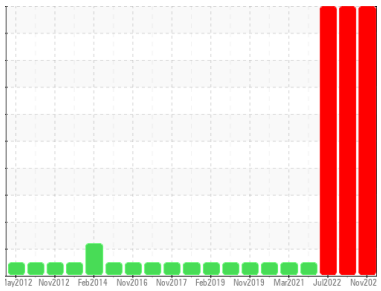
# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
## ALSTOM R123
Component
**Gearbox**
Fluid
**TOTAL CARTER SH 220 (--- GAL)**

## DIAGNOSIS

**Recommendation**
We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

**Wear**
Gear wear is indicated.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0798719** | WC0781664 | WC0673343 |
| Sample Date | | Client Info | | **11 Nov 2023** | 13 May 2023 | 30 Jul 2022 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | Not Changd |
| Sample Status | | | | **SEVERE** | SEVERE | SEVERE |

| 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 D5185m | >200 | **477** | 533 | 6433 |
| Chromium | ppm | ASTM D5185m | >10 | **5** | 6 | 63 |
| Nickel | ppm | ASTM D5185m | >10 | **2** | 1 | 32 |
| Titanium | ppm | ASTM D5185m | | **1** | <1 | 15 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **128** | 199 | 2152 |
| Lead | ppm | ASTM D5185m | >50 | **4** | 4 | 25 |
| Copper | ppm | ASTM D5185m | >200 | **43** | 73 | 468 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | <1 | 0 |
| Antimony | ppm | ASTM D5185m | >5 | **---** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 1 |
| Cadmium | ppm | ASTM D5185m | | **<1** | <1 | 1 |

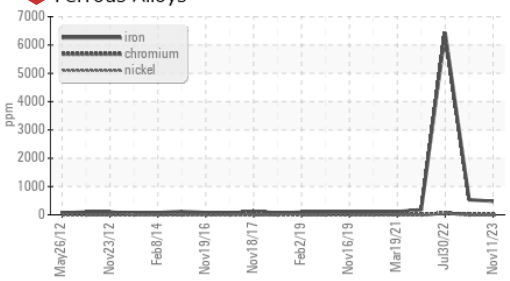
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **1** | 3 | 11 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **8** | 25 | 13 |
| Manganese | ppm | ASTM D5185m | | **6** | 6 | 66 |
| Magnesium | ppm | ASTM D5185m | | **0** | 4 | 82 |
| Calcium | ppm | ASTM D5185m | | **0** | 23 | 109 |
| Phosphorus | ppm | ASTM D5185m | | **181** | 366 | 435 |
| Zinc | ppm | ASTM D5185m | | **40** | 126 | 329 |
| Sulfur | ppm | ASTM D5185m | | **2987** | 4794 | 2783 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **30** | 47 | 1112 |
| Sodium | ppm | ASTM D5185m | | **11** | 15 | 83 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | 2 | 27 |

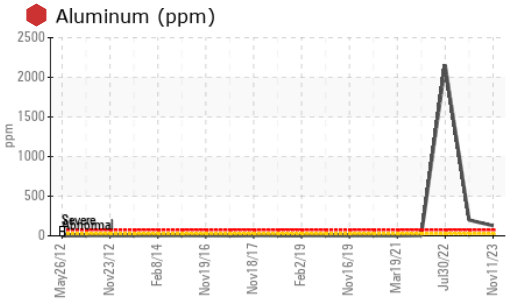
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.19** | 0.60 | 0.40 |

# OIL ANALYSIS REPORT

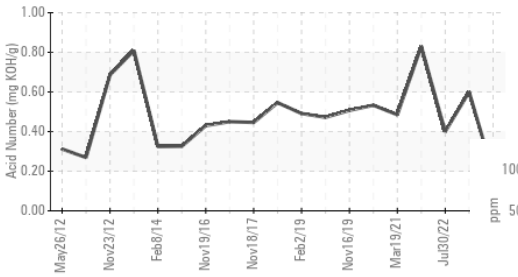
Ferrous Alloys



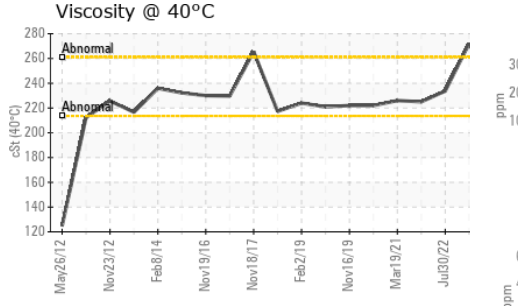

Aluminum (ppm)




Acid Number




Viscosity @ 40°C



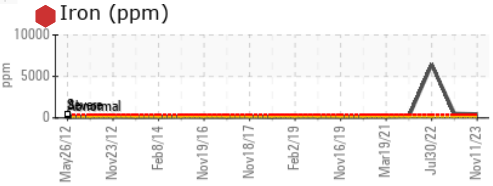

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | MODER | MODER |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **MODER** | NONE | MODER |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | 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 D445 | | **238** | 272 | 233.7 |

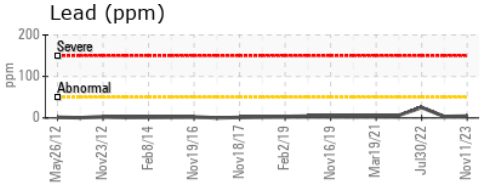
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | *no image* | *no image* | *no image* |
| Bottom | | | *no image* | *no image* | *no image* |

## GRAPHS

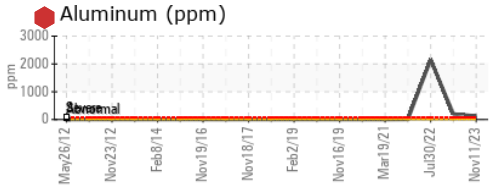
Iron (ppm)



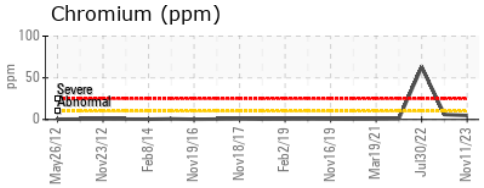

Lead (ppm)



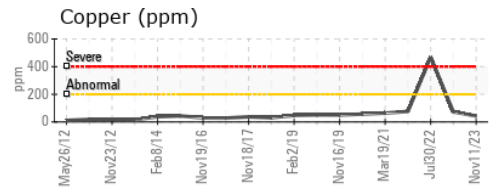

Aluminum (ppm)



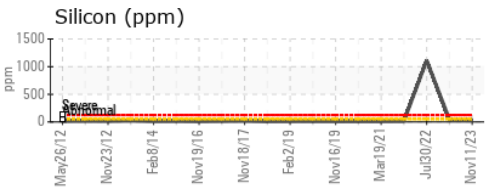

Chromium (ppm)



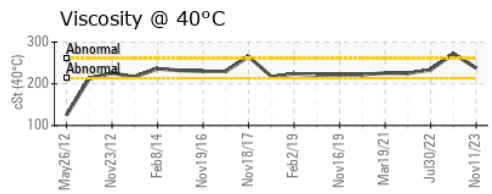

Copper (ppm)



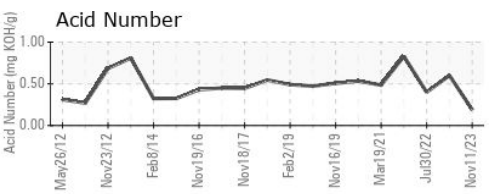

Silicon (ppm)




Viscosity @ 40°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0798719 **Received** : 17 Nov 2023
**Lab Number** : 06011593 **Diagnosed** : 21 Nov 2023
**Unique Number** : 10750737 **Diagnostician** : Don Baldridge
**Test Package** : MOB 2

*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)*

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