



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**NORTHERN LIGHTS 4**

Component  
**Port Genset**

Fluid  
**KIRKLAND 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0764165</b>	WC0764164	WC0626551
Sample Date		Client Info		<b>10 Jan 2024</b>	01 Dec 2023	18 Oct 2023
Machine Age	hrs	Client Info		<b>20489</b>	20201	19950
Oil Age	hrs	Client Info		<b>288</b>	251	239
Filter Age	hrs	Client Info		<b>288</b>	251	239
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>4</b>	13	1
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	▲ 12	1
Lead	ppm	ASTM D5185m	>17	<b>&lt;1</b>	1	0
Copper	ppm	ASTM D5185m	>70	<b>&lt;1</b>	<1	<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**

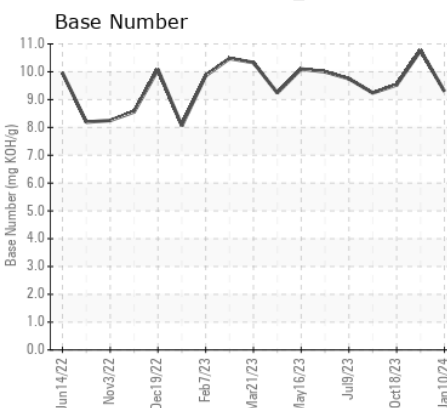
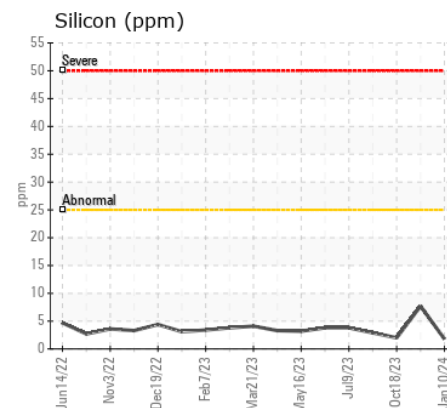
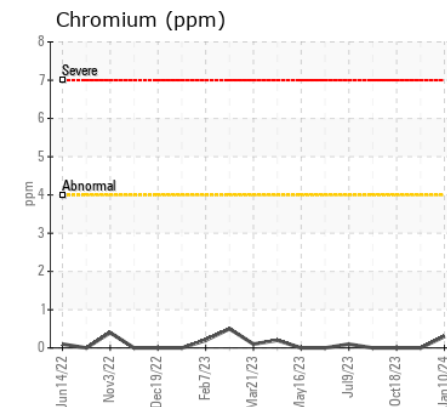
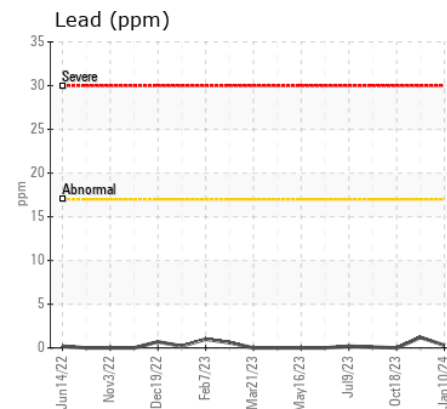
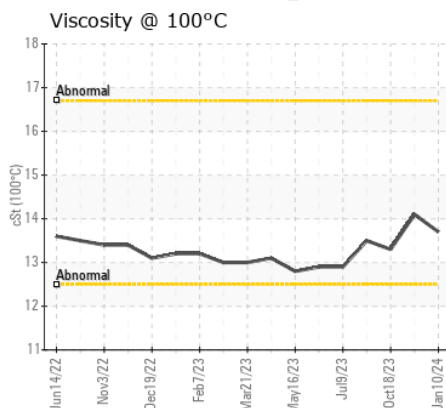
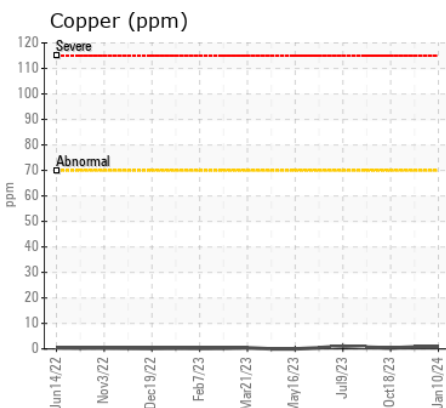
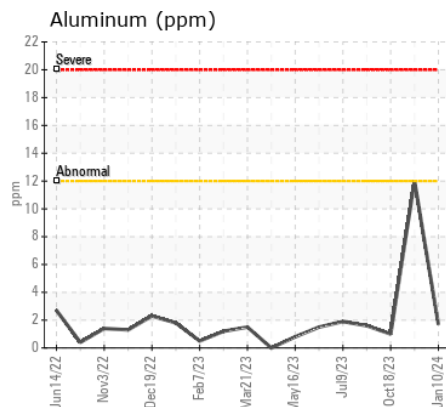
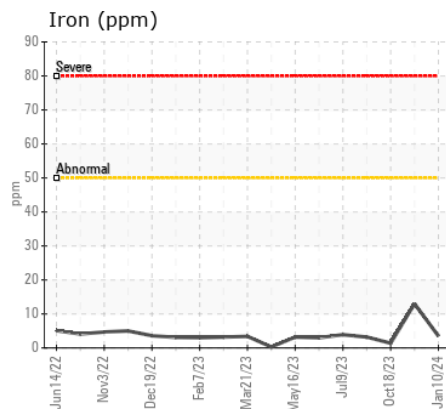
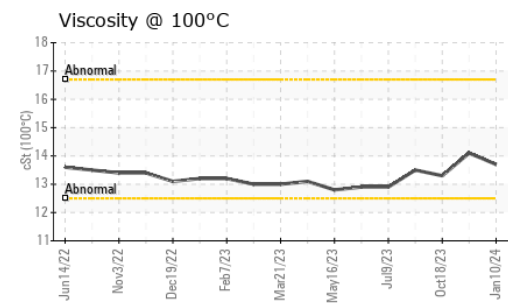
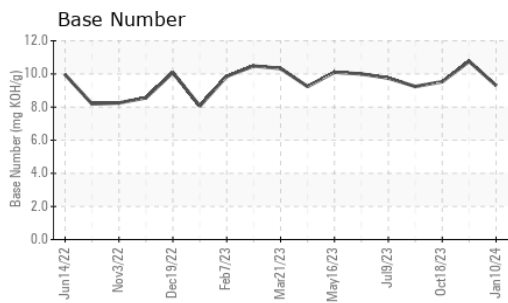
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>2</b>	8	2
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	2
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>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.4</b>	3.4	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.2</b>	15.7	17.8
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>0</b>	2	3
Boron	ppm	ASTM D5185m		<b>0</b>	491	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>58</b>	47	55
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>908</b>	28	903
Calcium	ppm	ASTM D5185m		<b>1040</b>	3711	1042
Phosphorus	ppm	ASTM D5185m		<b>928</b>	1065	1092
Zinc	ppm	ASTM D5185m		<b>1190</b>	1208	1206
Sulfur	ppm	ASTM D5185m		<b>3243</b>	3989	3063
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.4</b>	7.1	14.0
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.30</b>	10.76	9.53
Visc @ 100°C	cSt	ASTM D445		<b>13.7</b>	14.1	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0764165 **Received** : 30 Jan 2024  
**Lab Number** : 06074148 **Diagnosed** : 31 Jan 2024  
**Unique Number** : 10856239 **Diagnostician** : Jonathan Hester  
**Test Package** : MOB 2

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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)