IN

US 47150

Contact: PETER CHARBONNET

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T:

F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)